PARTNERSHIP FOR THE EDUCATION IN AGRICULTURE IN SOUTH-EAST EUROPE

Information on Faculties of Agriculture in the Region

Ljubljana, July 2011

PARTNERSHIP FOR THE DEVELOPMENT OF HIGHER EDUCATION IN AGRICULTURE IN SOUTH-EAST EUROPE

Information on Faculties of Agricultue in the Region

Ljubljana, July 2011

PARTNERSHIP FOR THE DEVELOPMENT OF HIGHER EDUCATION IN AGRICULUTRE IN SOUTH-EAST EUROPE

Information on faculties of agriculture in the Region

Editor: assist. mag. Vesna Erhart

Steering commette:

prof. dr. Franc Štampar,

prof. dr. Emil Erjavec,

prof. dr. Dejan Škorjanc,

dr. Marjeta Stevanović,

dr. Karla Šturm

Ljubljana, July, 2011

Information on Faculties and education system in the country were provided by faculties. The responsibility for the mistakes rests on them.

Foreword

Faculties of agriculture situated on the territory of the former common state, which is largely known today as the South-East Europe, have quite a few common points and challenges which call for enhanced cooperation. These challenges are external, ranging from European integration processes, demanding harmonisation of the manner of work and procedures by virtue of comparison, all the way to the growing actual problems of agriculture where a tremendous demand for a new role, as well as for a transfer of knowledge and accelerated development has emerged. Nonetheless, there are certain problems common to all faculties, namely the financial and management issues of universities, the needs for a stronger research infrastructure and the decreasing number of enrolled students. For the leading faculties with the longest history and notoriety, however, the common challenge is also the growing number of institutions which often offer related and comparable programmes of questionable quality.

To ensure faster and more coherent development of South-East Europe in the field of higher education and research activity in agriculture, closer cooperation among the leading faculties of agriculture in the region has to be established. Reasons for better cooperation in all areas of university work – from education, research and university management – lie in the common features of faculties, arising from their role in state entities and their existing historical, geographical and cultural ties. The leading faculties have related goals and problems which may also be solved by strengthening cooperation, exchanging experience and searching for synergies.

Therefore, the meeting of Deans of Leading Faculties of Agriculture of South-East Europe »Partnership for the Development of Higher Education in Agriculture in the Region« took place in November 2010 on the premises of the Biotechnical Faculty of the University of Ljubljana, Slovenia.

Meeting was attended by representatives of ten faculties of agricultural from seven countries from the Western Balkans, and also by representatives of the Slovenian Government Bodies such as: the Ministry of Higher Education, Science and Technology, Ministry of Agriculture, Forestry and Food, Slovenian Research Agency, and Slovene Human Resources Development and Scholarship Fund.

In the course of the meeting, the common challenges and opportunities for a closer cooperation in the Region and the inclusion of the Western Balkans in European integrations were discussed. After the presentation of needs and possibilities which may be offered by educational institutions of the Western Balkans to this common area in the field of agriculture, and a lively discussion, the representatives of the ten faculties of agriculture adopted the following joint conclusions:

- The faculties gathered here support further strengthening of cooperation between the leading faculties of agriculture in the Western Balkans in the direction of forming a close and continuous form of cooperation between the leading faculties in the Region.
- The future forms of cooperation should be based upon partnership and equal relations.
- First, it needs to be determined which individuals, individual groups and faculties are already engaged in cooperation in different fields of education, research and expert work. A questionnaire (annex) needs to be submitted to the cooperating faculties which will enable the elaboration of an overview of current cooperation between partners.
- The next Meeting of Deans of the Leading Faculties of Agriculture in the Region will take place in 2011, in Macedonia (Ohrid/Skopje). Until then, the cooperation will be managed by the Biotechnical Faculty of Ljubljana.
- A working group shall be formed comprising: Prof. Dr. Dragi Dimitrievski (Skopje), Prof. Dr. Emil Erjavec (Ljubljana), Assist. Prof. Dr. Milanka Drinić (Banja Luka), Prof. Dr. Ivan Pejić (Zagreb). Until the next meeting, the group needs to think about the forms of cooperation and possibly prepare a draft of the memorandum of cooperation.

This report “Information on Faculties of Agriculture in the Region” is the first step towards accomplishing a common goal. It brings information on the systems of university education in

individual states of the Region and represents higher education study programmes. A special focus is placed on the presentation of the research work and the possibilities of cooperation in the field of research. Information was gathered on the basis of a uniform questionnaire, and the decision regarding the extent and manner of the submitted information was left to faculty representatives. Thus, the quality and scope of information is entirely within the domain of the faculty representatives.

The present documentation is a relevant and valuable information on the functioning of leading faculties of agriculture in the Region. We therefore hope that it will at least partly contribute to the strengthening of cooperation and searching for common objectives and activities. We would also like to sincerely thank all those who contributed the information. Documentation will be presented at the next meeting which is expected to take place in Macedonia at the end of 2011 or in the first half of 2012.

Prof. Emil Erjavec

Editor in steering committee

Meeting of Deans of the Leading Faculties of Agriculture of South-East Europe

Draft Memorandum of Cooperation, prepared to be signed at the next meeting of deans of the Region

Objectives of Organising the Meeting of Deans

The objective of organising such meeting is the strengthening of cooperation between faculties of agriculture in South-East Europe, aiming to achieve a smoother and more efficient functioning. Such cooperation includes all spheres of academic life.

Cooperation in the field of study programmes is based on the exchange of views and approaches on the formation and implementation of study programmes. The goal is to achieve a greater harmonisation and to look for synergies among different institutions. The mobility of professors and students is being promoted and the possibilities for joint programmes are being explored. Cooperation at the level of doctoral education and promotion of education and research activity of the younger generation will be particularly accelerated. A special emphasis is also put on the support to the formation and building up of an e-platform in education.

The main objective in the research field is to contribute to raising the scientific excellence and greater regional integration of research work in the field of life sciences. Joint efforts to raise EU research and education funds, organisation of scientific meetings and publication of scientific journals will be promoted. Furthermore, the strengthening of research networks by individual scientific fields of life sciences, and cooperation of laboratories, as well as demonstration and experimental infrastructures will occupy a special role.

In the field of organisation and management of higher education institutions, the aim is to eliminate inter-institutional obstacles to cooperation, as well as the exchange of views, best practices and experience as regards the management and organisation of faculties. Priority will be given to cooperation in habilitation procedures, bilateral recognition, and cooperation in the field of bibliography, and the development of promotion and public relations policy in university institutions.

Members of the Meeting of Deans

The Meeting of Deans includes the leading faculties of the Region which have or are in the process of organising higher education study programmes at all three levels of university education in conformity with the “Bologna Declaration”.

Members of the Meeting of Deans are faculties of agriculture of the Region, signatories of this Memorandum.

Manner of Work

The Meeting of Deans is a form of cooperation without any special institutional infrastructure, based upon the principles of equality, reciprocity and unanimity of decision. Expenses of cooperation are borne by individual institutions.

The Meeting of Deans operates in the form of at least bi-annual meetings/conferences of faculties' management. As a general rule, the country and the host faculty is presented, and one or more interesting and important topics of cooperation are discussed at such meetings. Decisions on future activities are unanimously adopted thereat, and the next meeting is determined.

Between two meetings, the activity of the Meeting of Deans is coordinated by the institution hosting the meeting. Its task is to provide for the realisation of the decisions adopted at the last meeting, and to offer support to the institution as regards the organisation of the next meeting. The coordination institution acts in mutual interest of all members. It keeps a record of all e-mail addresses, forwards information and takes initiatives of possible cooperation. However, without the consent of all members, the coordination institution does not have a right to represent others in any possible activities.

Prof. Dr. Emil Erjavec (Ljubljana)

Prof. Dr. Ivan Pejić (Zagreb)

Prof. Dr. Dragi Dimitrievski (Skopje)

Assist. Prof. Dr. Milanka Drinić (Banja Luka)

Index

1 INTRODUCTION 1

1.1 SUMMARY OF FINDINGS 1

1.2 LIST OF FACULTIES' PROPOSALS FOR COOPERATION IN THE FUTURE 3

2 HIGHER EDUCATION AND RESEARCH ACTIVITY OF LEADING FACULTIES OF AGRICULTURE OF SOUTH-EAST EUROPE 5

2.1 HIGHER EDUCATION IN AGRICULTURE IN SOUTH-EAST EUROPE 5

BOSNIA AND HERZEGOVINA 5

University of Banja Luka, Faculty of Agriculture 7
University of Mostar, Faculty of Agriculture and Food Technology 15
University of Sarajevo, Faculty of Agriculture and Food Sciences 20

CROATIA 25

University of Josip Jurj Strossmayer in Osijek, Faculty of Agriculture 27
University of Zagreb, Faculty of Agriculture 32

KOSOVO UNDER UNSCR 1244/99 39

University of Prishtina, Faculty of Agriculture and Veterinary Studies 39

MACEDONIA 44

University of Skopje, Faculty of Agricultural Sciences and Food 45

MONTENEGRO 51

University of Montenegro, Biotechnical Faculty 51

SERBIA 56

University of Belgrade, Faculty of Agriculture 57
University of Novi Sad, Faculty of Agriculture 60

SLOVENIA 67

University of Ljubljana, Biotechnical Faculty 68
University of Maribor, Faculty of Agriculture and Life Sciences 75

2.2 RESEARCH ACTIVITY OF LEADING FACULTIES OF AGRICULTURE OF SOUTH-EAST EUROPE 83

BOSNIA AND HERZEGOVINA 83

University of Banja Luka, Faculty of Agriculture 83
University of Mostar, Faculty of Agriculture and Food Technology 99
University of Sarajevo, Faculty of Agriculture and Food Sciences 112

CROATIA 120

University of Josip Jurj Strossmayer in Osijek, Faculty of Agriculture 120
University of Zagreb, Faculty of Agriculture 134

KOSOVO UNDER UNSCR 1244/99 137

University of Prishtina, Faculty of Agriculture and Veterinary Studies 137

MACEDONIA 140

University of Skopje, Faculty of Agricultural Sciences and Food 140

MONTENEGRO **143**
University of Montenegro, Biotechnical Facult *143*
SERBIA **147**
University of Belgrade, Faculty of Agriculture *147*
University of Novi Sad, Faculty of Agriculture *151*
SLOVENIA **156**
University of Ljubljana, Biotechnical Faculty *156*
University of Maribor, Faculty of Agriculture and Life Sciences *162*

ANNEX 1: FACULTIES PROPOSALS FOR COOPERATION IN THE FUTURE ..... **I**

ANNEX 2: LIST OF COORDINATORS FOR INTERNATIONAL COOPERATION OF FACULTIES OF AGRICULTURE IN SOUTH-EAST EUROPE ..... **XVI**

1 INTRODUCTION

The aim of this report is the elaboration of an overview of higher education and current cooperation, and the research activity on agriculture in South-East Europe, and is the result of conclusions of Meeting of Deans of Leading Faculties of Agriculture in the Region. In December 2010 the questionnaire was prepared and sent to faculties. They provided information in the first semester of 2011.

The report contains information on twelve leading Faculties of Agriculture from seven countries of the Region: Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244/99, Montenegro, Macedonia, Slovenia and Serbia. To avoid any kind of ranking, countries and faculties are classified in alphabetical order by the name of the country and the name of university.

In general, the report consists of three parts: introduction, report on pedagogic issues and report on research and cooperation issues in the region. In the introduction, in chapter one, summary of findings are presented. Furthermore, a list of faculties proposals for cooperation on research, proposals for international exchange and proposals for cooperation on strategic issues are presented. Detailed descriptions of these proposals are enclosed in Annex 1.

Chapter two has two main sections. Chapter 2.1 provides a brief presentation of each country's education system, as well as an overview of its colleges and higher education organisations in the field of agriculture. This is followed by a detailed presentation of selected country faculties of agriculture. For each of them there is a general information on the faculty and its organisational structure, faculty study programmes and some key data on students and graduates. Furthermore, international exchange over the last three years and future plans in this field are described. The second section (chapter 2.2) focuses on faculties' research and cooperation activity. It contains information on faculties' research groups, current cooperation projects and short description of key conferences, scientific meetings and seminars in its organisation.

Finally, in Annex 2, contact information of persons responsible for future cooperation of this group is listed.

1.1 Summary of Findings

First of all, it is necessary to clearly state that situation as regards pedagogical process and research in Agriculture in each country is very diverse, and additionally there is an important variation of exactness of data provided by the faculties. Having in mind both remarks, summary provides sound general conclusions.

This report provides information on tertiary education institutions of Agriculture in seven countries of South-East Europe. In this region there are 31 Colleges and Higher Education Organisations of Agriculture and the leading twelve of them were invited to participate in this project.

The importance of this report also lies in the fact that in year 2010 almost 14.000 (13.770) students were studying agriculture on twelve faculties that participate in this research and they present the majority of future researchers, experts,… on agriculture in the Region. Over 80 % (81,3 %) of all students attended undergraduate study programmes (1st Bologna cycle) and 3 % were studying in doctoral study programmes.

According to the number of students (in year 2010), faculties of agriculture can be classified in three groups: faculties from Zagreb, Belgrade, Novi Sad and Ljubljana with over 2.000 students in large faculties, medium-sized faculties with over 800 students – Osijek, Pristina and Skopje, and other faculties with 600 students or less (Sarajevo, Mostar, Banja Luka, Podgorica, and Maribor). Nevertheless the size of faculty depends on the size of the country and orientation of the faculty in the narrower or wider field of agriculture (such as biotechnology, microbiology).

The three-cycle higher education in accordance with the Bologna Declaration is implemented in all twelve faculties, though all of them still implement programmes known as the “old programmes”. In addition to academic study programmes, some faculties also organize professional study programmes. There are 86 undergraduate programmes, 102 graduate programmes and 11 doctoral study programmes.

Only a few of the programmes are internationally accredited. The two exceptions are the Faculty of Agricultural Sciences and Food in Skopje with MSc study programme of Agribusiness (in cooperation with the Swedish University of Agriculture Sciences – SLU in Uppsala) and the Biotechnical faculty in Ljubljana, offering six programmes with FEANI INDEX (Forestry and renewable forest resources; Agriculture – agronomy and animal production; Landscape architecture; Wood science; Food science and nutrition;).

Students from most of faculties can study a part of their study programme on other faculties in the country of origin or abroad, and they can get financial support for expenses, though only a half of the faculties reported of bilateral agreements for student exchange with foreign institutions.

The procedure for recognition of diplomas for students from abroad that would like to continue their studies at one of twelve faculties is a rather standardised procedure, yet time consuming. In most cases, the faculty's or university's commission decides on these issues, while in Croatia and in Kosovo under UNSCR 1244/99 this procedure is under national institution jurisdiction.

The Faculty of Agriculture in Zagreb and the Biotechnical faculty in Ljubljana also provide classes or programmes in English.

International exchange of students, researchers and professors is predominately in close relation to international projects. A significant number of student exchanges are related to the preparation of master or doctoral thesis. In 2010, faculties reported almost 500 international exchanges of students, researchers and professors. In average, the number of persons going abroad is slightly higher than the number of persons visiting their faculty (61% of persons spent some time abroad).

Seven faculties have accredited doctoral study programmes. In 2010 there were 432 students studying in doctor study programmes and they could choose between 11 programmes. List of doctoral study programmes is presented in the table below.

Faculty	Doctoral study programmes
Faculty of Agriculture, Osijek	Agricultural sciences (with 8 different majors: Agricultural economics, Agrochemistry – soil and plant, Animal nutrition, Hunting and kinology, Plant breeding and seed production, Animal husbandry, Plant protection and Agricultural machinery
Faculty of Agriculture, Zagreb	Agricultural Sciences and Agricultural Economics
Faculty of Agriculture, Belgrade	Agricultural Sciences and Food Technology
Faculty of Agriculture, Novi Sad	Agronomy, Agro-economy, Animal Production and Veterinary Medicine
Biotechnical faculty, Ljubljana	Interdisciplinary Doctoral Study Programme (in 15 areas: Agronomy, Bioinformatics, Biology, Biotechnology, Economics of Natural Resources, Horticulture, Landscape Architecture, Wood and Biocomposites, Nanosciences, Nutrition, Technical Systems in Biotechnics, Management of Forest Ecosystems, Protection of the Natural Heritage, Animal Science, Cell Sciences and Food Sciences). Three Interdisciplinary Doctoral Study Programmes in partnership with other faculties of the University of Ljubljana: Biomedicine, Environmental Protection and Statistics.
Faculty of Agriculture and Life Science, Maribor	Agriculture and Agricultural economics

In the field of research and cooperation in the Region, faculties stated 36 more important or traditional Conferences, Scientific Meetings and Seminars, and 146 Current Cooperation Projects. To some extent this reflects cooperation in common geographic territory, but more likely indicates a good cooperation between individual researchers and institutions. Finally, as a result of this project, over 40 proposals for future cooperation on research, international exchange and strategic issues were proposed.

1.2 List of Faculties' Proposals for Cooperation in the Future

The aim of this project and document is an overview of current situation as regards the faculties of agriculture in the Region, as well as an enhancement of cooperation in the future. Faculties proposed over 40 proposals for cooperation which are divided in three sections: cooperation on research, international exchanges and cooperation on strategic issues.

Themes of cooperation proposals are presented below and detailed presentation may be found in Annex 1.

Proposals for Cooperation on Research

Proposals for research on agronomy and horticulture scientific area:

- Certification of plant material
- Preservation of autochthon variety of potato
- Alternative field crops, production systems
- Rayonization of wine-growing regions in Bosnia and Herzegovina and Republike Srpska
- Improvement of methods for diagnosis of vegetable viruses
- Improvement of methods for diagnosis of fruit fungi
- Plant-parasitic nematodes
- Gathering of maize local populations and development of maize inbred lines in agroecological conditions of Kosovo
- GMO – control and usage
- Conservation and utilization of Autochthonous Plant Genetic Resources in Western Balkan
- Increased water productivity for drought alleviation and improved food security
- Fertigation for improved water use efficiency, fertilizer use efficiency, higher yield and environment protection
- Effect of climate change on crop yield and crop water requirement
- Devastation and Re-Cultivation of Arable Land in Western Balkan Countries

Proposals for research on animal scientific area:

- Improving of animal production and production of different animal products by applying scientific and professional knowledge
- Breeding and morphological characteristic of autochthon “Busha” cattle in Kosovo
- Livestock production - animal genetic resources, breeding value evaluation, genomic selection, biodiversity in livestock
- Molecular analysis of genetic relatedness and evaluation of cultivars identity of old, traditional and domesticated agricultural species
- Marker assisted selection in development of breeding programs in SEE
- Determination of genetic distance among Busha cattle and Sharplanina Shepard dog in SEE using DNA microsatellites

Food science area:

- Processing a fruit products
- Study on harvest and postharvest fruit treatments and other horticultural crops
- Organic vegetable production – quality and health aspects

- Application of Grape Phenol Maturation Concepts in Viti- and Viniculture in Western Balkan Winegrowing Regions
- Study on consumers' attitudes and behaviours for fruits and fruit products
- Nutritional and Biologically Valuable Compounds of Autochthonous Food Products

Agriculture economics:

- LCA in agriculture
- Demarcation of the Bosnia and Herzegovina territory depended of production and development conditions.
- Research and definition of non-commercial farms in the function of determining support measures to their insufficient income Listen
- Development of "knowledge networks" for rural development - Mobilisation of intangible intellectual assets and human capital for rural development
- Agriculture extension - simulation methods for transfer of extension skills
- Research on selected topics in agricultural economics

International Exchange of lecturers, Researchers and Students, and the Organization of Other Activities for These Groups

Proposals:

- Exchange of lectures, development of new curriculum for courses in organic agriculture and organization of summer schools for students from the region
- Exchange of professors, researchers, assistants and students
- The exchange of lecturers at the doctoral and master's studies
- Cooperation in nomination of mentors and committee members for defences MSc and PhD thesis

Proposals for Cooperation on strategic issues

Proposals:

- Establishing SEE student network and helping students in organizing the conference about student's issues.
- Biennial gathering of the dean and vice dean (decision makers) of all the SEE agricultural faculties with the aim of discussing and defining development policies (every two years the gathering would be held in different place).

2 HIGHER EDUCATION AND RESEARCH ACTIVITY OF LEADING FACULTIES OF AGRICULTURE OF SOUTH-EAST EUROPE

The following chapter is divided into two parts: higher education and research activity. In the first part, there is a brief presentation of each country's education system, as well as a presentation of colleges and higher education organisations in the field of agriculture. This is followed by detailed presentation of selected country faculties of agriculture. For each of them there is general information on the faculty and its organisational structure, faculty study programmes and some key data on students and graduates. Furthermore, international exchange over the last three years and future plans in this field are described.

The second part of this chapter contains information on faculties' research groups, current cooperation projects and short description of key conferences, scientific meetings and seminars in its organisation.

Information on Faculties and education system in the country were provided by faculties. The responsibility for the mistakes rests on them.

2.1 Higher Education in Agriculture in South-East Europe

BOSNIA AND HERZEGOVINA

Country Education System

The basic requirement for entering the first year of undergraduate study programme at university is completed four-year secondary school. Diplomas of secondary schools obtained in other countries are easily transferred to documents recognized as diplomas obtained in Bosnia and Herzegovina. Most of the faculties in Bosnia and Herzegovina Universities organized entrance exams as precondition for enrolling of the first year of undergraduate study programmes. In close cooperation with local governments each of Bosnia and Herzegovina Universities set the number of so called budget students i.e. students who do not pay for their studying. Besides them, students out of so called "quotas" can study if they pay a part of the economically estimated full study costs.

Under the law on high education put on power in 2008, university education in Bosnia and Herzegovina is organised according to the system[1] of transferable points and has three levels: The undergraduate study programmes typically last for three to four years and bring 180 to 240 ECTS points. Upon the completion of the undergraduate study, students are awarded the title of Bachelor of Arts or Science. Postgraduate (or more commonly graduate) study programmes, which last for two

[1] Candidates who studied according to the old program (before the introduction of the Bologna) or at some other similar university or who graduated from college in accordance with ECTS system at other similar university can submit a request that their studies be evaluated and recognized.

years, carry 120 ECTS points and award the degree of Master of Art or Science. PhD courses can be taken after completing a graduate (postgraduate) university course – they typically last for three or four years, and the academic title of Doctor of Science or Doctor of Arts is awarded upon completion. The university can also offer postgraduate specialist courses which last for one to two years, by which one can acquire the title of a specialist in a certain specialist field such as medicine.

Except obtained 180 or 240 ECTS (or similar points recognized as ECTS equivalents), there are no other preconditions for transition from undergraduate to master study programmes. Entrance exams could be organized for students who are coming from so called non-compatible undergraduate study programme. Most usually, the compatibility is decided by the study programme teaching-scientific board.

The high average grade on master study is set as a common prerequisite for entering doctoral study programme. However, most of the universities and faculties keep an option to pass a demanding entrance exam[2] instead of the high average grade from previous studies.

College and Higher Education Organisations in the Field of Agriculture in the Country

In Bosnia and Herzegovina, the education within the field of agriculture is organized throughout high schools and colleges. This whole system is supervised by the Entity Ministries of Education but in some cases the cantons (in Federation of Bosnia and Herzegovina), have their own education authority which only makes the system work harder.

The education within the field of agriculture is organized throughout high schools and colleges which exclusively deal with production or some parts of this sector. In Bosnia and Herzegovina there are 14 high schools which educate agriculture technicians. In the agricultural production sector, there are faculties of agriculture, two faculties of technology (including food production technology), one faculty of forestry and one college of veterinary. Apart from these faculties, certain topics (market analysis, trends, macroeconomics and microeconomics, etc.) are dealt with at the colleges of economy by alphabet order:

- Agromediterranean Faculty, University Džemal Bijedić of Mostar
- Faculty of Agriculture and Food Science Production, University of Sarajevo
- Faculty of Agriculture and Food Technology, University of Mostar University
- Faculty of Agriculture, Banja Luka University of Banja Luka
- Faculty of Agriculture, University “East Sarajevo” University
- Faculty of Biotechnical Sciencenology, Bihac University of Bihać

Upon finishing these faculties, the students get the engineer degree, and then they can go to MA or PhD studies. Other faculties provide education at areas such as environment protection or biodiversity. These qualifications are not recognised as equivalent to those at EU universities or institutions. Most

[2] In Banja Luka the entrance to the third cycle studying program is performed based on the open competition issued by the University Senate.

By rule, the open competition is published before the beginning of the academic year, and the Decision on the 3rd cycle studying sets forward the following requests (1) Completion of relevant studies of the first and second cycles or the integrated studies anticipated by the third cycle studying program of at least 300 ECTS, (2) The master level completion within the relevant field anticipated by the third cycle studying program, (3) The recognition of earlier titles at the University of Banja Luka in accordance with the Regulation Book on Procedures for Recognition of Earlier Titles at the University of Banja Luka.

The candidate list for the entrance to the 3rd cycle studies is composed by the Commission on the basis of average marks at the 1st and 2nd cycles, years of studying, scientific work and other requests estimate by the third cycle program.

faculties lack the permanently employed faculty staff (up to 50), others have between 50 and 100 employees. Most faculties engage teachers from other universities from neighbouring countries in cases when they do not have their own staff in certain areas of research. Most research in the area of agriculture is done through bilateral projects and EU projects. It should be stated that a great number of these institutions have relatively small capacities for running researches. At faculties, students gain knowledge at the basis of primary agricultural production, but also at agro-economics as: Soil and soil management, Production of food and fodder (all major fields), Agro-economics, agricultural and food production policies, agricultural machines, development of rural areas, environment economics, public policies, marketing, international market, macroeconomics and microeconomics, international trade, international deals and institutional frame; and Animal health, hygiene and safety of fodder, animal health and hygiene control, animal breeding.

Most faculties provide consultancy and advising in the fields numbered above, (depending on the type of college). Besides, some colleges have particular laboratories: control laboratories for food and fodder, laboratories for herb health control, laboratories for technology improvement, a laboratory for soil quality control, and all these provide extra service apart from the scientific research. Colleges exist within seven universities which are separate legal entities.

UNIVERSITY OF BANJA LUKA, FACULTY OF AGRICULTURE

Address: Bulevar vojvode Petra Bojovića 1A, 78000 Banja Luka, Bosnia and Herzegovina

Telephone (central office): +387 51 330 901

E-mail (Dean's office/secretariat): agrobl@blic.net

Website: www.agrofabl.org

Key Areas of Work

Faculty of Agriculture was founded in 1992 and today it is an integral part of the University of. Up to now, the Faculty has been through three phases, and the teaching process has been altering in accordance with social circumstances and students' interests. Until the academic 2001/2002 year, the teaching process was performed at only one department, i.e. general department of agriculture, after which there have been three separate departments as follows: agriculture, fruit growing and viticulture, and animal production.

Ever since the 2006/2007 academic year, Faculty of Agriculture has been following the principles of "Bologna" aiming at integration into the European university system. The reform of the studying system according to so-called "Bologna Declaration", changes within the system of financing, joining the international scientific and educational programs are all a new challenge both for the Faculty and the community in general. In compliance with the pre-mentioned process, there has been an adoption of curriculums for the two studying cycles, which take 10 semesters and score 300 ECTS. The first studying cycle lasts 6 semesters and scores 180 ECTS, and the second cycle lasts 4 semesters and scores 120 ECTS.

Since 2005, the Faculty has had a lot of success when it comes to both the teaching process and scientific research. The scientific research at the Faculty refers to the following fields: agriculture, vegetable production, fruit growing and viticulture, horticulture, animal production, plant protection, agrarian economy and rural development.

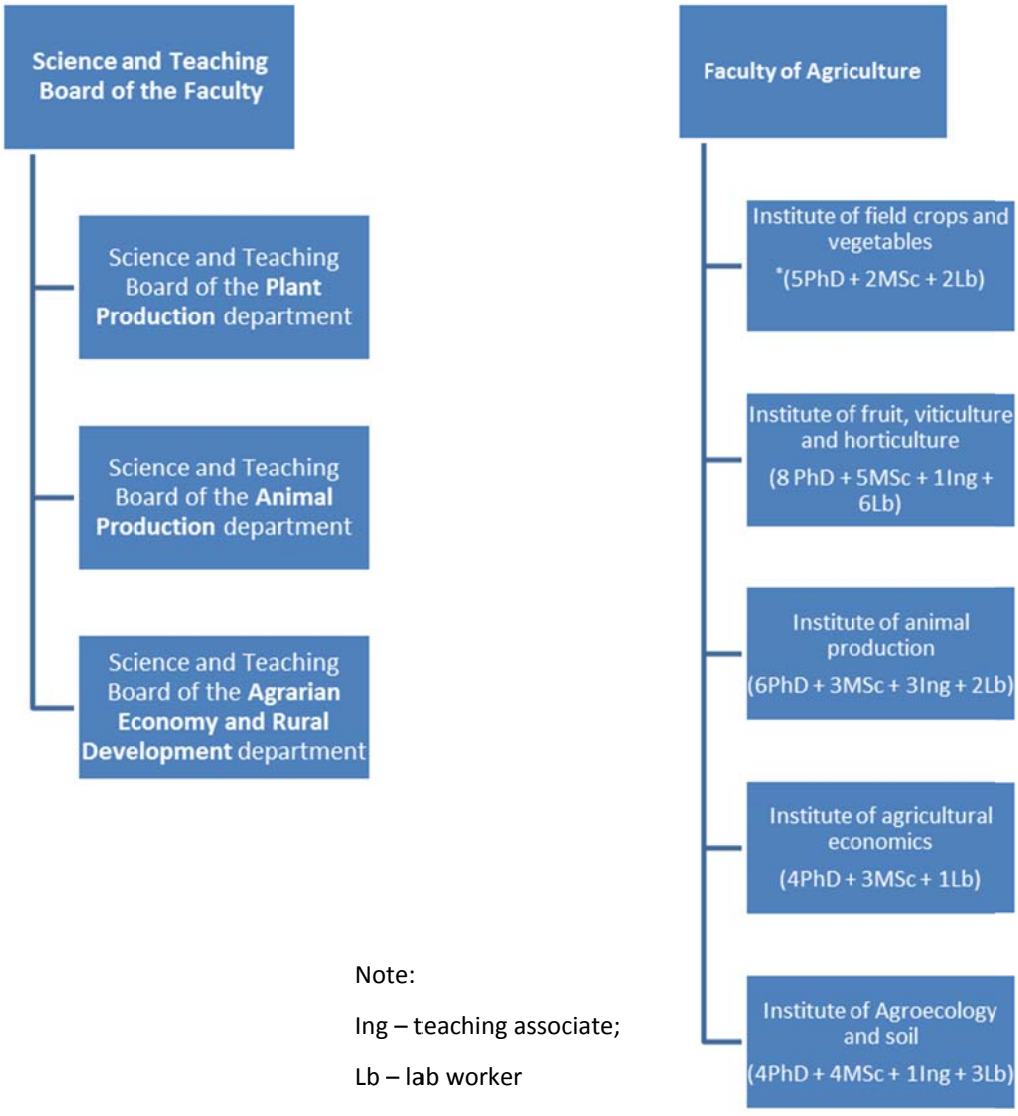
The Faculty, either on its own or in cooperation with other organizations, runs the scientific researches via studies and projects, strategy development, consulting, certificates and controls within the field of agricultural production.

Organisational Structure

Activities at the Faculty are realized by the Science and Teaching Board or the Institutes that function within the Faculty. Issues that refer to the teaching process, academic staff election, students' matters, institutional cooperation, etc. are dealt with by the Science and Teaching Board of the Faculty. In order to make the work of the Board even more successful, there are also boards that deal with each department separately (graph.1). These boards discuss the relevant questions with reference to departments and make remarks and conclusions that are further on sent to the Faculty Board. The current organization at the Faculty helps deal with various issues that arise.

Scheme of the organization at Faculty of Agriculture

oard **ites**



Note:

Ing – teaching associate;

Lb – lab worker

Issues referring to the scientific researches (on both national and international level) are mostly dealt with at Faculty's institutes, which are five at the moment (graph.2). Members of the institutes usually submit joint applications for certain projects. Institutes participate in the process of providing professional and advisory services, devise elaborates at a third party request, and organize scientific and professional conferences. There are departments at the Faculty which might, in the future, become more involved in defining prospects of the teaching process.

Presentation of Study Programmes

Study Programmes

The teaching process at the Faculty of Agriculture takes place at two study program levels: first cycle (undergraduate studies) and second cycle (master studies). **The first cycle** lasts for 3 years (6 semesters) and there are three separate departments: a) plant production, б) animal production and c) agrarian economy and rural development (graph 3), all of which have different target skills. Within the Plant production department, there are three courses that students enrol each year: field crops and vegetable, plant protection, and fruit and viticulture or horticulture (each second year for one of these courses). Students attend 24 school classes per week and there are six modules per a semester. There is a unified number of ECTS for each module - 5. The number of ECTS per semester is 30. The final paper scores 10 ECTS. Undergraduate students have the obligatory practice lessons, which, depending on the activities and options, are done between 4th and 5th semesters and between 5th and 6th semesters. Practice lessons are obtained at some commercial company or farm with which there is an obligatory contract on the realization of the practice lessons. Teaching process at the first cycle is mostly conducted by the Faculty of Agriculture employees and there are no contracts with any other institution regarding the teaching process. The teaching process includes some guest speakers from the University of Banjaluka and neighbouring countries (Serbia, Croatia, Slovenia and Montenegro).

Organization scheme of the first cycle study programmes

1st cycle departments		
PLANT PRODUCTION	ANIMAL PRODUCTION	AGRARIAN ECONOMICS AND RURAL DEVELOPMENT
courses	course	
☞ Field crops and vegetable ☞ Fruit and viticulture ☞ Horticulture ☞ Plant protection	☞ Zoo technique	

Second cycle studies are organized within eight existing courses at the Department of plant production (agriculture, fruit growing, vegetable production, viticulture and enology, plant protection, horticultural space planning, technology of herbal product processing and the soil and water management), two courses at the Department of animal production (Safety of animal origin products) and two courses at the Department of agrarian economics and rural development (Agro business and Rural development) graph 5. Within the Department of agrarian economics and rural development, we are planning one-year master studies (Advisory on rural development) as a result of implementation of TEMPUS project. Second cycle studies last for two years i.e. four semesters, meaning that one academic year lasts for two semesters. Like the first cycle studies, one semester scores 30 ECTS, i.e. at least 60 ECTS for an academic year, meaning that at a student scores 120 ECTS during the second cycle and the total sum of 300 ECTS together with the first cycle score. The curriculum refers to 15 modules, a scientific project, and the final (master) thesis. The ratio of obligatory and optional modules during the second cycle studies is 2:1. The master thesis scores 20 ECTS. Upon graduating from the second cycle, students have the option of entering the third cycle studies with the precondition of previously scoring total sum of 300 ECTS.

Organization scheme of the second cycle study

2nd cycle departments		
PLANT PRODUCTION	ANIMAL PRODUCTION	AGRARIAN ECONOMICS AND RURAL DEVELOPMENT
courses	course	course
☞ Agriculture ☞ Fruit growing ☞ Vegetable production ☞ Viticulture and enology ☞ Plant protection ☞ Horticultural spatial planning ☞ Technology of herbal product processing ☞ Soil and water management	☞ Safety of animal origin products	☞ Agro business ☞ Rural development ☞ Advisory on rural development (one-year master studies)

Doctoral studies, i.e. the third cycle studies, will last for six semesters, i.e. three academic years. The third cycle studies score the total sum of 180 ECTS, 60 ECTS referring to the final dissertation. There are certain activities taking place so as to enable the third cycle studies (doctoral studies).

International Accreditation of Study Programmes

Faculty of Agriculture Banja Luka does not have International Accreditation of Study Programmes. Faculty started with the activities aiming at getting relevant international accreditation for the present study programmes.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

Studying rules: During the studies, a student has the right to spend a certain period of time (a semester or an academic year) at some other college in the country or abroad via the international student exchange programs or on the basis of bilateral agreement between universities. In compliance with the contract that a student signs with the University, the equivalent ECTS score is acknowledged.

Procedure of recognition of completed study responsibilities at another faculty or in another country

The procedure for recognition is set off at a party's request. Along with the recognition form, the following documents are submitted:

- original credentials + three certified photocopies:
- certified credential translation (by an authorized court interpreter), original + three certified photocopies;
- translation of passed exams per semester and each academic year, original + three certified photocopies;
- short abstract for each module curriculum issued by the college – 3 copies,

Translation certified by an authorized court interpreter:

- final paper (undergraduate, master thesis, doctoral thesis);
- certificate of citizenship;
- cheque receipts on the procedure costs paid to the University.

Two copies of the recognition form along with the documents are submitted by the Office to the faculty in charge as was set by the Senate decision. At the Office request, the University Senate appoints a Commission of at least three members, whose task is to prepare the suggestion to recognize the foreign college diploma and the candidate's right to continue the studies. The procedure of foreign college diploma recognition is then continued at the faculty level. The Commission submits the report to the Teaching – Scientific Board of the faculty in charge.

Upon receiving the report, the Board adopts the suggestion to recognize the diploma and forwards it to the Office, which checks whether the procedure was done according to the Book of Rules.

The Board may demand that further exams be passed before the recognition and the party is timely informed about any further demands. Once the candidate passed all these exams, the Board makes the suggestion of recognition and forwards it to the Office. Furthermore, the Office sends the suggestion to the University Senate for final decision.

Recognition of Diplomas of Other Faculties from Abroad

The diploma recognition – with reference to further employment – is performed by the Ministry of Culture and Education. The procedure is done at a party's request, who is obliged to fill the relevant application forms and submit the translation and certified diploma copies, diploma supplement, and the final paper, depending on the level of studies. The final paper submission is obligatory for the second and third study cycle students.

There is no relevant information on the number of signed international agreements that acknowledge or mutually recognize diplomas, i.e. levels of education.

Students and Graduates

Enrolled students in an individual year

Data refer to full-time and part-time students according to Bologna system and to students enrolled on "old system" are presented separately.

Bologna system

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Plant production*	76	118	152
Animal production	45	68	83
Agrarian economics and rural development	54	64	80
TOTAL:	**175**	**250**	**315**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
Herbal production	-	14	30
Animal production	-	-	15
Agrarian economics and rural development	7	-	15
TOTAL:	**7**	**14**	**60**
Doctoral study programmes (3rd Bologna cycle): duration: 3 years			
** 3rd Bologna cycle	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation:

* Within the study program Plant production, we enrol the same number of students at each department: field crops and vegetable, plant protection and Fruit growing (or horticulture). Departments of Fruit growing and horticulture switch students' entrance every two or three years depending on the evaluation of the necessity for the program.

**Until academic 2010/2011 year, there have not been any doctoral studies according to the Bologna principles. At the March 2011 session of the Science and Teaching Board, we formed a working group that would devise an elaborate on the third cycle study program and there are now indications that we might enrol the students for this program in the academic 2011/2012 year (or at least in 2012/2013).

Old system

Level	2008	2009	2010
Undergraduate study programs: duration: 4 years			
Plant production	238	220	169
Animal production	148	108	70
General department	20	13	13
TOTAL:	**406**	**341**	**252**
Postgraduate study programs: duration: 2 years			
Plant production	15	11	-
Animal production	11	-	-
Agrarian economics and rural development	-	-	-
TOTAL:	**26**	**11**	**-**
Doctoral study programs: duration: 3 years			
**	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation:

Majority of the students who attended master studies in accordance with the old program still haven't finished their final theses so the number of these students will be shown in a separate table, all at the same principle as for the students of Bologna system.

According to the latest regulation adopted by the Ministry of Education of Republika Srpska, all students at all levels, who attended the old program studies, have to fulfil their obligations due to 2012/2013. Unless they do so, they will have to switch to the adequate level of the Bologna system.

Graduates in an individual year

Bologna system

Level	2008	2009	2010
Undergraduate study programs (1st Bologna cycle): duration:			
Plant production	-	4	22
Animal production	-	5	15
Agrarian economics and rural development	-	8	29
TOTAL:	**-**	**17**	**66**
Postgraduate study programs (2nd Bologna cycle): duration:			
Agrarian economics and rural development	-	-	1
TOTAL:	**-**	**-**	**1**
Doctoral study programs (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation: Part of the old system students have managed to fulfil their obligations at all levels in the period 2008-2010.

Old system

Level	2008	2009	2010
Undergraduate study programs : duration: 4 years			
Herbal production	29	32	48
Animal production	31	23	24
General department	8	5	2
TOTAL:	**68**	**60**	**64**
Postgraduate study programs : duration: 2 years			
Herbal production	-	3	2
Animal production	-	1	1
TOTAL:	**-**	**4**	**3**
Doctoral study programs : duration: 2 years			
Herbal production	2	2	3
Animal production	1	-	1
TOTAL:	**3**	**2**	**4**

International Exchange

International exchange of professors and researchers:

The Faculty of Agriculture has signed 32 agreement or contracts on cooperation with institutions from Norway, Slovenia, Croatia, Serbia, Macedonia, Romania, and Thailand. Ever since the integration process at the University level, signing contracts is no longer in the Faculty's jurisdiction but the University has taken over the responsibility. Regardless of the huge number of signed contracts, there

haven't been many concrete examples of cooperation. Over the last period, the student and teacher exchange was mostly based on master and doctoral studies. The exchange might refer to the completion of the whole studying program or at least a part of it (some researches, etc.). Most our employees still go to the neighbouring countries (Slovenia, Serbia) for the 2nd and 3rd cycle's programs and a small part of them goes to the EU countries. There is list of some researcher which contributes to the international exchange activities:

- Grbic Rada. Type: Master of Science - Vintage International Master of Science.
- Svjetlana Zeljković. Type: MSc study at the University of Novi Sad, Faculty of Agriculture. Duration: 2007-2009.
- Svjetlana Zeljković. Type: Research for PhD study at the University of Novi Sad, Faculty of Agriculture. Duration: 2009-2013.
- Markovic Dimitrije. Type: Research for PhD study at Swedish Acultural University (SLU). Duration: February to October 2009.
- Zorica Đurić. Type: Completed MSc Thesis at the University of Belgrade, Faculty of Agriculture. Duration: 2004-2010.
- Zorica Đurić. Type: The psyllid training school at AlPlanta, Neustadt, Germany, April 19-23, 2010.
- Aleksandar Kralj. Type: Master study at the University of Novi Sad, Faculty of Agriculture. Duration: 2007-2010.
- Duration: 2007-2009. The universities which take part in this program: Ecole Supérieure 'Agriculture of Angers (France), Universidade of Trás-Os-Assemble E Alto Douro-Vila Real (Portugal), University Corvinus-Bupa Campus-Budapest (Hungary).
- Branimir Njezic. Type: Erasmus Mundus master program: EUMAINE (European Master in Nematology). Duration: September 2008 - July 2010. Participating institutions: University of Ghent, Belgium - coordinator; University of Evora, Portugal; University of Bielefeld, Germany; Christian-Albrechts University, Kiel, Germany; University of Jaen, Spain; Katholieke University of Lueven, Belgium; Wageningen University, the Netherlands; Scottish Crop Research Institute (SCRI), United Kingdom.
- Duška Delić. Type: PhD study at the University of Ljubljana, Biotechnical Faculty and research at National Institute of Biology in Ljubljana, Slovenia. Duration: 2007-2010.
- Lidija Tomić. Type: PhD study at the University of Ljubljana, Biotechnical Faculty and research at National Institute of Biology in Ljubljana, Slovenia. Duration: 2009-2011.
- Biljana Lolić. Type: Research for PhD study at the University of Belgrade, Faculty of Agriculture. Duration: 2008-2011.

International exchange of students

There is a poor student exchange. During the academic 2009/2010 year, there was a short 10-day exchange of 10 students (from each party) from Faculties of Agriculture of Banjaluka and Prague. Banjaluka students went to the Czech Republic in November 2009, whereas the Czech students were in Banjaluka in April 2010. In March 2009, 3 students from Banjaluka Faculty of Agriculture spent a month at the Ljubljana Bio-technical University within the CEPUS exchange program.

During past period there has not been organized mobility of faculty's teaching staff and students to other faculties, nor arrival of staff or students from abroad. Stay of teaching staff from abroad at the Faculty was achieved by the realization of educational process.

International exchange in the future:

In future period teaching staff from Faculty will continue with the international exchange in order to complete started specializations and activities related to the certain projects.

Person responsible for international exchange:

Miljan Cvetković, Vice dean

E-mail: miljan.cvetkovic@agrofabl.org
Telephone: +387 51 330 938

UNIVERSITY OF MOSTAR, FACULTY OF AGRICULTURE AND FOOD TECHNOLOGY

Address: Biskupa Čule bb, 88000 Mostar, Bosna and Herzegovina

Telephone (central office): +387 36 337 102

E-mail (Dean's office/secretariat): stanko.ivankovic@sve-mo.ba

Website: www.apfmo.org

Key Areas of Work

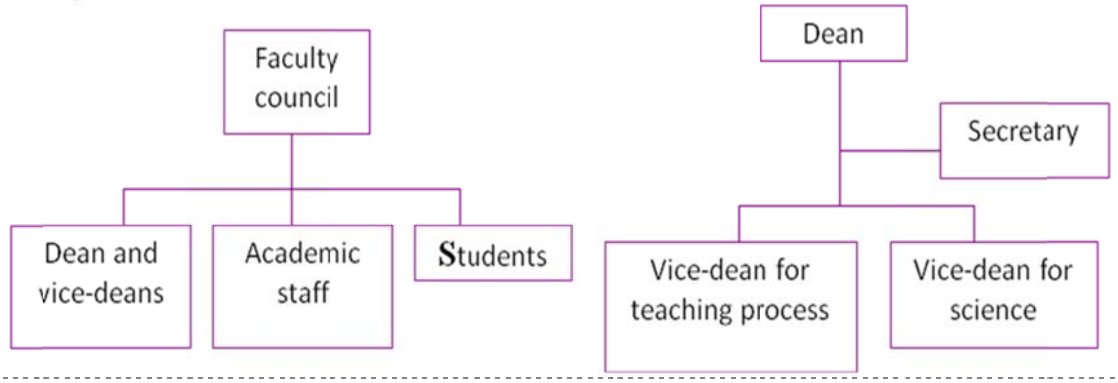
As our Faculty has general direction in agriculture we try to gather more fields then one. We give our best in plant production, plant protection, nutrition and animal husbandry. We try to identify equipment development and technology transfer needs. We have also food technology undergraduate study and we trying to cover this area as well. We have adequate laboratory equipment with devices for plant and soil analyses, we have also few device for tracing dairy production and quality measurement. In last few years we initiated laboratory for plant protection and detection different type of diseases and other agens affecting a plant life.

Organisational Structure

Faculty of Agriculture and Food Technology is one of the nine institutions at University of Mostar. Faculty was established in 1994 as Faculty of Agriculture with four year program with diploma of *graduate engineer of agriculture*. Since foundation in 1994 we continuously educate trained staff for the transfer of modern accomplishments into agricultural production, and for further scientific and research work in finding new solutions in agricultural production. In 2008 we adopted new curricula and changed Faculty name in Faculty of Agriculture and Food Technology. University started with curricula based on ECTS and cycles and further harmonization with European universities in academic year 2005/06.

A Concise Guide to the University

Faculty level



We cooperate with all other Faculties of Agriculture and Food Technologies in B & H, Faculties of Agriculture and Food Technologies in Croatia, Faculty of Agriculture and Life Sciences of the University of Maribor, Slovenia, Norwegian University of Life Science and Fachhochschule Weinstephan, Germany.

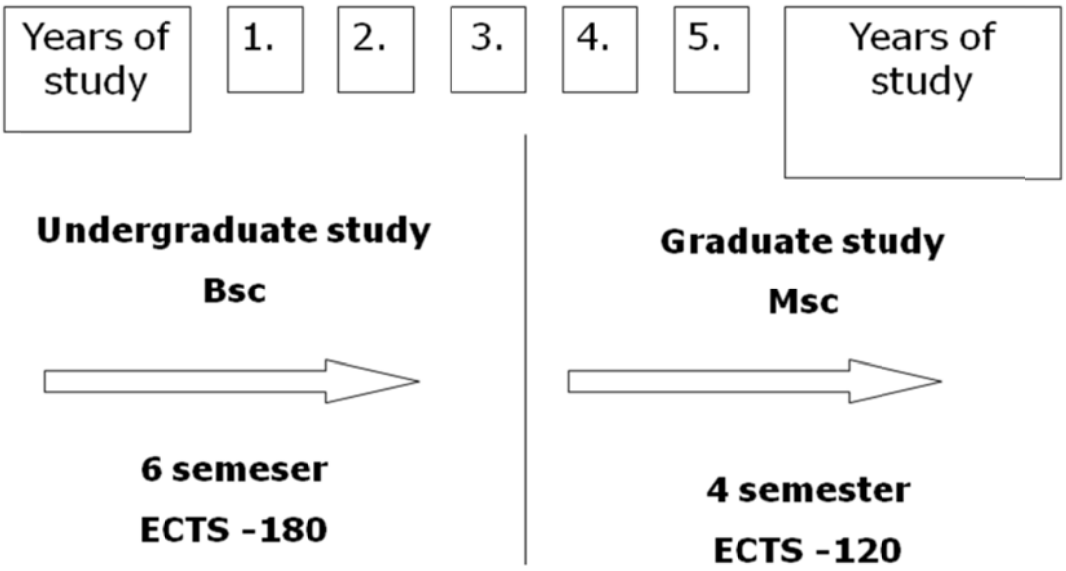
Faculty was organised by departments: Department of Phomology, Department of Plant Protection, Department of Fisheries, Zoology and Water protection, Department of Viticulture and Oenology, Department of Agro economy and Management, Department of Plant Breeding Genetics, Biometrics and Experimentation, Department of Botany, Plant Physiology and Nutrition, Department of Food Quality Control.

DEAN, PhD Stanko Ivanković, Vice deans, for science Assistant PhD Radica Ćorić and for international cooperation Assistant PhD Adrijana Filipović, Chief of administrative staff: Ivana Božić, engineers of law.

Presentation of Study Programmes

Study Programmes

We started with Bologna process in 2004 adopting the 3+2+3 structure in academic year 2005/2006: undergraduate studies (Bachelor Degree), Two-year graduate studies (Master of Science Degree), and Three-year postgraduate studies (PhD studies) which were in the stage of development. Undergraduate studies involves: general orientation, agricultural economics, plant sciences, animal sciences. Graduate studies: plant sciences, animal sciences and agro economy – "Agronomy and EU". Students' quotas are for BSc program in agriculture: 50 supported by ministry and 30 self-supported and in food technology 50 all self supported. For MSc program 30 students all self-supported.



Undergraduate study program is made according to the modular structure, where module is a thematic unit consisting of lectures-58,48%, exercises 35,20% and seminars 2,75% and practical work 3,57%. Each module has a module coordinator, and within the module besides the coordinator, there are several professors and teacher assistants who can lecture, too. All undergraduate study modules have uniform structure: lasting one semester, module comprises 60 in-class lectures and is worth 6 ECTS credits or 30 in-class lectures and is worth 3 ECTS credits. Per semester-30 credits. The final paper of some study is registered as a course in the final semester of a study.

In academic year 2007/08 we have started with new study program of food technology (undergraduate study), and adopted new name as Faculty of Agriculture and Food Technology. Same year we build new facilities for offices and classroom as well as laboratories for students and research laboratory for staff. Faculty owns field experimental station of 52 hectares in total with 14.8 hectares currently cultivated. Station is used for practical study and researches. We started with orchard of mixed fruits in 2007 and also vineyard in 2008 and 2009. Momentary we have also experimental field with medical and aromatic plants and orchard with domestic varieties of figs and other with pomegranate and some berry fruits. All plantations are under irrigation system. This experimentation station provides students adequate practical work.

International Accreditation of Study Programmes

We do not have international accreditation of study programme yet. But we have done self-evaluation.

University of Mostar was the first University in BiH which in 2003 turned to European University Association – EUA with a goal of participating in the Programme of institutional evaluation. In 2004 a special EUA evaluation team carried out the procedure of external institutional evaluation. It was a part of a wider joint project of the European Commission and Council of Europe called "Modernizing the Management and Governance Capacities of Universities in Bosnia and Herzegovina". Institutional evaluation of all seven public Universities in BiH was carried out through this project.

In 2003 the University of Mostar made the internal analysis (self-evaluation) at the University level and in accordance with guidelines of EUA programme. That internal analysis was made ad hoc and for the needs of the EUA institutional evaluation. However, since then many things have been changed at the University, especially things related to quality assurance. Although quality has always been the basis of the University work and development, institutional and systematic monitoring of quality started in 2004, and it was established also because of the recommendations of the EUA institutional evaluation team. In 2005 the Commission for quality assurance was formed at the University level, and in 2006 Quality assurance office was established and equipped. Quality assurance coordinator at the University level was also elected in that year. Therefore, the internal analysis at the University of Mostar is today used as a mean for self-cognition about the level of the education quality at the University, for the implementation of higher education reform and for getting acquainted with importance of issues which have to be discussed and volume of work that has to be done in a pretty short time period.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

Mainly we do not have such kinds of agreement yet. We have agreement for student of Food-Technology so they can unconditionally continue Master study after the finished Bachelor degree at Faculty of Food-Technology in Osijek, Croatia. We have assigned in CEEPUS program, and we hope to be involved in CEEPUS network group For Safe and Healthy Food in Middle- Europe coordinated by Professor Vladimir Mrša form Faculty of Food technology in Zagreb so we can provide a practice for students at all faculty aboard involved in Network.

Procedure of recognition of completed study responsibilities at another faculty or in another country

Each student whose seeking for recognition of study responsibilities have to contact a person for international relationship and provide evidence of learning agreement, exam transcript with ECTS score and letter of intention to be continue at that Faculty.

Recognition of Diplomas of Other Faculties from Abroad

Candidate who is seeking for recognition of Diploma from Abroad have to apply inquiry. To the administration candidate have to provide evidence of Educational plan of other Faculty, exam transcript, evidence of place of residence, diploma of finished study and payment for process of recognition. After all documents are gathered they are proceed to tree member's commission which

compares our education plan with candidate study program. If programmes are similar in 80%, diplomas are usually recognised; otherwise is rejected.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
1th year	154	144	119
2th year	71	69	111
3th year	20	89	103
TOTAL:	**245**	**302**	**333**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
1th year	17	19	14
2th year		17	25
TOTAL:	**17**	**36**	**39**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Agronomy	9	31	18
Food-technology			12
Former study program VII	29	59	11
Former study program VI	16	4	1
TOTAL:	**54**	**94**	**42**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
Plant science	-	-	11
Former MA study program	-	-	1
TOTAL:	**-**	**-**	**12**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation: Students who have graduated from former study programme are stated separately. Study program with degree VII is former quadrennial study of agriculture and these are the students who did not finished that study program before Bologna study groups have started. Former

study program with degree VI is biennial study of agriculture for students who take part-time study program.

In 2010 there was also one student who has finished M.A. degree on study "Economically sustainable agriculture".

International Exchange

International exchange of professors and researchers:

PhD students employees as assistant at Faculty of agriculture and Food technology: Magister Elma Sefo participate on training course at College of Agriculture in Križevci (Croatia) on training "Development of grafting a vegetable transplants"; Magister Predrag Ivanković Research methodology of morphology and fish nutrition, Faculty of Agriculture, Zagreb, Croatia (Department of fishery, bee keeping and special zoology); Ana Sabljo, engineer of agriculture participate as PhD student on training course at Faculty of Agriculture in Zagreb (Croatia); Jurica Primorac, engineer of agriculture participate as PhD student on training course at Faculty of Agriculture in Zagreb (Croatia); Mladen Zovko, engineer of agriculture participate as PhD student on training course at Faculty of Agriculture in Zagreb (Croatia); Paulina Šaravanja, engineer of agriculture participate as PhD student on training course at Faculty of Agriculture in Zagreb (Croatia); Matija Čurković, engineer of agriculture participate as PhD student on training course at Faculty of Agriculture in Zagreb (Croatia) and Faculty of Applied science in Norway; Adrijana Filipović, Assistant PhD participate as PhD student on training course at Faculty of Agriculture in Zagreb.

International exchange of students:

Ana Marić, MS student participating at University of Bologna, Italy seeking for PhD degree.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	-	1	-	-
Researchers	-	8	-	-
professors	-	-	-	-
TOTAL:	**-**	**9**	**-**	**-**

International exchange in the future

Lenka Malinkova PhD student of Botany at Faculty of Science in Ceske Budejovice. She's planning to come here to research a life of weeds in our region. We expect her in September 2011 until June 2012. She have research program named by "Do agricultural weeds evolve in response to crop cultivation?, under supervision, PhD. Jitka Klimesova.

Person responsible for international exchange:

Adrijana Filipović, PhD, coordinator for international relationship

E-mail: adrijanamajic@sve-mo.ba

Telephone: +387 36 667 107

UNIVERSITY OF SARAJEVO, FACULTY OF AGRICULTURE AND FOOD SCIENCES

Address: Zmaja od Bosne 8, 71000 Sarajevo, Bosnia and Herzegovina

Telephone (central office): +387 33 22 57 27

E-mail (Dean's office/secretariat): podrska@ppf.unsa.ba

Website: www.ppf.unsa.ba

Key Areas of Work

The Faculty of Agriculture and Food Sciences (FAFS), is high education institution, member of the University of Sarajevo.

The FAFS basic mission is high education in fields of agriculture and food technology. The FAFS implemented all levels of ante-Bologna high education process (graduate, postgraduate, doctoral). Since 2005/06 the FAFS has been enrolling students to 3 years undergraduate (bachelor) level and 2 years graduate (master) level study programmes organized in accordance with the principles of Bologna process. The FAFS is in the process of approval of 3 years doctoral studies designed according to the Bologna principles.

Besides high education, FAFS is a research organization in the fields of agricultural and food sciences and technologies. With more than 70 university teaching and research staff the FAFS with its personal and other capacities is the leading HE and research institution of such kind in Bosnia and Herzegovina.

Organisational Structure

Regardless the fact that University of Sarajevo is planned to be an integrated high education institution, the FAFS and other faculties at UNSA are still independent institutions with some academic questions delegated at the University level. The FAFS has its steering committee named by the Government of Canton Sarajevo. The FAFS dean's office (dean + 4 vice deans) and secretariat with accompanying services fulfil the operational management tasks.

The Faculty of Agriculture and Food Sciences, University of Sarajevo (FAFS_UNSA) has two organizational lines: educational, and research and services.

Educational structures are organized through 4 departments, namely:

- Plant production,
- Animal production (Zoo techniques)
- Economics of Agriculture and Food Industry
- Food Technology.

Each of the departments has its chief. Departments are in charge of educational process at all three levels.

Eight FAFS-UNSA institutes are in charge of research and service affairs. All institutes' personnel are also involved in the educational process at the faculty. The institutes and their personnel are as follows:

- Institute for crop production (2 professor, 3 assist. professors, 2 assistants, 1 technician)
- Institute for fruit growing and viticulture (2 professors, 1 assoc. professor, 3 assist. professors, 2 assistants, 1 technician)
- Institute for soil science, meliorations, and agro-chemistry (2 professors, 4 assist. professors, 3 assistants, 2 technicians)
- Institute for agricultural mechanization (1 assoc. professor, 1 assistant),
- Institute for zoo-techniques (1 professor, 3 assist. professors, 4 assistants, 2 technicians)

- Institute for food technology (2 professors, 3 assoc. professors, 4 assist. professors, 9 assistants, 2 technicians)
- Institute for economics of agriculture and food industry (2 professors, 1 assoc. professor, 2 assist. professors, 4 assistants, 1 technician), and
- Institute for plant protection (1 assoc. professor, 2 assist. professors, 2 assistants, 1 technician).

Presentation of Study Programmes

Study Programmes

Undergraduate study programmes. All undergraduate study programmes at the FAFS are three years lasting. They are organized at the FAFS's departments. Except some professors engaged from other faculties of the University of Sarajevo (Natural Sciences, Mechanics, etc.), the undergraduate study programmes are organized independently. The study programmes are planned as academic-research study programmes. However, their structure and practical realization make them closer to professional undergraduate study programmes.

Since 2005/06 academic year and introduction of study programmes organized according to Bologna principles, the following **undergraduate study programmes** are active at the FAFS:

- Department: Plant production (SP: Crop and vegetables production and SP: Fruit growing and viticulture)
- Department: Zoo-techniques (SP: Animal production and SP: Aquaculture)
- Department: Economics of agriculture and food industry (SP: Economics of agro-industry)
- Department: Food technology (SP: Food technology)

Graduate (master) study programmes. Graduate (master) study programmes organized in accordance with the Bologna process recommendations are organized since 2007/08 academic year. The FAFS designed and had approved 14 master study programmes. However, 11 of them were active (have enrolled students) so far. The first graduated masters were promoted in 2010. The programme are designed and mostly realized as academic/research programmes.

- Department: Plant production (SP: Crop production, SP: Vegetables production, SP: Fruit growing, SP: Viticulture and wine technology, SP: Sustainable management of soils and rural areas, SP: Floriculture and landscape design and SP: Plant protection)
- Department: Zoo-techniques (SP: Animal production, SP: Aquaculture (FAFS + Faculty of Natural Sciences, University of Sarajevo) and SP: Feed and animal nutrition)
- Department: Economics of agriculture and food industry (SP: Economics of agro-industry)
- Department: Food technology (SP: Food technology, SP: Food Analysis (FAFS + The KF University of Graz) and SP: Food quality control)

Doctoral study programmes. The FAFS designed and received the University's approval to start with doctoral study programmes organized in accordance with the Bologna process principles. The study programmes are: Agricultural sciences and Food Technology. Both are planned as three years programmes, with possibilities to increase the research period if objective conditions dictate that. The basic idea of the doctoral study programmes are integrated study and research, which means that doctoral candidates could be enrolled only if they could be at the same time engaged at on-going research project(s).

International Accreditation of Study Programmes

There is not yet any international accreditation of the FAFS's study programmes.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

The study system basically enables the students to choose a subject at another faculty. Unfortunately, there are not yet signed agreements on this matter with other faculties.

Procedure of recognition of completed study responsibilities at another faculty or in another country

The procedure is not yet established.

Recognition of Diplomas of Other Faculties from Abroad

Recognition of diplomas of other faculties from abroad is a question regulated by relevant law of high education. In canton Sarajevo recognition of diplomas is going through University (recognition of the foreign HE institution, and educational level for employment purposes) or Faculties (recognition of educational level necessary for further studying). Both procedures last 45 – 60 days.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Plant production – Crop and vegetables production	25	26	26
Plant production – Fruit growing and viticulture	25	28	26
Zoo-techniques – Animal production	20	19	30
Zoo-techniques – Aquaculture	15	19	19
Food technology	47	49	47
Economics of agro-industry	41	41	47
TOTAL:	**173**	**182**	**195**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
Fruit growing	8	4	14
Crop production	-	5	3
Vegetables production	-	-	6
Sustainable management of soils and rural areas	-	-	7
Floriculture and landscape design	4	5	7
Plant protection	-	6	18
Feed and animal nutrition	-	7	2
Economics of agro-industry	12	15	28
Food Analysis	-	8	-
Food Technology	-	14	17
Food quality control	22	11	48
TOTAL:	**46**	**75**	**150**
Doctoral study programmes (3rd Bologna cycle): duration: 3 years			
	-	-	-
TOTAL:	**-**	**-**	**-**

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Plant production – Crop and vegetables production	-	-	5
Plant production – Fruit growing and viticulture	15	12	21
Zoo-techniques – Animal production	3	10	9
Zoo-techniques – Aquaculture	-	-	-
Food technology – Food technology	31	27	34
Economics of agriculture and food industry – Economics of agro-industry	7	22	19
TOTAL:	**56**	**71**	**88**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
Fruit growing	-	-	5
Crop production	-	-	-
Vegetables production	-	-	-
Sustainable management of soils and rural areas	-	-	-
Floriculture and landscape design	-	-	4
Plant protection	-	-	-
Feed and animal nutrition	-	-	-
Economics of agro-industry	-	-	4
Food analysis	-	-	-
Food technology	-	-	-
Food quality control	-	-	16
TOTAL:	**-**	**-**	**29**
Doctoral study programmes (3rd Bologna cycle): duration: 3 years			
	-	-	-
TOTAL:	**-**	**-**	**-**

International Exchange

International exchange of professors and researchers:

International exchange of professors and researchers due to limited budgets are modest for now.

A group of professors from KF University of Graz, Austria are regular lecturers on the master study programme Food Analysis. Besides that, individual visits of professors from Norwegian University of Life Sciences (UMB), Ås departments, are organized, mostly as activities under on-going cooperative research projects.

Some of the research and teaching staff of the FAFS completed their master and Ph.D. researchers at the universities in Hohenheim (Germany), Graz (Austria), Norwegian University of Life Sciences (Norway), Zagreb (Croatia), Belgrade (Serbia), Kiel (Germany), ETH Zurich, etc.

International exchange of students

Except some short study visits (Germany, Turkey, Croatia, Serbia), there were not yet organized international exchanges of students.

Person responsible for international exchange:

Prof. Hamid Čustović, Ph.D., V. Dean for International Cooperation

E-mail: h.custovic@ppf.unsa.ba; custovic.hamid@gmail.com

Telephone: +387 33 22 57 27

CROATIA

Country's Education System[3]

The Educational system in the Republic of Croatia consists of the following: Preschool education, Elementary education, Secondary education and Higher education.

Preschool education in the Republic of Croatia encompasses education and care of the children of preschool age, realized though educational, health care, nourishment and social care programs for children from six months of age until school age. Eight-year elementary education in the Republic of Croatia is compulsory and free for all children between the ages of six and fifteen. Following elementary education, secondary education enables everyone, under equal terms and according to one's capabilities, to acquire knowledge and skills required for work or continuation of education.

Pursuant to the Act on Primary and Secondary Education (Official Gazette, 87/08), secondary education of pupils within grammar school educational programmes completes upon passing the state graduation exam. Secondary education of pupils within vocational and art educational programmes, lasting for at least four years, finishes upon the final paper creation and defence, organized and conducted by the school. Pupils of four-year vocational and art high schools may also take the state graduation exams if they wish so. The provisions on taking the state graduation exam refer to the pupils who enrolled in the first grade of grammar school or four-year vocational and art school in the school year of 2006/2007. The state graduation exam is a set of exams in certain subjects that the pupil was taught during his/her four-year secondary education. The goal of the state graduation exam is to test and assess pupils' acquired knowledge and aptitude, obtained through education in accordance with the prescribed general education curricula. Mandatory exams taken within the state graduation exam are those in general education subjects that the pupil was taught during high school, and those are the Croatian language, mathematics and a foreign language. Exceptions to the rule are rare: pupils attending classes in a language and script of national minorities are obliged, in addition to the Croatian language exam, to take exam in the national minority language in which they are educated, while as the third exam they choose either mathematics exam or a foreign language exam. Only those pupils receiving education in the language and the script of the Czech national minority may choose - either to take the mandatory part of the state graduation exam without taking exam in their mother tongue (Czech), in which they are educated, or, in addition to the obligatory part, take exam in their mother tongue. The second part of the state graduation exam is an optional part comprising all other subjects that the pupil was taught in school. Pupils will take exams in an optional subject or more optional subjects only if they are stated as a prerequisite for the enrolment into polytechnic or university studies. Pupils will get a separate confirmation on the passed exams in optional subject(s). Without the passed state graduation exam, it will be considered that such a grammar school pupil has not completed secondary education. The difference compared to the past graduation system is that exams are neither conducted nor assessed by the school teachers, but by the public institution - National Centre for External Evaluation of Education. The National Centre for External Evaluation of Education creates exam catalogues for all subjects taken within the state graduation exam, working materials and handbooks for the preparation of exams, and prepares and delivers exam materials to schools. The Centre also keeps the Central Register of State Graduation Exams in an electronic form, into which data on all persons that have taken the state graduation exam, data on the subjects and grades and percentage points obtained in state graduation exams will be stored. The Centre will also be issuing

[3] Source: http://www.public.mzos.hr/

diplomas and certificates on the passed state graduation exams. Not only does the introduction of the state graduation exam ensure higher objectivity of pupils' school achievements on the national level, but it at the same time encourages teachers to teach better in elementary and high schools, and pupils to study harder, and generally increases the quality of school education. As of the school year of 2009/2010, the state graduation exam will be taken by all pupils who successfully complete the fourth grade of high school. The state graduation exams will be conducted at the same time, with the same exam materials and in the same way for all pupils in the Republic of Croatia. This will produce the results that are mutually comparable, making the selection procedure when enrolling into polytechnics and universities more just and transparent. A diploma on the passed state graduation exam will serve as an objective indicator of a pupil's preparedness.

Enrolment into a study at the University shall be carried out based on a public competition announced by a university, polytechnic or school of professional higher education that implement it, at least six months prior to the commencement of instruction. The competition must include: enrolment criteria, enrolment quota, procedure, data on required documents and closing dates for the competition and enrolment. A university, polytechnic or school of professional higher education shall determine a procedure for selecting candidates in a manner that guarantees equality of all candidates regardless of their race, gender, language, religion, political or other believes, national or social origin, assets, birth, social status, disability, sexual orientation and age. A university, polytechnic or school of professional higher education shall determine criteria (achievements from previous education, type of completed education, results of an entrance or other exam, special knowledge, skills or abilities etc.) These shall be a base for classification and selection of candidates. From the moment the Republic of Croatia becomes a full member of the European Union, students who are citizens of the EU member states shall have the same rights pursuant to the Scientific Activity and Higher Education Act and shall enrol in studies under same conditions as Croatian citizens. The enrolment quota for foreign citizens can be limited or reduced when it comes to military or police education or other studies of interest for national security.

Undergraduate and professional study: A university, polytechnic or school of professional higher education shall determine types of secondary education that are appropriate for entrance into a certain undergraduate or professional study. Exceptionally, under conditions stipulated by a higher education institution, a study may be enrolled by an individual without relevant education, in cases of highly gifted individuals when there are reasons to expect that they will complete their study successfully with no previous education.

Graduate study: A graduate study may be enrolled by an individual who has completed a relevant undergraduate study. A university shall determine undergraduate studies relevant for the enrolment into each graduate study as well as conditions for enrolment of candidates who have completed another undergraduate study or a graduate university study. Individuals with completed professional study may enrol into a graduate study if this is stipulated by enactments of the university implementing that study. Enrolment may be conditioned by taking differential exams.

Postgraduate study: Postgraduate study may be enrolled by an individual who has completed a relevant graduate study. A university may stipulate other conditions for enrolment into the postgraduate study.

College and Higher Education Organisations in the Field of Agriculture in the Country

In Croatia there are several Colleges, Higher Education organisations and units in the field of Agriculture. They are sorted by alphabetical order:

- Center of Marine Studies, University of Split (Sveučilišni studijski centar za studije mora),
- College of agriculture at Križevci (Visoko gospodarsko učilište u Križevcima)
- Department for Aquaculture, University of Dubrovnik (Odjel za akvakulturu (Dubrovnik)
- Faculty of Agriculture, University of Josip Jurij Strossmayer in Osijek.
- Faculty of Agriculture, University of Zagreb and
- Karlovac University of Applied Sciences (Veleučilište u Karlovcu (Karlovac)
- Polytechnic “Marko Marulić” Knin (Veleučilište "Marko Marulić" u Kninu),

- Polytechnic in Požega (Veleučilište u Požegi)
- Polytechnic in Rijeka (Veleučilište u Rijeci (Rijeka)
- Polytechnic in Slavonski Brod (Veleučilište u Slavonskom Brodu)

UNIVERSITY OF JOSIP JURJ STROSSMAYER IN OSIJEK, FACULTY OF AGRICULTURE

Address: Trg Sv. Trojstva 3, 31 000 Osijek, Croatia

Telephone (central office): +385 31 224 200

E-mail (Dean's office/secretariat): dekanat@pfos.hr; vladog@pfos.hr;

Website: www.pfos.hr

Key Areas of Work

PFOS has 219 employees, 88 of them with PhD degree. From that number PFOS has 50 full time professors, 16 associated professors and 18 assistant professors. PFOS also has 48 young researchers. PFOS has 11 departments that in their work cover all fields of agriculture, from soil, plant and animal production to agricultural economics. There are three major activities in PFOS work: education, research and knowledge transfer.

In education PFOS mission is to provide excellent learning environment and transfer up to date knowledge and skills to students and enable them to become leading agricultural experts. At PFOS students can enrol in undergraduate, graduate and postgraduate (doctoral) studies organised according to Bologna declaration and in structure synchronised with leading universities in EU. Until today at PFOS:

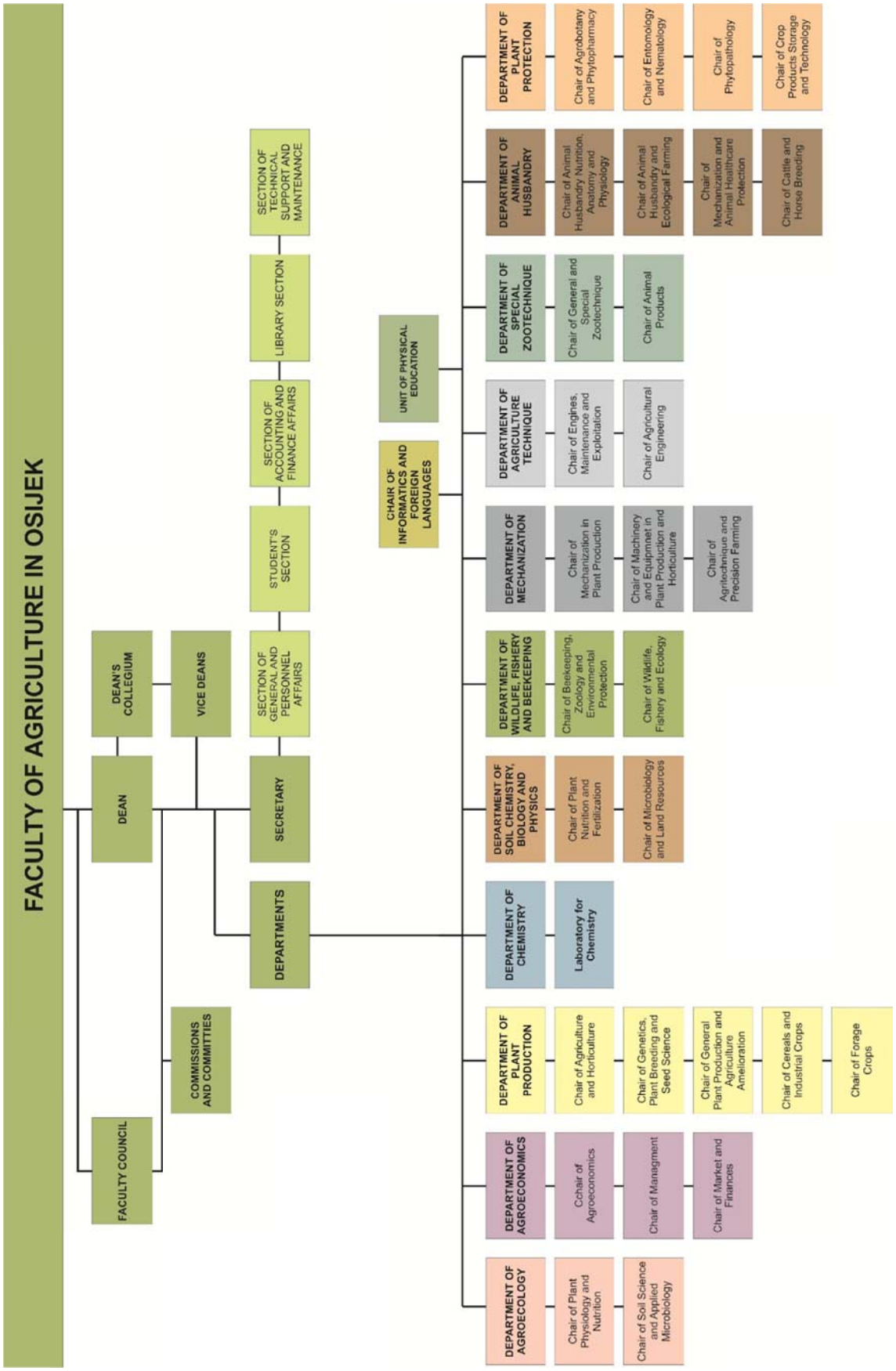
- graduated 4614 students,
- 181 students defended master thesis
- 114 students defended PhD thesis.

In year 2009/2010 total number of students was 1274, 296 of them were freshmen.

In research PFOS mission is development and systematic improvement of dynamic and multidisciplinary research environment in which research potentials will be exploited in maximum and creation of new and improvement of existing knowledge is a constant and it contributes to the development of society on the whole. Research activity at PFOS has long tradition, it is equally important as teaching and it is conducted through scientific, national and international, projects financed from different sources. List of projects that illustrates research activity at PFOS can be seen in Annex 5. Today, PFOS has the highest number of research projects and leading role in research at the University. Right now at PFOS there are 19 international projects, 44 projects financed by Ministry of science, education and sport and 15 projects financed by the Ministry of agriculture, fishery and rural development.

In knowledge transfer PFOS mission is to ensure constant flow of research results to agricultural practice and industry and by that serving to the community and helping it to become economically strong for the benefit of its people. Collaboration with the industry and local community in solving specific problems in agricultural practice is a tradition at PFOS. Right now at PFOS there are 15 projects financed by the local community (Counties from NUTS II region) and 30 projects with the agro-industry in the region.

Organisational Structure



Presentation of Study Programmes

Study Programmes

3+2+3 structure modular structure; 10 modules per year; uniform structure of the modules (75 hours, 6 ECTS).

Undergraduate studies (BSc) - first year is the same for all students, in a second year students have 10 modules connected to the course they chose. On a third year they have 4 compulsory modules, 4 elective modules, practical work and final thesis. Courses are:

- Agricultural economics
- Animal husbandry
- Agricultural machinery
- Plant production
- Horticulture

Master studies (MSc) - first year consist of 10 compulsory modules; on second year students have 5 elective modules; 4th semester is for preparation of diploma thesis.

- Agricultural Economics
- Agricultural Machinery
- Animal Husbandry (Animal Feed, Production and Breeding of Domestic Animals and - Hunting and Beekeeping)
- Organic Agriculture
- Plant Production (Plant Production, Plant Breeding and Seed Production, Plant Nutrition and Soil Science and Plant Protection)
- Pomology, Viticulture and Wine Production (Pomology, Viticulture and Wine Production, Vegetable and Flower Production)

Doctoral Study "Agricultural sciences" (PhD) have 8 courses:

- Agricultural economics
- Agrochemistry – soil and plant
- Animal nutrition
- Hunting and kinology
- Plant breeding and seed production
- Animal husbandry
- Plant protection
- Agricultural machinery

International Accreditation of Study Programmes

There is no any such program.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

Students can choose elective modules from Faculty list or they can choose them at other Faculties from abroad. We did not define from which countries they can and from which they can't.

Right now we have Erasmus agreements with 6 universities from Spain, Slovenia, Hungary, Italy and Czech Republic (students and Faculty must sign Erasmus agreement before they go).

Procedure of recognition of completed study responsibilities at another faculty or in another country

In the process of preparation.

Recognition of Diplomas of Other Faculties from Abroad

Recognition of diplomas from abroad are not in a Faculty jurisdiction. Recognition of diplomas are through Croatian ENIC/NARIC Office - information centre for academic mobility and recognition of foreign higher education qualifications. Office is a part of European Network of National Information Centres on recognition and mobility.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Agricultural economics	206	210	188
Animal husbandry	121	118	109
Agricultural machinery	82	79	88
Plant production	166	175	155
Horticulture	-	50	88
TOTAL:	**575**	**632**	**628**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
Agricultural Economics	-	37	82
Agricultural Machinery	-	5	7
Animal Husbandry	-	34	83
Organic Agriculture	-	6	14
Plant Production	-	41	73
Pomology, Viticulture and Wine Production	-	-	9
Vegetable and Flower Production	-	-	6
TOTAL:	**-**	**123**	**274**
Doctoral study programmes (3rd Bologna cycle): duration: 3 years			
	55	73	95
TOTAL:	**55**	**73**	**95**

Additional explanation: Undergraduate study Horticulture started in 2008/2009 academic year, Master studies (2ndBologna cycle) started in 2008/2009 academic year; Master study Pomology, Viticulture and Wine Production and master study Vegetable and Flower Production started in 2009/2010 academic year.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
Agricultural economics	-	25	30
Animal husbandry	-	13	6
Agricultural machinery	-	0	6
Plant production	-	12	36
Horticulture	-	-	-
TOTAL:	**-**	**50**	**78**
Postgraduate study programmes (2nd Bologna cycle): duration: 2years			
Agricultural Economics	-	-	10
Agricultural Machinery	-	-	5
Animal Husbandry	-	-	6
Organic Agriculture	-	-	2
Plant Production		-	7
TOTAL:	**-**	**-**	**30**
Doctoral study programmes (3rd Bologna cycle): duration: 3 years			
	-	7	13
TOTAL:	**-**	**7**	**13**

Additional explanation: Bologna process started with undergraduate studies in 2005/2006 academic year, Master studies started in 2008/2009 academic year and Doctoral study started in 2006/2007 academic year.

International Exchange

International exchange of professors and researchers:

At the very beginning. More intense is outgoing mobility financed through programs of Croatian Science Foundation or through scientific and bilateral projects.

International exchange of students:

Through IAESTE, Erasmus and CEEPUS- outgoing mobility mostly.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	-	10	2	2
Researchers	3	6	3	-
professors	6	3	8	5
…				
TOTAL:	**9**	**19**	**13**	**7**

International exchange in the future

In a next two years for students and for professors international exchange will be through Erasmus program since from 2011/2012 Croatia can have both way exchange.

Plans for rising and intensifying international exchange are in preparation.

Person responsible for international exchange:

Sonja Maric, vice-dean

E-mail: smaric@pfos.hr

Telephone: +385 31 224 278

UNIVERSITY OF ZAGREB, FACULTY OF AGRICULTURE

Address: Svetošimunska cesta 25, 10000 Zagreb, Croatia

Telephone (central office): +385 1 239 3777

E-mail (Dean's office/secretariat): dekanat@agr.hr

Website: http://www.agr.hr

Key Areas of Work

The Faculty of Agriculture (FAZ) was established in 1919 and is the leading higher education and science institution in the field of agriculture and related sciences in the Republic of Croatia. During the past 90 years, more than 12,000 students have graduated and completed their postgraduate and doctoral studies.

The University studies at the FAZ are organized in three educational cycles: Undergraduate studies, Graduate studies, and the Postgraduate studies. FAZ is organizing nine undergraduate and thirteen graduate study programs, two postgraduate doctoral studies and three postgraduate specialist courses.

Besides their work at FAZ, some members of the FAZ staff teach at other faculties and universities and higher education institutions in Croatia and abroad.

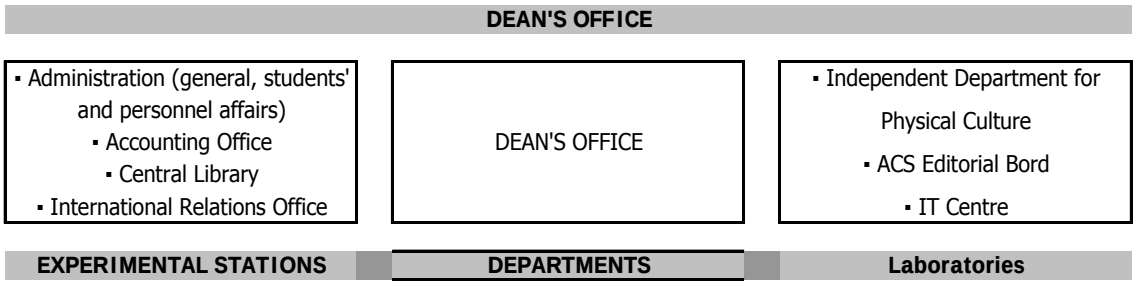
In addition to teaching, the scientific research is a fundamental activity taken in pursuit of our mission - improvement in the Croatian agricultural sector. The University of Zagreb Faculty of Agriculture holds a leading position in the Croatian agricultural science by the number of scientists, scientific projects and publications.

The scientific research activities are carried out by the Faculty departments, at their laboratories and experiment stations, as well as in sites off the Faculty compound boundaries used for this purpose. The scientific research is frequently done in collaboration with other scientists and institutions both in Croatia and abroad. During the recent years, the Faculty has had permanent increase in scientific production, primarily in number of projects awarded, papers published in prestigious scientific journals, and in organization and active participation in scientific conferences and congresses.

The FAZ is continuously trying to acquire, develop and transfer knowledge in order to educate our students, scientists and experts. This enables us to enhance the production of food, industry, management of natural resources, and the development of the rural and urban environment, as our contribution to the total quality of living in the national and global framework.

Organisational Structure

The FAZ organization consists on administration and departments.



The FAZ Administration consist of corporate services, including the Dean's Office, corporate, legal, human resources, and students' admission service, maintenance and security, safety-at -work, accounting, Central Agricultural Library (CAL), International Relations Office (IRO), Agricultural Scientific Review (ACS), web site Editorial Board, system engineer, and Physical and Health Culture Section.

The FAZ organization is based on 28 departments. The departments are responsible for cost-efficient use of the material, financial and other resources put at their disposal, for proposing of measures for improvement of material, financial and human resources, and performing teaching, scientific research, and professional work. A department is managed by department head appointed by FC upon proposal of the department at the beginning of an academic year.

Within departments there are 28 laboratories and 6 experimental stations intended for teaching, and scientific and technical activities.

List of Departments:

- Department of Agricultural Botany
- Department of Agricultural Economics and Rural Sociology
- Department of Agricultural Engineering
- Department of Agricultural Technology, Storage and Transport
- Department of Agricultural Zoology
- Department of Animal Nutrition
- Department of Animal Science I
- Department of Animal Science II
- Department of Chemistry
- Department of Dairy Science
- Department of Farm Management
- Department of Field Crops, Forage and Grassland
- Department of Fisheries, Apiculture and Special Zoology
- Department of General Agronomy
- Department of Herbology
- Department of Information Science and Mathematics
- Department of Marketing in Agriculture
- Department of Microbiology
- Department of Ornamental Plants, Landscape Architecture and Garden Art
- Department of Plant Breeding Genetics and Biometrics
- Department of Plant Nutrition
- Department of Plant Pathology
- Department of Pomology
- Department of Seed Science and Technology
- Department of Soil Amelioration
- Department of Soil Science

- Department of Vegetable Crops
- Department of Viticulture and Enology

List of experiment stations:

- Maksimir - 25 Svetošimunska St., Zagreb (in the FAZ neighbourhood),
- Jazbina (142), Zagreb (a couple of kilometres from the FAZ campus),
- Sljeme Center for Grasses at Mt. Medvednica,
- Historical Gardens and Landscape Development Center, Dubrovnik,
- Josip Ban Jelačić, Prolom state-owned hunting grounds III/29, Buzeta (some ten kilometres from the City of Glina),
- Šašinovečki Lug, Šašinovec near Sesvete, in the process of setting up (located some 15 km from the FAZ campus).

The FAZ has also started setting up a Bioengineering Research Center (ABIC) at 104 Ferenčica, Zagreb. An Agriculture and Food Institute is also in founding stage, and its establishment has been initiated by the FAZ and the former Tobacco Institute, Zagreb.

Presentation of Study Programmes

Study Programmes

The University studies at the FAZ are organized in three educational cycles: Undergraduate studies, Graduate studies, and the Postgraduate studies according to Bologna principles. Faculty provides 28 study programmes of which: 10 undergraduate (since 2005/2006), 13 graduate (since 2008/2009) and 5 postgraduate study programmes (since 2005/2006).

Undergraduate studies programmes (first cycle):

The Undergraduate University studies can be taken after the successful entry exam. Study is organised in 6 semesters with total 180 ECTS.

Study programmes:

- Agricultural Economics,
- Agricultural Engineering,
- Agroecology,
- Animal Sciences,
- Horticulture,
- Landscape Architecture,
- Organic Agriculture,
- Plant Protection,
- Plant Sciences,
- Mediterranean Agriculture*

* Study program carried out in the City of Split, through collaboration of the University of Zagreb Faculty of Agriculture, University of Split and Institute for Adriatic Crops and Karst Reclamation.

Graduate studies (second cycle):

Second cycle studies is organised in 4 semesters with total 120 ECTS.

Study programmes:

- Agribusiness and Rural Development,
- Agroecology,
- Plant Sciences,
- Organic Agriculture with Agrotourism,
- Phytomedicine,
- Animal Genetics and Breeding,
- Horticulture,
- Animal Nutrition and Feed Science,

- Landscape Architecture,
- Agricultural Engineering,
- Production and Processing of Meat,
- Production and Processing of Milk,
- Fisheries and Game Management.

Postgraduate studies (third cycle):

Doctoral studies is organised in 6 semesters with total 180 ECTS. FAZ provide two study programmes:

- Agricultural Sciences,
- Agricultural Economics.

Specialist studies program Fisheries is organised in two semesters with total 60 ECTS.

Modules taught in English:

In academic year 2010/2011 FAZ is offering 11 modules in English language mostly on second cycle level (Ms). Modules are: Post Harvest Technology, Forage Conservation, Global Ecology, Limnology and Oceanology, Ichthyology, Microbial Ecology, Beneficial Associations of Plants and Microorganisms, Energetic Utilization of Biomass and Biofuel in Agriculture, Investments and Investment Projects in Agribusiness, Design of Experiments and Wildlife Forages.

International Accreditation of Study Programmes

Currently, FAZ is in the process of organizing an EAALS (The European Accreditation Agency for the Life Sciences) workshop and plans to prepare some of the Master study program for quality assurance and accreditation process of EAALS.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

In 2010 (except with University in Vienna; 2009) several bilateral agreements on University and faculty level has been signed.

Bilateral agreement on University level: Technische Universität München, Germany, L'Universita degli Studi di Modena e Reggio Emilia, Italia, University of Tokyo, Japan, Technische Universität Wien, Austria

Bilateral agreements on faculty level: Institute for Food Technology in Novi Sad, Serbia, Faculty of Agricultural and Environmental Sciences, Szent István University Gödöllő, Hungary, Faculty of Agriculture and Food Sciences, University of Sarajevo, Bosnia and Herzegovina and College of Agriculture, Montana State University, USA.

Recognition of Diplomas of Other Faculties from Abroad

Recognition of diplomas from abroad is not in a Faculty jurisdiction. Recognition of diplomas is through Croatian ENIC/NARIC Office - information centre for academic mobility and recognition of foreign higher education qualifications. Office is a part of European Network of National Information Centres on recognition and mobility.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 6 semester			
1st Bologna cycle (prediplomski)	1096	1205	1274
Former study program (dodiplomski)	350	341	318
TOTAL:	**1446**	**1546**	**1592**
Postgraduate study programmes (2nd Bologna cycle): duration: 4 semester			
2nd Bologna cycle (diplomski)	190	379	457
Master study program – scientific	29	11	4
TOTAL:	**219**	**390**	**461**
Doctoral study programmes (3rd Bologna cycle): duration: 6 semester			
Specialist studies	3	4	3
Doctoral studies	47	32	54
TOTAL:	**50**	**36**	**57**

Additional explanation: 1st Bologna cycle study programme started in 2005/2006 academic year, postgraduate study programmes (2nd Bologna cycle) started in 2008/2009 and Doctoral study programmes in 2005/2006.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 6 semester			
1st Bologna cycle (prediplomski)	155	154	160
Former study program (dodiplomski)	225	168	149
TOTAL:	**380**	**322**	**309**
Postgraduate study programmes (2nd Bologna cycle): duration: 4 semester			
2nd Bologna cycle (diplomski)	0	0	89
Master study program – scientific	10	9	4
TOTAL:	**10**	**9**	**93**
Doctoral study programmes (3rd Bologna cycle): duration: 6 semester			
Specialist studies	0	0	1
Doctoral studies	0	4	4
TOTAL:	**0**	**4**	**5**

Additional explanation: Bologna cycle study programme started in 2005/2006 academic year.

International Exchange

International exchange of professors and researchers:

International cooperation is one of the FAZ strategic goals implemented by the International Relations Office (IRO) and the International Relations Board. Their primary task is to strengthen international exchange of the FAZ students and employees by:

- keeping the students informed about the international cooperation programs and scholarships;
- establishing international contacts and identifying institutions and projects for scientific and professional improvement of the staff;
- administrative support for application and management of international projects;
- facilitating internal competition for allocation of funds supporting international cooperation of FAZ for local and foreign students, researchers and lecturers;
- publishing information on the FAZ human resources and experimental capacities in English.

List of FAZ bilateral agreements: http://www.agr.hr/cro/ustrojstvo/umo/partneri/index.htm.

List of bilateral agreements of the University of Zagreb:

http://international.unizg.hr/medjunarodna_suradnja/bilateralni_sporazumi

Due to the fact that FAZ has established good cooperation with faculties in EU and other countries in the world what reflects in increasing number international exchange; both outgoing and incoming mobility.

Mobility is financed through ERASMUS, CEEPUS and Erasmus Mundus programs, Croatian Science Foundation, scientific, educational and bilateral projects and FAZ and University Fond for International Cooperation. FAZ is a partner in 4 CEEPUS networks - Agriculture and Environment in the 21st Century; For the Safe and Healthy Food in Middle-Europe; Applied Economics and Management; Rural tourism programs network. Since academic year 2009/2010 Erasmus (Extended) Charter was approved to University of Zagreb by the Agency for mobility and EU programmes but only for outgoing mobility. Since November 2010 Croatia became full member of the LLP and FAZ has signed Erasmus bilateral agreements with following universities:

- University of Natural Resources and Applied Life Sciences, Vienna, BOKU
- Katholieke Universiteit Leuven
- Czech University of Life Sciences Prague, CULS
- Mendel University of Agriculture and Forestry in Brno
- University of Eastern Finland
- International Center for Higher Education in Agricultural Sciences, SupAgro Montpellier
- Institut Polytechnique LaSalle Beauvais
- Agrocampus Ouest, Rennes
- Technological Education Institute Crete - T.E.I.
- University of Camerino
- University of Padova
- University of Bologna
- University of Naples Federico II
- Lithuanian University of Agriculture
- Kaposvár University
- Szent Istvan University GödöllY
- University of Debrecen
- University of Pannonia
- Hohenheim University
- Warszaw University of Life Sciences
- Wroclaw University of Environmental and Life Sciences
- Banat University of Agricultural Sciences and Veterinary Medicine Timisoara
- University of Ljubljana
- University of Maribor
- Slovak University of Agriculture in Nitra
- University of Lleida
- Universidad Politécnica de Madrid
- Swedish University of Agricultural Sciences, SLU
- Scottish Agricultural College, SAC

FAZ is binding collaboration within the membership of European and regional universities networks such as ICA, CASEE and B.EN.A.

International exchange of students

Students and staff members are equally entitled to apply to all exchange programs. See chapter: International exchange of professors and researchers.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	3	4	4	4
Researchers	5	1	3	4
professors	2	1	2	8
TOTAL:	**10**	**6**	**9**	**16**

Note: Referring to the exchange of students and researchers staying abroad / visiting FAZ for more than 1 month and professors staying abroad / visiting FAZ for more than 2 weeks.

International exchange in the future

Students:

- Internationalisation of FAZ's Programs
- Creation of new study programs in English language (Currently, FAZ is in the process of establishing new graduate study program completely taught in English language)
- Recruitment of International Students
- Professionalization of Support and Services

Staff members:

- Participation in Strategic Networks
- Increased number of Student, PhD and Teacher Mobility
- Quality Assurance, Evaluation and Accreditation
- Professionalization of Support and Services
- Increased the number of international projects

Person responsible for international exchange:

Ivona Filipović, M.Sc., IR Officer and Ivana Prosinečki, M.Sc., IR Officer

E-mail: umo@agr.hr

Telephone: +385 1 239 3611; +385 1 239 4043

KOSOVO
UNDER UNSCR 1244/99

College and Higher Education Organisations in the Field of Agriculture in the Country

Faculty of Agriculture and Veterinary studies is the only institution of higher education in the field of agriculture in the country.

UNIVERSITY OF PRISHTINA, FACULTY OF AGRICULTURE AND VETERINARY STUDIES

Address: Str. Bill Clinton N.N., 10000 Prishtina, Republic of Kosovo

Telephone (central office): +381 038 603 846

E-mail (Dean's office/secretariat): fbv@uni-pr.edu

Website: www.Uni-pr.edu

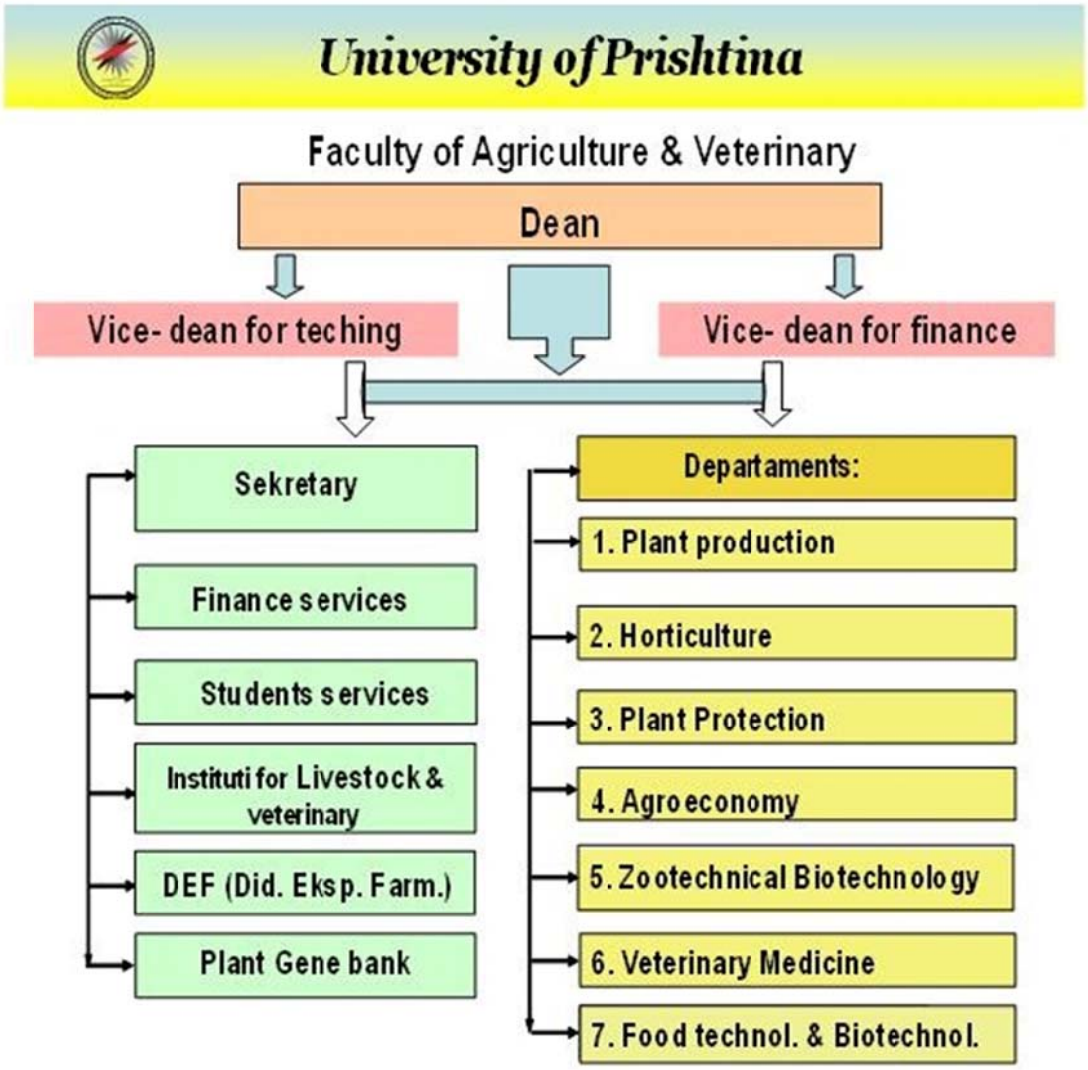
Key Areas of Work

Agriculture and Veterinary are important fields within the current trends for the development of the crop production, animal production, for the policies of trade and marketing and for the protection of animal health and public veterinary health in general. The main mission of the Faculty of Agriculture and Veterinary stands in the transmission of knowledge and competencies to the future experts in the following fields:

- Raw plant and animal material production, food safety
- Processing of raw plant and animal material
- Protection of best practices in the crop production, environmental protection
- Financing strategies and marketing of plant and animal products
- Protection of good practices in animal breeding, their health maintenance, and
- Preservation of human health, and food safety.

Faculty of Agriculture and Veterinary offers study programs which cover all these branches of plant and animal production, policy development for the increase of these products and marketing of these products in general.

Organisational Structure



Presentation of Study Programmes

Study Programmes

Study programmes on Faculty of Agriculture and Veterinary Studies are organised according to Bologna principles. Bachelor studies last for 3 year (6 semesters) and holds 180 ECTS and Master studies lasts for 2 year (4 semesters) and holds 120 ECTS.

There are seven study programmes:

- Zootechnical Biotechnology,
- Plant Production,
- Plant Protection,
- Fruit tree and Viticulture,
- Agroeconomy,
- Veterinary Medicine,
- Food Technology and Biotechnology.

All of them are carried out on 1st and 2nd Bologna cycle, with expectation of Food Technology and Biotechnology (just BSc programme) and Veterinary Medicine (just diploma programme).

International Accreditation of Study Programmes

All programs mention above has been accredited by a national Accreditation Agency in cooperation with international expertizes (staff).

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

They can through the Erasmus Mundus and Basileus programs.

Procedure of recognition of completed study responsibilities at another faculty or in another country

This procedure is under authority of the Ministry of Education Science and Technology of Kosovo.

Recognition of Diplomas of Other Faculties from Abroad

This procedure is under authority of the Ministry of Education Science and Technology of Kosovo.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
	681	806	776
TOTAL:	**681**	**806**	**776**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
	72	103	71
TOTAL:	**72**	**103**	**71**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration: 3 years			
	79	64	65
TOTAL:	**79**	**64**	**65**
Postgraduate study programmes (2nd Bologna cycle): duration: 2 years			
	0	0	9
TOTAL:	**0**	**0**	**9**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

International Exchange

International exchange of professors and researchers:

Skender Muji: University of Natural Resources and Applied Life Sciences, Vienna – 12.04.2010-16.04.2010.

Hysen Bytyçi: Research visit at the Department of Animal Sciences – BOKU University Vienna.

Hysen Bytyçi: Research training visit at Szent Istvan University of Godollo in Hungary.

Hysen Bytyçi: Research visit at the Department of Animal Sciences – University of Hohenheim, Germany.

Hysen Bytyçi: Research visit at Montana University in Leoben, Austria.

Xhavit Ramadani: Research training visit from 12-25.Aprill 2010, at Szent Istvan University of Godollo in Hungary.

Blerta Mehmedi: University of Natural Resources and Applied Life Sciences, Vienna – 12.04.2010-16.04.2010.

Blerta Mehmedi: Szent Istvan University of Godollo, Hungary – 02.05.2010-09.05.2010

Ardita Jahja-Hoxha: Research training visit at Szent Istvan University of Godollo in Hungary, period from 14 till 28th of November, 2010.

Ardita Jahja-Hoxha: Research visit at the Department of Animal Sciences – University of Hohenheim, Germany. 09 – 18 July, 2010.

Ardita Jahja-Hoxha: Visit to Unite State Department for Agriculture – August 2010.

Ragip Kastrati: University of Natural Resources and Life Sciences, Vienna Institute of Animal Nutrition, Products and Nutrition Physiology.17-21 May 2010.

Muhamet Kamberi: University of Natural Resources and Life Sciences, Vienna Institute of Animal Nutrition, Products and Nutrition Physiology.17-21 May 2010.

Muhamet Kamberi: Research training visit at Szent Istvan University of Godollo in Hungary, period from 21 March -04 April, 2010.

Alltane Kryeziu: Research training visit at Szent Istvan University of Godollo in Hungary, period from 21 March -04 April, 2010.

Kurtesh Sherifi: Visit to United State Department for Agriculture – August 2010.

Shukri Fetahu: University of Natural Resources and Applied Life Sciences, Department of Applied Plant Sciences and Plant Biotechnology, Austria, Tulln; 7 to 13 March 2010.

Sali Aliu: University of Natural Resources and Applied Life Sciences, Department of Applied Plant Sciences and Plant Biotechnology, Austria, Tulln; 7 to 13 March 2010.

Skender Kaçiu: University of Natural Resources and Applied Life Sciences Austria. 05-15. 04 2010.

Skender Kaçiu: Visit to United State Department for Agriculture – August 2010.

Shukri Fetahu: Research training visit at Szent Istvan University of Godollo in Hungary, period from 14 till 28th of November, 2010.

Sali Aliu: Research training visit at Szent Istvan University of Godollo in Hungary, period from 09-24 May 2010.

Skender Kaçiu: Research training visit at Szent Istvan University of Godollo in Hungary, period from 09-24 May 2010.

International exchange of students

Each year the Faculty of Agriculture and Veterinary organize two international summer schools for students. Each of them was attended by 10 foreign students.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students		20		20
Researchers		3		3
professors		5		5
TOTAL:		**28**		**28**

International exchange in the future

The international exchange in future will be on next areas: Food sciences, Plant biotechnology, Animal biotechnology and Veterinary medicine.

Person responsible for international exchange:

Prof. Naser Mrasori Vice rector for International cooperation

E-mail: Naser.mrasori@uni-pr.edu

Telephone: +381 38 244 183

MACEDONIA

Country's Education System

Macedonian education system is based of the Law for Elementary and Secondary Education and Law for High Education of the Republic of Macedonia, National Strategy for development of Education in Republic of Macedonia and criteria and requirements of EU.

The elementary Scholl in Republic of Macedonia is obligatory. The duration of elementary education is 9 years. According to the Law for Elementary and Secondary Education, also the secondary education is obligatory. The duration of secondary education is 4 years. Secondary education can be professionally or students can apply for general secondary education-gymnasium.

After graduation at secondary school and passing the graduated exam, students can apply for Faculty at first cycle (undergraduate study programmes). Depend from the Faculty, the first cycle is organised in 6 or 8 semesters with duration of 3 or 4 years. All courses are one semester courses. Students can accumulate minimum 180 and 240 ECTS credits in all 6 or 8 semesters. After graduation students obtain Diploma BSc.

After graduation at the Faculty students can apply for second cycle (postgraduate study programmes). The second cycle is organised in 2 semesters with duration of 1 year for students who have accumulated minimum 240 ECTS credits or in 4 semesters with duration of 2 years for students who have accumulated minimum 180 ECTS at first cycle. Students can accumulate minimum 60 ECTS credits for one year study programmes or 120 credits for two year study programmes. After passing all exams and defending the master thesis followed by public presentation, Students obtain Diploma M.Sc.

The study programmes at 3rd cycle are still in process of accreditation at most of the Faculties in Republic of Macedonia, because of the changes and new additions in the Law for High Education of the Republic of Macedonia. Students how have obtained Diploma of M.Sc. according to the old study system (before Bologna, 2 years master study) can apply for PhD until 31.12.2011**,** after that period students can apply for on 3rd Bologna cycle. The duration of 3rd Bologna cycle is 3 years, and students can accumulate 60 ECTS credits for one year or 180 ECTS credits for three years.

College and Higher Education Organisations in the Field of Agriculture in the Country

There are three Colleges and Higher Education Organisations in the field of Agriculture in country:

- Faculty of Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje,
- Faculty for Agriculture, University of Goce Delccev in Stip and
- Faculty for Biotechnology at University of Ss. Kliment Ohridski in Bitola.

Faculty of Agriculture, University of Goce Delccev in Strip is pretty new higher education organisation, around 3 years, while the Faculty for Biotechnology at University of Ss. Kliment Ohridski in Bitola is almost 15 year old as a Faculty, and 35 year as High educational school. It is very important to mention that most of the professors from both above mentioned institutions had obtained their education (B.Sc., M.Sc., PhD) at the Faculty of Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje. Also, many professors from Faculty in Skopje are visiting professors at Faculties in Strip and Bitola.

UNIVERSITY OF SKOPJE, FACULTY OF AGRICULTURAL SCIENCES AND FOOD

Address: Aleksandar Makedonski bb, 1000 Skopje, Macedonia

Telephone (central office): +389 2 3 115 277

E-mail (Dean's office/secretariat): dragi_dimitrievski@yahoo.com

Website: www.fznh.ukim.edu.mk

Key Areas of Work

The Faculty for Agricultural Sciences and Food (FASF, http://www.zf.ukim.edu.mk), Skopje is a member of the University Ss Ciryl and Methodius, the largest university in the Republic of Macedonia. FASF was established in 1947 and along with other two faculties was one of the founders of the University. FASF acts as a legal entity with an own unique organization and management.

Since its establishment FASF has undergone through numerous reforms aimed to follow the global transition tendencies in agriculture development and educational systems. Five years ago FASF was among the first five members of the University in Skopje that has introduced ECTS system according to Bologna Declaration.

Around 350 students are currently registered every year at the FASF. Once they complete their studies successfully, they become Agricultural Engineers. Currently 10 different curricula are offered at the undergraduate program. The concept of the study programs covers broad scope of courses, starting from the basic natural sciences up to the specific areas: primary agricultural production, crop and livestock production, food technology, processing and safety, management of environment and agricultural economics. Beside undergraduate studies, FASF organizes regularly 7 programs for specialization studies, 18 programs for MSc studies with 18 different sub-groups, and doctoral studies.

Organisational Structure

FASF is the largest educational and scientific research institution in the field of agriculture and food in the Republic of Macedonia, with 137 employees, out of which 69 PhD holders, 14 M.Sc. holders, 9 B.Sc. holders and 15 laboratory technicians (FASF, 2006).

Until now, more than 6770 students were awarded with B.Sc. degree; over 340 students have gained Master of Science degrees; 113 have specialised; and 210 obtained a PhD degree over the past 60 years (FASF, 2009).

FASF transfers its knowledge and professional experience on broad scope of users starting from the students, through general public, farmers, various NGOs, organizations, companies, extension services, up to the decision makers. For successfully realization of these activities, FASF regularly organizes, or is involved in:

- contemporary study programs
- short courses or other forms of informal education
- advisory and extension system
- national and international projects
- publication of professional and scientific literature
- forums, meetings Faculty-Industry, workshops, seminars, symposiums
- writing governmental documents: laws, strategies, action plans

Institutional development priorities: Leading institution in agricultural sciences and food education and research. International cooperation. Recent successful implementation of the credit transfer system according to the Bologna declaration

Organisational structure: The undergraduate and postgraduate studies are delivered at a building owned by the Faculty, with total area of 6.275 m^2. This building contains two large lecturing amphitheatres (200 seats each); 4 small amphitheatres (100 seats each); 15 lecture rooms (50 seats each); a library, many laboratories and computer rooms etc. On-the-field training and practical placements during the vacation periods are carried out throughout the country and abroad.

The FASF is consisted of the following Institutes and departmental units:

- Institute for Plant Biotechnology (Viticulture and wine production, Fruit production, Genetics, Vegetable and Flower production, Agroclimatology, and Field crop cultivation)
- Institute for Animal Biotechnology (Livestock production, Animal welfare, Technology for dairy products and Biochemistry and genetic engineering)
- Institute for Food (Food quality and food safety and Processing of fruits and vegetables)
- Institute for Environment (Soil science, Irrigation, Ecology and Agrochemistry)
- Institute for Plant protection and Agricultural machinery (Plant protection and Agricultural machinery)
- Institute for Agricultural economics (Agricultural economics and Agrobusiness).

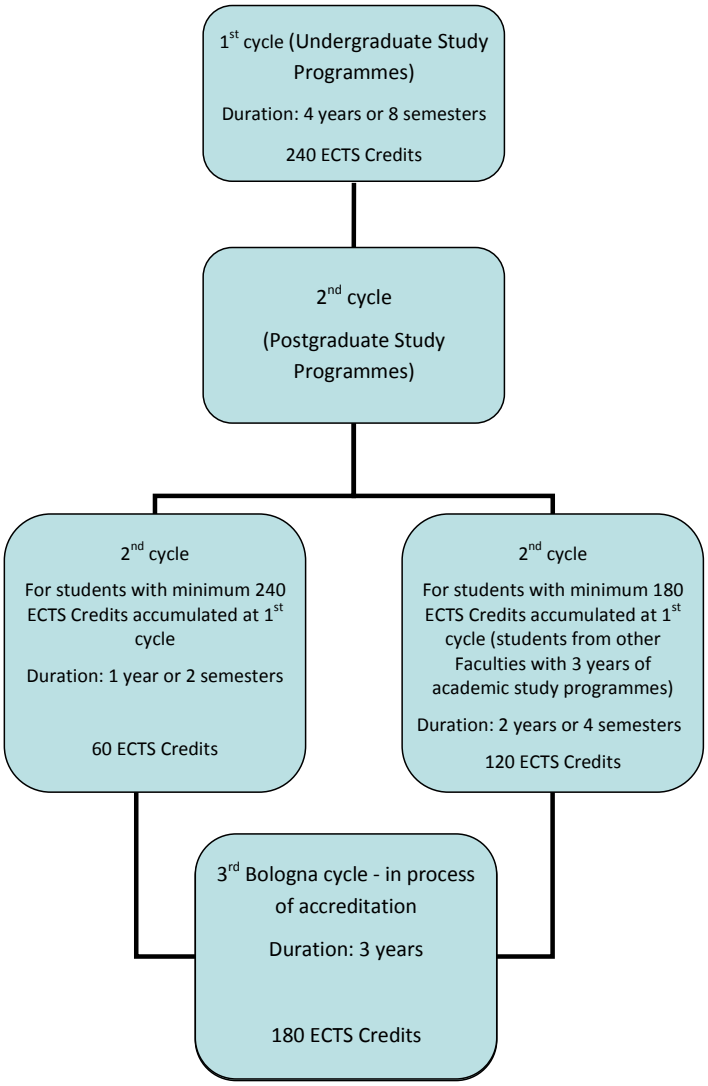
Presentation of Study Programmes

Study Programmes

According to the new Law for High Education of the Republic of Macedonia, accreditation of the study programmes at 1st, 2nd and 3rd Bologna cycle must be done at every 5 years. Therefore, the last accreditations of study programmes at 1st and 2nd cycle of the Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje were done in 2010. Also, Faculty for Agricultural Sciences and Food in Skopje have done reforms at all previous study programmes (implemented in 2002 according to Bologna process) and have established several new study programmes at 1st and 2nd cycle in accordance with the requirement of the labour market and compatibility of the study programmes in EU and Region.

The study programmes at 3rd cycle are still in process of accreditation, because of the changes and new additions in the Law for High Education of the Republic of Macedonia. The PhD students how have chosen Doctoral programs before implementation of the new Law for High Education of the Republic of Macedonia (2008), can realise doctoral thesis by old mentor system for at least 3 years, followed by public presentation of the results from investigations.

Faculty for Agricultural Sciences and Food is the biggest high educational institution in field of Agriculture and Food in the



Republic of Macedonia. The Faculty for Agricultural Sciences and Food offering 11 study programmes at 1st cycle (undergraduate study programmes), 10 programs (with 34 sub study programmes) at 2nd cycle (postgraduate study programmes) and doctoral studies.

1st cycle (undergraduate study programmes) at the Faculty for Agricultural Sciences and Food: The first cycle (undergraduate study programmes) is organised in 8 semesters with duration of 4 years. All courses are one semester courses, mainly with 6 credits for each courses, beside 2nd semester where student have 3 courses with 8 credits and one elective course with 6 credits, and 8th semester where all courses are with 5 credits. Students can accumulate 30 credits in one semester or 240 ECTS credits in all 8 semesters. Minimum 25 % from the courses at each study programmes at first cycle are elective. Mainly, in the first 3 semesters for all study programmes students can get introduction of the common courses, while from 4th to 8th semester students learning courses depend from profile of the study programmes. After graduation students obtain Diploma B.Sc. in Agriculture and study programme at which student has graduated.

The Faculty for Agricultural Sciences and Food offering 11 study programmes at 1st cycle (undergraduate study programmes), as follow:

- Filed Crops Production
- Vegetable and Flower Production
- Viticulture and Vine Production
- Fruit Production and Viticulture
- Plant Protection
- Animal Biotechnology
- Agroeconomy
- Processing of Agricultural Products (with 2 sub programmes)
- Processing of Plant Products
- Processing of Animal Products
- Eco-agriculture
- Food quality and safety
- Tobacco Production and Processing

All study programmes at 1st cycle at the Faculty for Agricultural Sciences and Food are performed independently.

2nd cycle (postgraduate study programmes) at the Faculty for Agricultural Sciences and Food: The second cycle (postgraduate study programmes) is organised in 2 semesters with duration of 1 year for students who have accumulated minimum 240 ECTS credits and in 4 semesters with duration of 2 years for students who have accumulated minimum 180 ECTS. All courses are one semester courses, with unilinear number of credits for each courses. In one semester students can accumulate 30 credits or 60 ECTS credits for one year study programmes or 120 credits for two year study programmes. Minimum 25 % from the courses at each study programmes at second cycle are elective. After passing all exams and defending the master thesis followed by public presentation, Students obtain Diploma M.Sc. in Agriculture and study programme at which student has studied.

The Faculty for Agricultural Sciences and Food offering 10 programs (with 34 sub study programmes) at 2nd cycle (postgraduate study programmes), as follow:

- Plant Biotechnology (with 8 sub study programmes: Filed Crops Production, Processing of Filed Crops Products, Vegetable and Flower Production, Fruit Production, Viticulture Production, Vine Production, Production of Alcohol drinks and Genetics and Plant Breeding)
- Plant Protection-Phytomedicine
- Animal Biotechnology (with 10 sub study programmes: Genetics and Selection, Animal Nutrition, Management of Animal Health and Welfare, Cattle Breeding, Sheep Production, Goat Production, Pig Production, Poultry Production, Fish Production and Apiculture)
- Processing of Animal Products (with 4 sub study programmes: Milk and Milk Products, Meat and Meat Products, Nutrition and Control and Food safety from Animal Products)
- Agroeconomy

- Management of Nature Resources and Environment in Agriculture Production (with 6 sub study programmes: Pedology, Irrigation of Agricultural Crops, Agrochemistry, Ecology, Erosion and Land Reclamation in Agriculture and Sources of Pollution in Agriculture Production)
- Food quality and safety (with 4 sub study programmes: Microbiology, Food quality and safety, Etnobothany and Processing of Vegetable and Fruit Products)
- Agricultural Machinery (with 2 sub study programmes: Agricultural Machinery in Plant Production and Agricultural Machinery in Animal Production)
- Agro-tourism (University Study Programme)
- Agribusiness (International study programme)

The study programme for Agro-tourism is organised by the Faculty of Agricultural Sciences and Food and Institute for Economy at Ss. Cyril and Methodius University in Skopje. The study programme for Agribusiness is an International study programme organised with the University in Uppsala-Sweden, while the other eight study programmes at 2nd cycle are performed independently from the Faculty for Agricultural Sciences and Food.

The organisation of the study programmes at the Faculty for Agricultural Sciences and Food at all three levels of study is presented on the organisational chart.

International Accreditation of Study Programmes

The study programme for Agribusiness at 2nd cycle study is accredited in R of Macedonia as an International study programme organised as a double degree master between Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje and Swedish University of Agricultural Sciences –SLU in Uppsala.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

The International study programme for Agribusiness at 2nd cycle study programmes enables students to enrol the 4th semester (thesis course) at SLU.

Procedure of recognition of completed study responsibilities at another faculty or in another country

According to implemented Bologna Process in higher education system in Republic of Macedonia, Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje has principles for using all suggestion for recognition of completed study responsibilities realised at another Faculty or in another country recommended by European Higher Education Area or with the framework of bilateral agreements. The main principles of Bologna Process for recognition of period of study abroad as Proper selection of partner institutions, Integration of mobility into study programmes, Allocation of academic responsibilities and Interaction with single outgoing students, are also main principles of the Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje.

Recognition of Diplomas of Other Faculties from Abroad

According to the new Law for High Education of the Republic of Macedonia, the procedure for recognition of diplomas of other faculties from abroad are in competence of the Ministry for Sciences and Education of the Republic of Macedonia. The procedure for recognition of diplomas of other Faculties from abroad is in accordance with the recommendations of European Higher Education Area (ECTS). Republic of Macedonia has signed bilateral agreements with former Yugoslavian Republics regarding the recognition of diplomas of the students who have obtained diplomas at the Universities in former Yugoslavia.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
Full-time	279	251	253
Part-time	39	30	25
TOTAL:	**318**	**281**	**278**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	41	58	121
TOTAL:	**41**	**58**	**121**
Doctoral study programmes (3rd Bologna cycle): duration:			
	14	17	-
TOTAL:	**14**	**17**	**-**

Additional explanation: The total number of students on 1st cycle study programmes (undergraduate study programmes) in an individual academic year for all 4 study years (8 semesters) at the Faculty for Agricultural Sciences and Food is around 1000.

The total number of students on 2nd cycle study programmes (postgraduate study programmes) in an individual academic year for all study years (2 or 4 semesters) at the Faculty for Agricultural Sciences and Food is around 200.

According to new Law for High Education of the Republic of Macedonia (from 2008) students have had possibility to apply for Doctoral programmes by old mentor system until to the end of September 2009.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	149	203	167
TOTAL:	**149**	**203**	**167**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	7	9	15
TOTAL:	**7**	**9**	**15**
Doctoral study programmes (3rd Bologna cycle): duration:			
	6	7	6
TOTAL:	**6**	**7**	**6**

Additional explanation: According to the Law for High Education of the Republic of Macedonia (from 2008) students have possibility to defend doctoral thesis by old mentor system until 1.1.2015.

International Exchange

International exchange of professors and researchers:

Since 2000, the Faculty's international cooperation has been institutionalized with the assignment of Vice Dean for international cooperation. The international cooperation priorities are: intensifying the international teachers and students mobility, greater participation in international projects, European integration of the teaching process at the Faculty through approaching study and teaching programs, creating conditions for approaching the scientific – research work of the developed countries, regional connection with university institutions in the field of agriculture in the wider region. Several international scientific – research and application projects have been carried out at the Faculty of agricultural sciences and food within the TEMPUS, FAO/IAEA, UNIDO, SKOPES, TUBITAK and other multilateral and bilateral programs.

International exchange of students

International exchange and mobility of students are made through many programs and networks such as CEEPUS, BASILEUS and ERASMUS MUNDUS.

International exchange in the future

The changes and challenges facing agriculture in the future will be substantial. The conditions for animal husbandry and cultivation of plants for production of food and other products are very much affected by global processes and climate change. To meet these challenges scientifically-based knowledge is needed. Faculty of Agricultural Sciences and Food have the aim to perform research activities and to cooperate with the institutions from abroad and especially with the institutions in the region. The priority areas are: global climate changes, sustainable use of natural resources with emphasis on agricultural production, including farm animals, and land use.

Person responsible for international exchange:

Prof. Elizabeta Angelova, PhD, Vice Dean

E-mail: angelovaelizabeta@yahoo.com; eangelova@zf.ukim.edu.mk

Telephone: +38970 760873

MONTENEGRO

Country's Education System

Enrolment of students in the first year of study is based on Open Call for all University degree programs. The first enrolment period is organized in the second half of June. Right to apply for entry to the competition have applicants with completed four-year secondary education. Enrolment of students is done on a competitive basis in accordance with the results achieved at the end of the secondary school and after the qualification procedure. For admission to a degree program candidates are required to pass the supplementary examinations, which are as Additional requirements for registration set in regulations of the Faculty.

College and Higher Education Organisations in the Field of Agriculture in the Country

The only Higher education organization in the field of Agriculture in Montenegro is Biotechnical faculty.

UNIVERSITY OF MONTENEGRO, BIOTECHNICAL FACULTY

Address: Mihajla Lalića 1

Telephone (central office): +382 20 268 734

E-mail (Dean's office/secretariat): btf@ac.me

Website: www.btf.ac.me

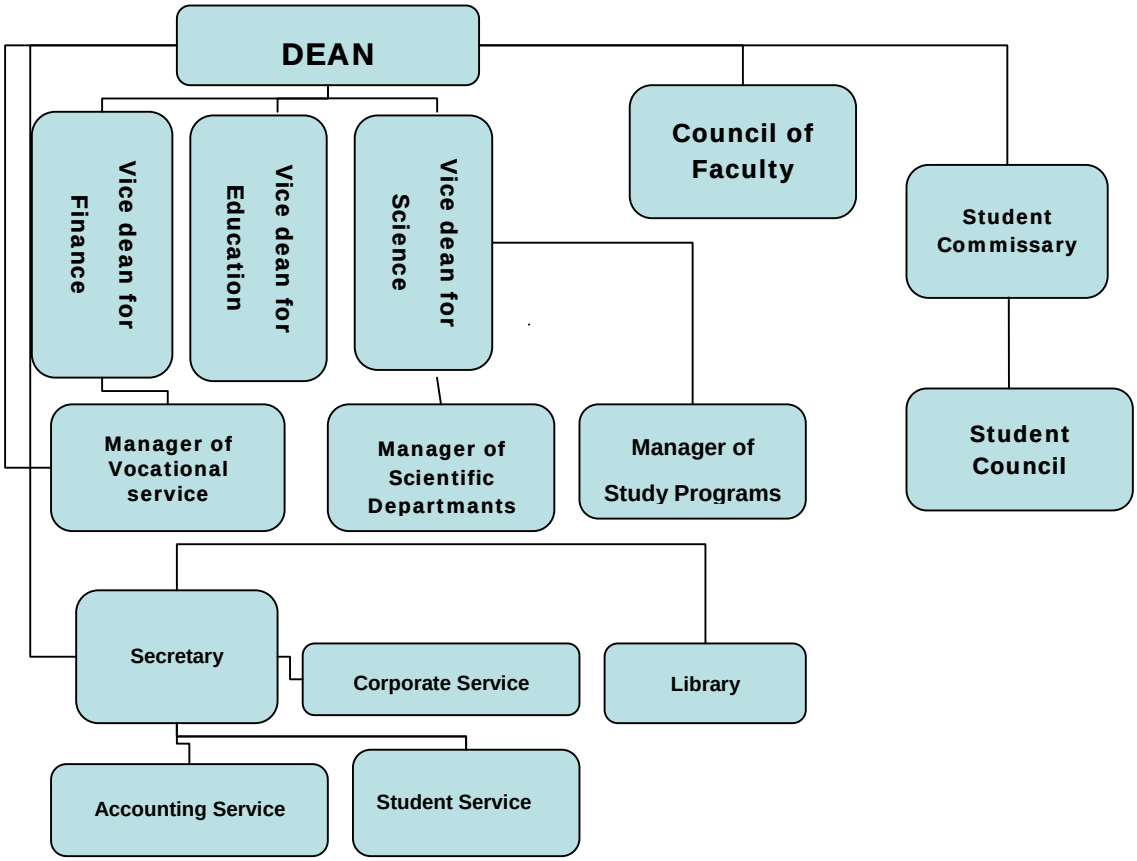
Key Areas of Work

Biotechnical Faculty has evolved from the Biotechnical Institute, the oldest scientific research institution in Montenegro and one of the founders of the national University. In 2005 the study of Agriculture at the University of Montenegro has been established.

Key areas of work of Biotechnical faculty are higher education, research and professional consulting service in agriculture. Today Faculty employs 33 employees with PhD degree and 12 with MSc degree, what is a solid basis for education of professionals in agriculture and modern scientific research work. Theoretical and practical education is carried out in lecture halls, classrooms and laboratories located in main building in Podgorica as well as in Bar and Bijelo Polje. Additionally, part of students' practical work and faculties' production is carried out on its experimental farms.

Organisational Structure

Main activities of Biotechnical faculty are: Research, Higher education and Services.



Organizational structure of BF is corresponding to the main research activities. Thus, the Faculty consists of ten research departments:

- Department for agricultural economy
- Department for Land and Melioration
- Department for Forestry
- Department for Plant Protection
- Department for Field crops and Vegetable production
- Department for Livestock production
- Department for Veterinary
- Department for Vineyard, Fruit growing and enology
- Department for Subtropical fruits
- Department for Continental fruit growing

Higher education is performed in two levels, in accordance to Bologna declaration.

- Basic academicals studies are organized in two divisions: Plant production and Livestock production
- Master studies are organized in four divisions: Vineyard and Fruit growing, Field crops and Vegetable production, Plant Protection and Livestock production

Services that faculty provide are classified into two main groups:

- Extension (so called “sister” services: Livestock Selection Service and Plant Production Extension Service) and

- Laboratory services (Milk lab, Phytosanitary lab, Agro-chemistry lab, Oenology lab, Pomology lab, Seed Control Lab)

Presentation of Study Programmes

Study Programmes

Academicals studies are organized in two divisions - Plant Production and Livestock production.

Plant Production Studies:

1. Undergraduate Studies in Plant production at the beginning provides general knowledge of science (mathematics, chemistry), with special emphasis on the biological disciplines (microbiology, biochemistry, genetics), and general and specialized knowledge in field and vegetable crops, fruit growing, viticulture, agriculture, vegetable production, plant protection and agroeconomy.

2. Specialist studies of Plant production, because of the variety, are divided into three modules:

- Fruit and vine growing
- Field and Vegetable Crops
- Plant Protection

3. Master studies in Plant Protection are also organized in three modules:

- Fruit and vine growing
- Field and Vegetable Crops
- Plant Protection

Livestock Production Studies:

1. Undergraduate Studies in Livestock production are organized that allows students to gain the basic knowledge of science (mathematics, chemistry) and general biological disciplines (microbiology, biochemistry, genetics). Then acquire knowledge on special programming disciplines: nutrition, feed production, principles of breeding and selection work, cultivation technology of some kind of domestic animals, basic production of milk and meat, as well as in agroeconomy disciplines.

2. Specialist Studies in Livestock Production allows the acquisition of knowledge in the fields of technology of meat and meat products, processing technology of milk and dairy products, reproduction domestic animals, as well as the calculation of basic economic indicators in livestock production.

3. Master studies in Livestock Production

International Accreditation of Study Programmes

There isn’t any international accreditation of the study programmes.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

There is no signed agreement according to which our study system enables the students to choose a subject at another faculty.

Procedure of recognition of completed study responsibilities at another faculty or in another country

There is no procedure of recognition of completed study responsibilities at another faculty or in another country.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	264	277	307
TOTAL:	**264**	**277**	**307**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	-	23	13
TOTAL:	**-**	**23**	**13**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation: Faculty doesn't have Doctoral studies.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	40	86	67
TOTAL:	**40**	**86**	**67**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	-	0	0
TOTAL:	**-**	**0**	**0**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

Additional explanation: Faculty doesn't have Doctoral studies.

International Exchange

International exchange of students

2 students at Mediterranean Agronomic Institute of Chania (MAICh) in Greece

1 student at Biotechnical Faculty in Ljubljana, Slovenia (ERASMUS MUNDUS PROGRAMME)

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	-	2	-	-
Researchers and profesors	-	-	-	-
TOTAL:	**-**	**2**	**-**	**-**

International exchange in the future

In scope of the activities within FP7-REGPOT-2010-5 project named “Fostering a Science- based Development of a sustainable Montenegrin Agriculture” 22 researchers (employees) and 2 students will be sent for training in the five partner institutions (Biotechnical Faculty – University of Ljubljana, Slovenia; University of Hohenheimm, Germany; University of Natural Resources and Applied Life Sciences – Vienna, Austria; Wageningen University, Netherlands; Swedish Biodiversity Centre, Sweden), for duration ranging from two to three weeks and with 64 weeks of training in total. Also, 14 researchers from the EU partner institutions to BTF will be host, for duration from one to two weeks and with 15 weeks in total.

Person responsible for international exchange:

Dr. Slavko Mirecki

E-mail: slami@t-com.me

Telephone: +382 69 507 394

SERBIA

Country's Education System

The primary school programme takes 8 years and secondary schools programme (grammar, vocational and art schools) 4 years; Grammar schools offer general education in social studies and science. Secondary vocational schools offer both general and vocational (practical and theoretical) education for direct entry in the world of work and further education.

From the year 2000 higher education institutions in Serbia became involved in the European trends of reforms and harmonization in the field of higher education known as Bologna process. Considerable reformatory activities have been launched since Serbia signed Bologna declaration in September 2003.

Under the law on high education put on power in 2005, university education in Serbia is organised according to the system of transferable points and has three levels: The undergraduate study programmes typically last for four years and bring 240 ECTS. Upon the completion of the undergraduate study, students are awarded the title of BSc. Postgraduate (or more commonly graduate) study programmes, which last for one year, carry 60 ECTS and award the degree of MSc. PhD courses can be taken after completing a graduate (postgraduate) university course – they typically last for three years, and the academic title of Doctor of Science is awarded upon completion. The university can also offer postgraduate specialist courses that last for one year, by which one can acquire the title of a specialist in a certain specialist field.

The basic requirement for entering the first year of undergraduate study programme at university is completed four-year secondary school. Diplomas of secondary schools obtained in other countries are easily transferred to documents recognized as diplomas obtained in Serbia. Most of the faculties at Serbia universities organized admit them on exams as precondition for enrolment to the first year of undergraduate study programmes. In close cooperation with local governments, each of Serbia universities set the number of so-called budget students i.e. students who do not pay scholarship for their studying. Besides them, students out of so-called "quotas" can study if they pay a part of the economically estimated full study costs.

For transition from undergraduate to master study programmes, there are no other preconditions, except obtained 240 or in some cases 180 ECTS. Admit ion exams could be organized for students who are coming from so-called non-compatible undergraduate study programme. Most usually, the study programme teaching-scientific board decides the compatibility.

The high average mark (for both BSc and MSc, above 8) on master study is set as a common prerequisite for entering doctoral study programme.

Other College and Higher Education Organisations in the Field of Agriculture in the Country

In the field of Agriculture there are four Higher Education Organisations:

- Faculty of Agriculture, University of Belgrade,
- Faculty of Agriculture, University of Novi Sad,
- Faculty of Agronomy, Cacak; University of Kragujevac,
- Faculty of Agriculture, Lesak, University of Prishtina.

UNIVERSITY OF BELGRADE, FACULTY OF AGRICULTURE

Address: Nemanjina 6, 11080 Belgrade

Telephone (central office): +381 11 261 5315; +381 11 2615 300

E-mail (Dean's office/secretariat): office@agrif.bg.ac.rs

Website: www.agrif.bg.ac.rs

Key Areas of Work

Key areas of work are higher education and research in the field of Biotechnological Sciences.

Organisational Structure

Organisational structure of Faculty of Agriculture by Institutes and departments:

Institute of Crop Science:

Department of Agrobotany,

- Department of Agrotechnics and Agroecology
- Department of Crop and Vegetable Sciences
- Department of Genetics, Plant Breeding and Seed Science
- Department of Foreign Languages

Institute of Fruit Science and Viticulture:

- Department of Fruit Science
- Department of Viticulture

Institute of Zootechnics:

- Department of General Animal Science and Breeding of Domestic and Raised Animals
- Department of Domestic and Raised Animals Nutrition
- Department of Growing and Reproduction of Domestic and Raised Animals

Institute of Soil Management:

- Department of Pedology and Geology
- Department of Agrochemistry and Plants Physiology
- Department of Ecological Microbiology
- Department of Irrigation, Drainage and Preservation of Soil

Institute of Phytomedicine:

- Department of Phytopathology
- Department of Entomology and Agricultural Zoology
- Department of Pesticides

Institute of Agricultural Engineering:

- Department of Mathematics and Physics
- Department of Technical Sciences
- Department of Mechanisation of Agriculture

Institute of Food Technology and Biochemistry:

- Department of Chemistry and Biochemistry
- Department of Technology of Preservation and Fermentation
- Department of Technology of Crop Products

- Department of Technology of Animal Products
- Department of Technological Microbiology
- Department of Management of Food Safety and Quality

Institute of Agricultural Economics:

- Department of Ecomonics of Agriculture and Market
- Department of Management in Agrobusiness
- Department of Theory of Costs, Accounting and Finances
- Department of Theoretical Economics, Sociology, Rural Sociology and Business Law
- Department of Statistics

Presentation of Study Programmes

Study Programmes

BSc study programmes: Plant Production (Modules: Crop and Vegetable Sciences; Fruit Science and Viticulture; Horticulture; Phytomedicine); Zootechnics; Soil Management; Agricultural Engineering; Agricultural Economics; Food Technology (Modules: Technology of Animal Products; Technology of Preservation and Fermentation; Technology of Crop Products; Safety and Quality Management in Food Production).

MSc study programmes: Crop and Vegetable Sciences; Fruit Science and Viticulture; Horticulture; Phytomedicine; Zootechnics; Soil Management; Agricultural Engineering; Food Technology; Agricultural Economics; Lowland Agricultural Water Management; Environmental Protection in Agriculture.

Specialization study programmes: Food Technology (Modules: Technology of Animal Products; Technology of Crop Products; Technological Microbiology; Chemistry of Food); Zootechnics.

PhD study programmes: Agricultural Sciences (Modules: Crop and Vegetable Sciences; Fruit Science and Viticulture; Zootechnics; Soil Management; Phytomedicine; Agricultural Engineering); Food Technology.

Recognition of Diplomas of Other Faculties from Abroad

Recognition of foreign higher education document is a procedure which grants the document holder the right to continue education or find employment.

Recognition for the purpose of further education: The procedure of recognition for the purpose of further education entails the evaluation of a foreign study programme or its part and establishes the candidate's right to continue the enrolled course or enrol a certain study programme. The recognition of a foreign higher education document for the purpose of further education is carried out by the University, in accordance with the Book of Rules.

Recognition for employment purposes: The procedure of recognition of foreign higher education document for employment purposes entails establishing the type and level of studies, as well as professional, academic or scientific title. The recognition of a foreign higher education document for employment purposes is carried out by the University, in accordance with the Book of Rules. Candidates submit the request for recognition of foreign higher education document to their respective Faculties.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
Plant Production (Modules: Crop and Vegetable Sciences; Fruit Science and Viticulture; Horticulture; Phytomedicine)	475	628	741
Zootechnics	141	169	195
Soil Management	57	76	85
Agricultural Engineering	69	65	86
Agricultural Economics	247	342	416
Food Technology (Modules: Technology of Animal Products; Technology of Preservation and Fermentation; Technology of Crop Products; Safety and Quality Management in Food Production)	348	414	583
TOTAL:	**1.337**	**1.694**	**2.046**
Postgraduate study programmes (2nd Bologna cycle): duration:			
MSc - Crop and Vegetable Sciences	1	3	2
MSc - Fruit Science and Viticulture	-	1	1
MSc - Horticulture	-	-	-
MSc - Phytomedicine	2	4	8
MSc - Zootechnics	1	1	-
MSc - Soil Management	-	1	2
MSc - Agricultural Engineering	-	-	1
MSc - Food Technology	1	1	3
MSc - Agricultural Economics	1	4	19
MSc - Lowland Agricultural Water Management	4	5	-
MSc - Environmental Protection in Agriculture	-	16	21
Spec - Food Technology (Modules: Technology of Animal Products; Technology of Crop Products; Technological Microbiology; Chemistry of Food)	21	14	16
Spec - Zootechnics	9	6	6
TOTAL:	**40**	**56**	**79**
Doctoral study programmes (3rd Bologna cycle): duration:			
Agricultural Sciences (Modules: Crop and Vegetable Sciences; Fruit Science and Viticulture; Zootechnics; Soil Management; Phytomedicine; Agricultural Engineering)	43	-	52
Food Technology	15	-	14
TOTAL:	**58**	**-**	**66**

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	-	-	-
TOTAL:	-	-	-
Postgraduate study programmes (2nd Bologna cycle): duration:			
MSc - Lowland Agricultural Water Management	-	-	1
MSc - Environmental Protection in Agriculture	-	-	5
Spec - Food Technology (Modules: Technology of Animal Products; Technology of Crop Products; Technological Microbiology; Chemistry of Food)	-	-	1
Spec - Zootechnics	-	-	2
TOTAL:	**-**	**-**	**9**
Doctoral study programmes (3rd Bologna cycle): duration:			
Agricultural Sciences (Modules: Crop and Vegetable Sciences; Fruit Science and Viticulture; Zootechnics; Soil Management; Phytomedicine; Agricultural Engineering)	-	-	5
Food Technology	-	-	-
TOTAL:	**-**	**-**	**5**

International Exchange

Person responsible for international exchange:

Bogdan Mladenović

E-mail: bogdan@agrif.bg.ac.rs

Telephone: +381 11 2615 315

UNIVERSITY OF NOVI SAD, FACULTY OF AGRICULTURE

Address: D. Obradovica 8, 21 000 Novi Sad, Serbia

Telephone (central office): +381 21 4853210

E-mail (Dean's office/secretariat): dean@polj.uns.ac.rs

Website: www.polj.uns.ac.rs

Key Areas of Work

The Faculty of Agriculture (FANS) is the member of the University of Novi Sad. The FANS basic mission is high education in fields of agriculture and veterinary medicine. The FANS implemented all levels of high education process (graduate, postgraduate, doctoral). Regardless of the type and level, studies

are organized as full-time studies, which can be state-funded or self-funded. Academic studies are based on programs which assure students' education and practical skills. The academic studies are organized on three levels, according to the system 4+1+3: 1) First Degree Studies – Undergraduate Academic Studies – Bachelor (8 semesters, 4 academic years, 240 ECTS) 2) Second Degree Studies – Graduate Academic Studies – Master (2 semesters, 1 academic year, 60 ECTS) 3) First and Second Degree Studies – Integrated Academic Studies – Veterinary Medicine (10 semesters, 5 academic years, 300 ECTS) 4) Third Degree Studies – Doctoral Academic Studies (6 semesters, 3 academic years, 180 ECTS). Besides high education, FANS is a research driven organization in the fields of agricultural and veterinary medicine.

Scientific - research work is carried out in the Institutes based on the national projects financed by the Ministry for Science and Technology of Serbia and Government of the Vojvodina Province as well as through international projects financed by international organizations and foundations. Students also participate in the scientific - research work. The Faculty has a highly developed and well organized cooperation with the industry based on contacts with a great number of socially-owned and private companies and cooperative farms. This cooperation comprises project designing, consulting services, technology development, selection of the best varieties, breeds and clones. Professional assistance is rendered, besides farm supervision, through seminars, making recommendations, media presentations, winter schools, workshops as well as through organizing other forms of continuing education of agricultural experts and producers.

The practical work of the students as well as the scientific - research work at the Faculty are carried out at the experimental fields run by the Heads of the Institutes. The experimental fields of the Faculty cover 400 ha.

The Faculty has developed an intensive international cooperation with many Faculties, Universities and Institutes all over the world. The cooperation is based on the exchange of students, teaching staff and scientist, joint research work, the publication of scientific papers, magazines and textbooks.

Organisational Structure

The scope of work at the Faculty covers the following units: Dean’s office, Departments and Experimental fields.

The Dean's office (dean + 3 vice deans) and secretariat with accompanying services fulfil the operational management tasks. The Dean’s office deals with legal, analytical, financial - accounting, librarian, students’ and other administrative and technical work. Within the Dean’s office there are: Students’ service and the library with 4400 books and 1270 different serial publications. There are two organizational levels: educational and research. The FANS consists of eight departments that represent its main teaching, research and faculty - enterprise cooperation units: Field and Vegetable Crops; Pomology, Viticulture, Horticulture and Landscape Architecture; Plant and Environment Protection; Animal Science; Agricultural Engineering; Water Management; Agricultural Economics and Rural Sociology and Veterinary Medicine. Each department is composed of chairs, institutes, laboratories and experimental fields. Eight departments comprise of 13 chairs, eight institutes, 23 laboratories, six research centres and five experimental stations (400ha). There are 360 employees at the Faculty the structure of which is as follows: 92 full professors, 29 associate professors, 33 assistant professors, 68 assistant lecturers (Dr., MSc, and dipl. ing.), 136 administration, accountancy and technical stuff (Faculty + departments) and other employee categories. The Faculty organizes the basic, master’s, specialist’s and doctor’s studies. The basic studies are organized in the following courses: Field and Vegetable crops, Animal Science, Fruit Growing and Viticulture, Horticulture, Phytomedicine, Agriculture Engineering, Water Management, Agricultural Economics, Veterinary medicine, Comprehensive Course, Landscape architecture, Organic Farming and Agroecology and Environmental Protection.

Presentation of Study Programmes

Study Programmes

Undergraduate study programmes: All undergraduate study programmes at the FANS are four years lasting. They are organized at the FANS departments. Except some professors engaged from other faculties of the University of Novi Sad the undergraduate study programmes are organized independently. The study programmes are planned as academic-research study programmes. Since 2005/06 academic year and introduction of study programmes organized according to European higher education system undergraduate study programmes are active at the FANS:

- Department: Field and Vegetable Crops (with 2 study programmes: Field and Vegetable Crops and Organic farming)
- Department: Pomology, Viticulture, Horticulture and Landscape Architecture (with 3 study programmes: Pomology and Viticulture, Horticulture and Landscape Architecture)
- Department: Plant and Environment Protection (with 2 study programmes: Phytomedicine and Agroecology and environment protection)
- Department: Animal Science (study programme Animal Husbandry)
- Department: Agricultural Engineering (study programme Agricultural Engineering)
- Department: Water Management (study programme Water Management)
- Department: Agricultural Economics and Rural Sociology (with 2 study programmes: Agricultural Economics and Agro-tourism and rural development)

Graduate (master) study programmes: Since 2006/07 academic year, graduate (master) study programmes are organized in accordance with the European higher education system. The FANS designed and approved 15 master study programmes. In 2007 the first graduated masters were promoted. The programme are designed and predominantly realized as academic/research programmes.

Department: Field and Vegetable Crops (with 4 study programmes: Field Crops Growing (five modules), Plant Breeding and Seed Production, Plant and Soil and Organic Farming)

- Department: Pomology, Viticulture, Horticulture and Landscape Architecture (with 3 study programmes: Pomology and Viticulture (two modules), Horticulture and Landscape Architecture)
- Department: Plant and Environment Protection (study programme Phytomedicine (five modules))
- Department: Animal Science (study programme Animal Husbandry)
- Department: Agricultural Engineering (study programme Agricultural Engineering)
- Department: Water Management (with 2 study programmes Water Management and Eater Protection)
- Department: Agricultural Economics and Rural Sociology (study programme Agricultural Economics)
- Department: Veterinary Medicine (study programme Veterinary Medicine (Integrated studies)).

There are also master programs raised as a result of Tempus projects:

- Water Management-LOLAqua
- Agricultural Extension Service
- Phytomedicine-IPM

Doctoral study programmes are:

- study programme Agronomy
- study programme Agro-economy
- study programme Animal Production
- study programme Veterinary Medicine

All of them are planned as three years programmes, with possibilities to increase the research period if objective conditions dictate that. The basic idea of the doctoral study programmes are integrated

study and research, which means that doctoral candidates could be enrolled only if they could be at the same time engaged at on-going research project(s).

International Accreditation of Study Programmes

In the frame of the Tempus projects LOLAqua (JEP 40071-2005) and IPM (JEP 158875-2009) there are international M.Sc. courses

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

The study system basically enables the students to choose a subject at another faculty. For the time being it is possible to achieve it within running Tempus, Erasmus and Ceepus projects.

Procedure of recognition of completed study responsibilities at another faculty or in another country

The procedure is based on the University low.

Recognition of Diplomas of Other Faculties from Abroad

Recognition of diplomas of other faculties from abroad is a question regulated by relevant law of high education. Recognition of diplomas is going through University (recognition of the foreign HE institution, and educational level for employment purposes) or Faculties (recognition of educational level necessary for further studying).

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes: duration: 4 years			
Field and Vegetable Crops	186	159	168
Pomology and Viticulture	95	105	125
Phytomedicine	248	271	258
Horticulture	86	93	85
Landscape Architecture	236	237	218
Agricultural Economics	210	237	243
Agroecology and Environmental Protection	42	67	95
Animal Husbandry	144	179	173
Agricultural Engineering	66	62	69
Water Management	66	71	71
Agro-tourism and Rural Development	27	66	94
TOTAL:	**1406**	**1547**	**1599**
Postgraduate study programmes: duration: 1 year			
Field Crops Growing (five modules)	9	6	10
Plant Breeding and Seed Production	9	9	7
Plant and Soil	2	6	6
Organic Farming	2	5	-
Animal Husbandry	12	14	15
Pomology and Viticulture (two modules)	11	11	14
Horticulture	5	5	15
Landscape Architecture	-	-	19
Phytomedicine (five modules)	19	25	25
Agricultural Engineering	1	5	14
Water Management	7	6	3
Agricultural Economics	15	22	32
Veterinary Medicine (Integrated studies)	300	293	298
TOTAL:	**392**	**407**	**458**
Doctoral study programmes; duration: 3 years			
Agronomy	8	13	16
Agro-economy	1	4	11
Animal Production	1	2	6
Veterinary Medicine	6	7	7
TOTAL:	**16**	**26**	**40**

Additional explanation: Undergraduate study program - Data present enrolled students in all four years.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes: duration: 4 years			
Field and Vegetable Crops	35	37	24
Animal Husbandry	32	38	18
Pomology and Viticulture	20	33	24
Phytomedicine	50	54	48
Agricultural Engineering	20	14	19
Water Management	11	5	1
Agricultural Economics	39	73	43
Horticulture	23	27	16
Veterinary Medicine (Integrated studies)	38	28	47
Landscape Architecture	-	-	15
TOTAL:	**268**	**309**	**255**
Postgraduate study programmes: duration: 1 years			
Field Crops Growing (five modules)	1	1	4
Plant Breeding and Seed Production	1	2	6
Plant and Soil	-	1	-
Organic Farming	-	-	2
Animal Husbandry	5	4	6
Pomology and Viticulture (two modules)	1	-	1
Horticulture	1	2	1
Landscape Architecture	-	-	-
Phytomedicine (five modules)	-	3	8
Agricultural Engineering	1	2	1
Water Management	-	1	5
Agricultural Economics	-	5	9
Veterinary Medicine (Integrated studies)	3	3	-
TOTAL:	**13**	**24**	**43**
Doctoral study programmes: duration: 3 years			
	-	-	-
TOTAL:	**-**	**-**	**-**

International Exchange

International exchange of professors and researchers:

Professors from few European Universities are invited lecturers on the basic and master study programme at landscape planning. Besides that, individual visits of professors from all around the world are organized, mostly as activities under on-going cooperative research projects.

Some of the research and teaching staff of the FANS completed their master and Ph.D. researchers at the universities in EU Universities and Norwegian University of Life Sciences (Norway).

International exchange of students

There is exchange of students in the frame of Erasmus (BASILEUS) and Ceepus projects. In addition there are some short study visits.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	5	7	3	5
Researchers	7	9	1	-
professors	6	5	4	12
TOTAL:	**18**	**21**	**8**	**17**

International exchange in the future

Promote and support multi-disciplinary and cross-disciplinary research linkages, locally within Faculty and University and with external partners in region, Europe and world-wide, linking to international centres of excellence.

Person responsible for international exchange:

Prof. Dr Branko Konstantinović, Vice-Dean for International Cooperation and Prof. Dr Jovan Crnobarac, Ceepus projet coordinator

E-mail: brankok@polj.uns.ac.rs; jovanc@polj.uns.ac.rs

Telephone: +381 21 485 3210

SLOVENIA

Country's Education System

Access requirement to academic and single cycle masters' study programs is the *matura* examination, *final examination* prior to 1 June 1995, or the *vocational matura* examination plus an *additional examination* for one general matura subject. Access requirement to higher professional study programs is the *matura* examination, the *vocational matura* examination or the *final examination* under the four-year secondary school or equivalent program.

Candidates that completed a suitable education abroad can also be enrolled. Non-Slovenian candidates have to submit their certificate of education. For those candidates whose mother tongue is not Slovenian, at least basic knowledge of Slovenian will be acquired.

If the interest exceeds the number of open positions, the candidates will be ranked according to following two criteria: Candidate's final grade at the matura, vocational matura or final examination (60%) and Overall achievement in the third and the fourth year of the secondary school (40%).

The general access requirement for masters' study programs is a completed *first cycle study program*. Specific access requirements are determined by individual study programs. Study programs from corresponding fields of study must be determined, while candidates who graduated from other fields of studies are required to acquire from 10 to 60 additional bridging credit points, depending on the difference between the fields of studies. The general access requirement to doctoral study programs is a completed *second cycle study program*. *Transfer*. Transfers between study programs of the same cycle as well as between short-cycle higher education and first-cycle study programs are possible when meeting certain requirements.

Act on Higher Education (Official Gazette of RS, No. 63/04 and Official Gazette of RS, No. 94/06) represents the legal framework for the introduction of the three-cycle higher education in accordance with the Bologna declaration. The *first cycle* study programs are *academic* and *professional study programs*. Their duration is determined by years (three to four years) and credit points (180 to 240 CP). 60 credit points may be obtained per study year, 1 credit point consists of 25 to 30 hours of a student's work; there are from 1500 to 1800 hours per year in total. The *second cycle* study program is a *master study program* (master degree). It consists of 60 to 120 credit points and lasts from one to two years. The duration of an individual master study program must be planned with regard to the duration of the first cycle study program. The total duration in the same field of study must not exceed five years (3+2, 4+1). The *third cycle* is *doctoral study program*. It lasts for three years; study requirements consist of 180 credit points, two thirds of which shall be acquired by research.

General information on education system in Slovenia could be found on the website: http://www.eurydice.si/images/stories/Diagram_Tatjana_Plevnik__1564.pdf.

College and Higher Education Organisations in the Field of Agriculture in the Country

The studies are provided by public and private universities and their members – faculties and professional colleges. Universities and faculties may provide all types of study programs, while professional colleges may provide, as a rule, the first-cycle professional study programs, but also the second-cycle programs when meeting certain special requirements.

In Slovenia there are three higher education institutions offering study in the field of agriculture:

- University of Ljubljana, Biotechnical Faculty
- University of Maribor, Faculty of Agriculture and Life Sciences
- University of Nova Gorica, School for Viticulture and Enology

Biotechnical Faculty also cooperate with the Faculty of Mathematics, Natural Sciences and Information Technologies that is a member of the University of Primorska within the Academic Study Program Biodiversity and Mediterranean Agriculture.

UNIVERSITY OF LJUBLJANA, BIOTECHNICAL FACULTY[4]

Address: Jamnikarjeva 101, 1000 Ljubljana, Slovenia

Telephone (central office):+386 1 320 3000

E-mail (Dean's office/secretariat): dekanat@bf.uni-lj.si

Website: www.bf.uni-lj.si

Key Areas of Work

The Faculty's mission is to offer higher professional education, undergraduate and postgraduate university study programs, as well as research and professional and advisory services in the areas of living nature (biology, microbiology), agriculture, forestry and fishery (forestry, animal science, agronomy) and in closely related production technologies (wood science, food science, biotechnology). All the educational and research disciplines offered at the Biotechnical Faculty incorporate the issues of management of natural resources (soil, space, flora and fauna, water). Research and education in the area of life and nature obliges the Biotechnical Faculty to provide the professional and scientific foundations and an appropriate atmosphere in society that will enable the creation and development of a sustainable symbiotic existence between mankind and nature. Environmental renovation and protection, preservation of the natural heritage, ecological and sustainable use of natural resources, production and processing of high quality food and the use of modern biotechnology, are global challenges demanding a constant and strenuous search for the new and better and for furthering expertise that will be widely accessible and utilized in everyday life.

Scientific research at the Biotechnical Faculty comprises basic, applied and developmental work. It enables research findings and accomplishments to be widely accessible in life. Professional and advisory services, as part of the research activities, keep the staff of the Faculty informed about emerging needs and issues of practice, facilitates their participation in resolving problems and thus becoming familiar with new ideas that can be successfully applied in teaching and research. A circle is created: basic research – applied research – education – professional work and development. Such an approach requires close linkage with production in order to meet the practical needs of individual professions and those responsible for social development. With a variety of educational and research programs, the Biotechnical Faculty encourages inter-disciplinary and multi-disciplinary approaches to education and integral research into developmental issues that are becoming more and more complex and influenced by the interests of various professions. In addition, it tries to promote and advance the

[4] With exception of chapter Students and Graduates information on University of Ljubljana, Biotechnical faculty base on STEVANOVIĆ, Marjeta (ed.). *Information guide : www.bf.uni-lj.si*. Ljubljana: Biotehniška fakulteta, 2010. 56 pp.

highest quality, internationally recognized scientific and professional cooperation, openness, and a reputation for excellence. The international competitiveness of the Faculty guarantees the quality of its educational, research and developmental activities.

Organisational Structure

The Biotechnical Faculty is part of the University of Ljubljana, which was established in 1919 on the foundations of a long pedagogic tradition. The University of Ljubljana is the central and largest educational institution in Slovenia. With over 50,000 undergraduate and postgraduate students participating in more than 300 different undergraduate and postgraduate study programs, it is also among the largest universities on a world scale. It employs approximately 6,000 higher education teachers, researchers, assistants and administrative staff in 23 faculties and 3 academies of art. The Biotechnical Faculty had 617 employees in December 2010. According to European University Association (EUA) reviews, the University enjoys an excellent academic reputation; it has qualified teachers and motivated students. It has the support of its external partners and well developed international cooperation in the spheres of student exchange and research. The University of Ljubljana is ranked among the top 500 universities in the world according to ARWU Shanghai, Times THES-QS and WEBOMETRICS.

Organizational structure of BF is corresponding to the main research activities. Thus, the Faculty consists of seven research departments,that are divided into many chairs and special units:

Department of Agronomy

- Chair of Applied Botany, Ecology, Plant Physiology and Informatics
- Chair of Phytomedicine, Agriculture Mechanization, Crop Science, Grazing Management and Grassland
- Chair of Fruit Growing, Viticulture and Vegetable Growing
- Chair of Agrometeorology, Agricultural Land Management, Economics and Rural Development
- Chair of Genetics, Biotechnology, Statistics and Plant Breeding
- Chair of Soil Science and Environmental Protection

Department of Biology

- Chair of Biochemistry
- Chair of Botany and Plant Physiology
- Chair of Ecology and Environmental Protection
- Chair of Molecular Genetics and Microbiology
- Chair of Physiology, Anthropology and Ethology
- Chair of Zoology

Department of Forestry and Renewable Forest Resources

- Chair of Silviculture
- Chair of Forest Techniques and Economics
- Chair for Renewable Forest Resources

Department of Landscape Architecture

- Chair for landscape planning and design

Department of Wood Science and Technology

- Chair for mechanical wood working technologies
- Chair for wood technology
- Chair for management and economics of companies and product development
- Chair for adhesive bonding, wood composites and surface finishing

Department of Animal Science

- Chair for genetics, animal biotechnology and immunology
- Chair for cattle, horse, small ruminants and poultry breeding, aquaculture, ethology and sustainable agriculture

- Chair for agricultural economics, policy and law
- Chair for nutrition
- Chair for microbiology and microbial biotechnology
- Chair of dairy science
- Chair for pig production, biometry and selection

Department of Food Science and Technology

- Chair of Biochemistry and Food Chemistry
- Chair of Biotechnology, Microbiology and Food Safety
- Chair of Microbiology
- Chair of Technologies, Nutrition and Enology
- Chair of Meat Technology and Food Assessment

Each department is divided into many chairs and special units. Administration of the Faculty is represented by Dean, Vice Dean for Science and Research and Vice Dean of Academic Affairs. Secretariat consists of the Secretary of the Faculty, Assistant Secretaries of the Faculty in the area of finance, research area and international relations, human resources and academic affairs. Faculty Bodies are Senate, Financial Board, Commission on Human Resources, Commission for Undergraduate Studies, Commission for Doctoral Studies, Commission for Science and Research, Commission for the Self-Assessment of the Quality of Biotechnical Faculty, Tutorial Commission and Disciplinary Commission for undergraduate students.

Presentation of Study Programmes

Study Programmes

The Faculty of Agronomy as the precursor of the actual Biotechnical faculty was founded in the Ljubljana in 1947. When the Department of Forestry was established in 1949, the institution changed its name to the Faculty of Agronomy and Forestry. With the introduction of the Veterinary Medicine Study Program, the former Faculty of Agronomy and Forestry became the Faculty of Agronomy, Forestry and Veterinary Medicine. In 1960, a new program was initiated at the Department of Agronomy, the study of animal science, today known as the Study Program of Agriculture – Animal Production, conducted at the Department of Animal Science.

In the year after the Faculty of Natural Science and Mathematics was re-organized, the Study Program of Biology became part of studies at the Faculty of Agronomy, Forestry and Veterinary Medicine and, in 1961, the Faculty obtained its present name. In the autumn of 1961, the Study Program of Food Science and Technology was introduced as a discipline at the Department of Agronomy and in 1965 it became an independent program at the Department of Food Science and Technology.

The Study Program of Agronomy has included landscape management since 1950 but the Postgraduate Program Study in Landscape Architecture only began in 1972. In 1976, the Undergraduate Study Program of Landscape Architecture also started. The Forestry Study Program was divided in the third academic year into a Wood Science and Technology Course and a Forestry Course. In 1968, an independent Wood Science and Technology Program began, so a Department of Forestry and Wood Science was established. Two independent departments were formed in 1975 – the Department of Forestry and the Department of Wood Science and Technology.

In 1990, the Study Program of Veterinary Medicine went its own way at the independent Faculty of Veterinary Medicine. The youngest fields of study are the Study Program of Microbiology, which has been on the curriculum of the Biotechnical Faculty since 1993 and Biotechnology, which started in the academic year 2004/2005.

Study programs adapted to the Bologna process were introduced in the 2007/2008 academic year. In addition to academic study programs, the Faculty organizes professional study programs in the fields of Biology, Biotechnology, Forestry and Renewable Forest Resources, Agriculture-Agronomy, Agriculture-Animal Production, Landscape Architecture, Wood Science, Microbiology, and Food

Science and Nutrition. The programs are evaluated according to the European Credit Transfer System – ECTS, with 30 ECTS credits for a semester.

The study programs are provided as lectures, laboratory practicals, seminars and field work. The majority of programs provide electives, particularly in the second and third year of study. A student completes the study after he/she has fulfilled all the requirements determined by the program. Academic Study Programs last three years (6 semesters) and encompass the following fields: biology, biotechnology, forestry and renewable forest resources, agriculture – agronomy, agriculture – animal production, landscape architecture, wood science, microbiology, and food science and nutrition.

Professional Study Programs last three years (6 semesters), one semester is for practical education experience. These programs cover the following fields: forestry, agriculture – agronomy and horticulture, agriculture – animal husbandry, and technologies of wood and fibre composites. All study programs are described in more detail on the Faculty's web site: www.bf.uni-lj.si.

There are altogether nine **academic study programs** and four **professional study programs** provided by the Faculty. The Biotechnical Faculty offers fifteen **master study** programs:

- Agronomy,
- Biotechnology,
- Ecology and Biodiversity,
- Economics of Natural Resources,
- Forestry and Management of Forest Ecosystems,
- Horticulture,
- Landscape Architecture,
- Wood Science,
- Microbiology,
- Molecular Biology,
- Nutrition,
- Structural and Functional Biology,
- Protection of the Natural Heritage,
- Animal Science,
- Food Science.

The Biotechnical Faculty offers an **Interdisciplinary Doctoral Program** in Biosciences in the following areas:

- Agronomy,
- Bioinformatics,
- Biology,
- Biotechnology,
- Economics of Natural Resources,
- Horticulture,
- Landscape Architecture, Wood and Biocomposites,
- Nanosciences,
- Nutrition,
- Technical Systems in Biotechnics,
- Management of Forest Ecosystems,
- Protection of the Natural Heritage,
- Animal Science,
- Cell Sciences, and
- Food Sciences.

The interdisciplinary doctoral study program is a joint project of four faculties of the University of Ljubljana. It started in the academic year 2009/2010. In partnership with other faculties of the University of Ljubljana, the Biotechnical Faculty provides an:

- Interdisciplinary Doctoral Study Program in Biomedicine,
- Interdisciplinary Doctoral Study Program in Environmental Protection and
- Interdisciplinary Doctoral Study Program in Statistics.

International Accreditation of Study Programmes

Fédération Européenne d'Associations Nationales d'Ingénieurs - European Federation of National Engineering Associations is a federation of professional engineers that unites national engineering associations from 31 European countries. FEANI maintains an INDEX listing the institutions of engineering higher education in European countries represented within FEANI, and their engineering programs, which are all recognized by FEANI as fulfilling the mandatory education requirements for the EUR ING title. On the Biotechnical Faculty the academic study programs of the Forestry and renewable forest resources, Agriculture - agronomy, Agriculture - animal production, Landscape architecture, Wood science and Food science and nutrition are represented within FEANI. Also professional study program Technologies of wood and fibre composites maintains FEANI INDEX.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

The European Credit Transfer System (ECTS) is applied in all study programs. Thus, the study programs offer the possibility of selecting courses (elective courses). Students can choose from courses either within the chosen study program or in other study programs offered by other university members or other higher education institutions in Slovenia and abroad.

Procedure of recognition of completed study responsibilities at another faculty or in another country

Transfer is possible from all comparable accredited academic and professional study programs in the field of biotechnical sciences if a student meets the requirements for admission to the Study Programs in all cycles. In approving a transfer and determining any additional requirements, the Commission for undergraduate (Bachelor) or postgraduate (Master) specifies which courses can be confirmed or the extent that they can be confirmed (but a minimum of 10 credits must be obtained in related compulsory or elective units of the former study program) and specifies additional credits required. On the basis of this decision, the Commission specifies the year into which a student may transfer.

Recognition of Diplomas of Other Faculties from Abroad

Procedure for recognition and assessment of education Recognition for the purpose of continuing education in the Republic of Slovenia is a procedure in which the holder of a foreign certificate or diploma is recognised the right to continue education in the Republic of Slovenia by means of a written order. The procedure begins at candidate request, which needs to be submitted on the prescribed form to the school, another educational organisation or higher education institution in the Republic of Slovenia where they wish to continue the education. Recognition for the purpose of employment in the Republic of Slovenia is a procedure in which, by means of a written order, it is determined on which level the foreign education of the individual making the request is placed in the Slovenian school system, which area or field it belongs to with regard to the finished foreign education program, if this is given on the certificate or diploma, the title obtained abroad in the course of vocational or professional education, and the professional or academic title. The procedure needs to be submitted to the competent Ministry (Ministry of Higher Education, Science and Technology).

Students and Graduates

The total number of graduates from the foundation of the Biotechnical faculty in 1953 until the year 2010 was 13.967. Before 1994 2.366 students finished in 2-year professional study programs, 1.341 in 3-year professional study programs and 10.038 in academic study programs. In the study year 2010/2011 first generation of 206 students finished the first cycle academic study programs and 16 professional study programs. The postgraduate study programs before the reform finished 36 specialists of post graduate study programs, that last 2 years. Master of science study programs finished 1.004 students and 802 students finished doctoral study programs.

According to the regulation adopted by the Ministry of Science and Technology of in the Higher Education Act (Official Gazette of RSNo. 119/06), all students at all levels, who attended the old

program studies, have to fulfil their obligations due to 2015/2016. Unless they do so, they will have to switch to the adequate level of the Bologna system.

Enrolled students in an individual year (just full-time enrolled students)

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
Academic study programmes	906	1.219	1.325
Professional study programmes	421	546	594
TOTAL:	**1.327**	**1.765**	**1.919**
Postgraduate study programmes (2nd Bologna cycle): duration:			
Postgraduate study programmes	-	-	272
TOTAL:	**-**	**-**	**272**
Doctoral study programmes (3rd Bologna cycle): duration:			
Interdisciplinary Doctoral Study Program in Biosciences	-	60	145
TOTAL:	**-**	**60**	**145**

Additional explanation: Students were enrolled in postgraduate study programs (2nd Bologna cycle) first time in the study year 2010/11 and in the new doctoral study program in the year 2009/10.

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
Academic study programmes	-	-	216
Professional study programmes	-	-	16
TOTAL:	**-**	**-**	**222**
Postgraduate study programmes (2nd Bologna cycle): duration:			
Postgraduate study programmes	-	-	-
TOTAL:	**-**	**-**	**-**
Doctoral study programmes (3rd Bologna cycle): duration:			
Interdisciplinary Doctoral Study Program in Biosciences	-	-	-
TOTAL:	**-**	**-**	**-**

International Exchange

International exchange of professors and researchers:

The Biotechnical Faculty promotes international cooperation. It is currently very well developed and promotes the faculty's reputation in the world. International partnership is based on cooperation between individual professors and researchers, the exchange of students and professors, and the exchange of scientific publications. In collaboration with international research units, both teaching and research staff are active in international scientific and professional organizations. Bilateral collaboration on the basis of interstate agreements and within the framework of European Union programs is also very extensive. Researchers from our faculty are partners or coordinators in 18 COST

projects, 44 bilateral projects and in 15 other international projects. We are partners in 7 projects of the 6th Framework Program and in 15 projects of the 7th Framework Program. Participation in the Erasmus Program, which is part of the European Union Lifelong Learning Program, is primarily of high importance for students. Through participation in the Erasmus Program, an undergraduate or postgraduate student can complete some of his/ her academic obligations at one of the universities in the European Union with which the Biotechnical Faculty has an agreement. A student spends a period of three months to one year at a chosen faculty, attends study courses there and fulfils certain academic requirements, including exams. The courses that a student is obliged to attend are determined by the professors of the two faculties. The host institution, i.e., the receiving institution, issues a certificate on the obligations fulfilled, and the home institution, i.e., the sending institution, recognises the certificate. Approximately 40 students from the Biotechnical Faculty study abroad each year within the framework of the Erasmus Program. More and more foreign students participate in study programs at the Biotechnical Faculty each year.

International exchange of students

Participation in the Erasmus Program, which is part of the European Union Lifelong Learning Program, is primarily of high importance for students. Through participation in the Erasmus Program, an undergraduate or postgraduate student can complete some of his/her academic obligations at one of the universities in the European Union with which the Biotechnical Faculty has an agreement. A student spends a period of three months to one year at a chosen faculty, attends study courses there and fulfils certain academic requirements, including exams. The courses that a student is obliged to attend are determined by the professors of the two faculties. The host institution, i.e., the receiving institution, issues a certificate on the obligations fulfilled, and the home institution, i.e., the sending institution, recognises the certificate. Approximately 40 students from the Biotechnical Faculty study abroad each year within the framework of the Erasmus Program. More and more foreign students participate in study programs at the Biotechnical Faculty each year. List of Erasmus bilateral agreements is attached. Most students go on exchange in Spain (Universidad Politecnica de Valencia) and Munich (Technische Universitat Muenchen). Other interesting countries for outgoing students are as follows: Portugal, The Netherlands and Sweden. The highest number of incoming students is from Spain (Universidad Castilla la Mancha, Albacete) and Turkey (from different Turkish universities).

Beside Erasmus Program most incoming students come on exchange to our faculty through the Erasmus Mundus External Project – BASILEUS and CEEPUS program. Majority of these students are from ex-Yugoslav countries, e.g. Serbia, Croatia and Bosnia and Herzegovina.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	31	46	19	30
Researchers and professors	75	81	43	37
TOTAL:	**106**	**127**	**48**	**67**

International exchange in the future

The Biotechnical Faculty will promote international cooperation in the future, as well.

International partnership will base on cooperation between individual professors and researchers, the exchange of students (all three cycles) and professors, and the exchange of scientific publications.

In collaboration with international research units, both teaching and research staff will be active in international scientific and professional organizations. We shall enhance bilateral collaboration on the basis of interstate agreements and within the framework of European Union programs.

Person responsible for international exchange:

Marjeta Stevanović, PhD, Head of Research, Development and International Office

E-mail: marjeta.stevanovic@bf.uni-lj.si

Telephone: +386 1 3203 029

UNIVERSITY OF MARIBOR, FACULTY OF AGRICULTURE AND LIFE SCIENCES

Address: Pivola 10, 2311 Hoče, Slovenia

Telephone (central office): +386 2320 9000

E-mail (Dean's office/secretariat): tajnistvo.fkbv@uni-mb.si

Website: http://www.fk.uni-mb.si/fkbv/

Key Areas of Work

Faculty of Agriculture and Life Sciences at University of Maribor is scientific, research and educational institution and is due to its integration work and its successfulness, competitive to European and world-wide Universities. As University member, the faculty represents the progress of science in many fields of agriculture resulting in good bibliography (high-impact original scientific papers, conference contribution and patents).

The location of the faculty, in the centre of the most important agricultural region in Slovenia, facilitates a good combination of theory and practice and enables the application of academic knowledge to practical work.

The faculty has been entrusted with the management of an agricultural estate "Pohorski dvor and Meranovo", on which the Maribor University Agricultural Centre has been established. It is located at the foot of Pohorje about 2 km from Maribor and covers 60 hectares (ha) of arable land, 45 ha of orchards, 20 ha of vineyards, 22 ha of meadows and pastures, 240 ha of forests and 8 ha of botanical garden area. Research and practical work activities are carried out there.

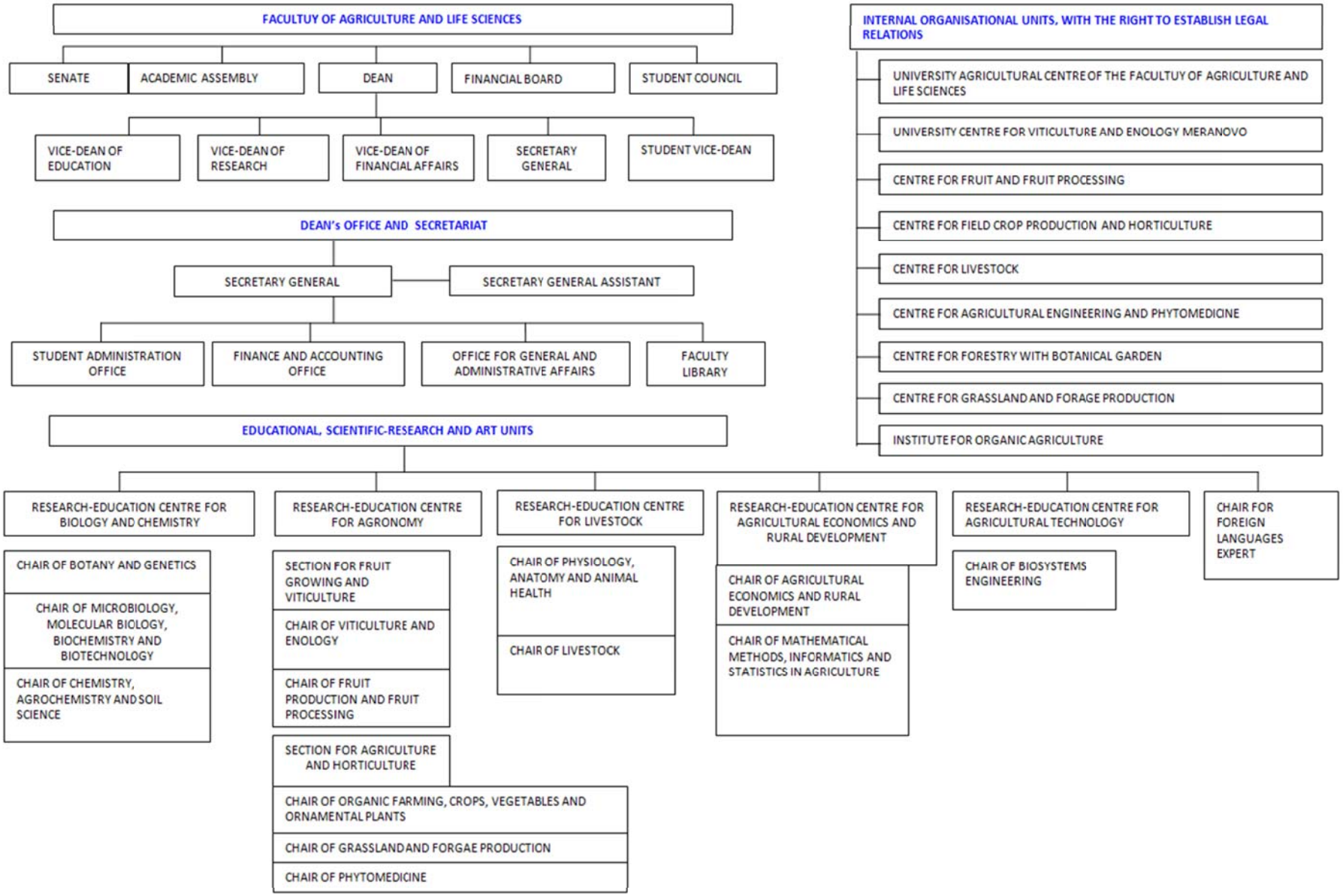
Organisational Structure

The Faculty of Agriculture and Life Sciences has the following organizational units: the governance of the faculty, the secretariat, research-educational centres and internal organisational units with the right to establish legal relations.

The Dean is the professional head who directs and represents the faculty. The governing bodies of the faculty are the Dean, the Senate, the Academic Assembly, the Financial board and the Students' Council.

The highest governance body is the Senate whose members are faculty professors along with student representatives. The Academic Assembly (all of the faculty's teaching staff plus representatives of the Student Council) provides input into the decision-making of the Dean and the Senate. The Academic Assembly elects the members of the Senate of the faculty, the members of the Financial board, proposes the candidates for the Dean to the Senate and elects the Dean. The Financial board decides on financial matters. The Students' Council is the body of the students of the faculty.

The faculty has five research-education centres, which represent basic organizational units for pedagogical and scientific research work. The Library is a unit of the secretariat of the faculty. See organisational chart below.


FACULTUY OF AGRICULTURE AND LIFE SCIENCES
SENATE
ACADEMIC ASSEMBLY
DEAN
FINANCIAL BOARD
STUDENT COUNCIL
VICE-DEAN OF EDUCATION
VICE-DEAN OF RESEARCH
VICE-DEAN OF FINANCIAL AFFAIRS
SECRETARY GENERAL
STUDENT VICE-DEAN
DEAN's OFFICE AND SECRETARIAT
SECRETARY GENERAL
SECRETARY GENERAL ASSISTANT
STUDENT ADMINISTRATION OFFICE
FINANCE AND ACCOUNTING OFFICE
OFFICE FOR GENERAL AND ADMINISTRATIVE AFFAIRS
FACULTY LIBRARY
EDUCATIONAL, SCIENTIFIC-RESEARCH AND ART UNITS
RESEARCH-EDUCATION CENTRE FOR BIOLOGY AND CHEMISTRY
CHAIR OF BOTANY AND GENETICS
CHAIR OF MICROBIOLOGY, MOLECULAR BIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
CHAIR OF CHEMISTRY, AGROCHEMISTRY AND SOIL SCIENCE
RESEARCH-EDUCATION CENTRE FOR AGRONOMY
SECTION FOR FRUIT GROWING AND VITICULTURE
CHAIR OF VITICULTURE AND ENOLOGY
CHAIR OF FRUIT PRODUCTION AND FRUIT PROCESSING
SECTION FOR AGRICULTURE AND HORTICULTURE
CHAIR OF ORGANIC FARMING, CROPS, VEGETABLES AND ORNAMENTAL PLANTS
CHAIR OF GRASSLAND AND FORGAE PRODUCTION
CHAIR OF PHYTOMEDICINE
RESEARCH-EDUCATION CENTRE FOR LIVESTOCK
CHAIR OF PHYSIOLOGY, ANATOMY AND ANIMAL HEALTH
CHAIR OF LIVESTOCK
RESEARCH-EDUCATION CENTRE FOR AGRICULTURAL ECONOMICS AND RURAL DEVELOPMENT
CHAIR OF AGRICULTURAL ECONOMICS AND RURAL DEVELOPMENT
CHAIR OF MATHEMATICAL METHODS, INFORMATICS AND STATISTICS IN AGRICULTURE
RESEARCH-EDUCATION CENTRE FOR AGRICULTURAL TECHNOLOGY
CHAIR OF BIOSYSTEMS ENGINEERING
CHAIR FOR FOREIGN LANGUAGES EXPERT
INTERNAL ORGANISATIONAL UNITS, WITH THE RIGHT TO ESTABLISH LEGAL RELATIONS
UNIVERSITY AGRICULTURAL CENTRE OF THE FACULTUY OF AGRICULTURE AND LIFE SCIENCES
UNIVERSITY CENTRE FOR VITICULTURE AND ENOLOGY MERANOVO
CENTRE FOR FRUIT AND FRUIT PROCESSING
CENTRE FOR FIELD CROP PRODUCTION AND HORTICULTURE
CENTRE FOR LIVESTOCK
CENTRE FOR AGRICULTURAL ENGINEERING AND PHYTOMEDICINE
CENTRE FOR FORESTRY WITH BOTANICAL GARDEN
CENTRE FOR GRASSLAND AND FORAGE PRODUCTION
INSTITUTE FOR ORGANIC AGRICULTURE

Presentation of Study Programmes

Study Programmes

FIRST CYCLE DEGREES (in accordance with Bologna process guidelines)

AGRICULTURE: The programme is uniform in first two years. In 3rd academic year each student should decide either for plant or livestock production studies. The basic aim of the programme is to provide students with all the necessary education and experience demanded by modern times in such a way as to allow graduated students to work in any branch of agriculture.

ORGANIC AGRICULTURE: The study programme offers a professional knowledge for a successful work with capacity to adapt to new needs and trends in agriculture, where there is increasing emphasis on introduction of environmentally and consumer friendly production of food, preservation of biotic variety, settlement of rural areas, etc.

VITICULTURE, ENOLOGY AND FRUIT-GROWING: The programme takes into account the specific issues of these branches as well as natural predispositions for growing vine and fruit plants. New introductions to the programme include the topics of grape and fruit processing, (storage and processing of fruit, equipment for production of wine and fruits, sensory development, wine analysis, etc.)

ANIMAL SCIENCE: This study gives professional knowledge in the management of animal production in a naturally and ethically responsible way. Moreover, knowledge is extended in the specialised field of livestock production to the fields of physiology and etology of animals, nutrition of domestic animals, breeding technologies (cattle production, pig production and poultry sector, sheep and goats, horse breeding, etc.), health of domestic animals, selection methods and processing of meat and milk.

AGRONOMY, ORNAMENTAL PLANTS, VEGETABLE AND FIELD CROPS: The study programme enables not only acquisition of necessary fundamental knowledge in the field of environmental protection, modern techniques of production and marketing, but also of basic knowledge about safe food from field crops as well as about production and marketing of ornamental plants.

BIOSYSTEM ENGINEERING: The aim of the study programme is to provide experts with know-how for solving multi-disciplinary mechanical and biological engineering problems in relation to the environment, natural resources as well as production, processing, storage, use and recycling of biological products. The candidates can acquire comprehensive technical knowledge in agriculture by independently selecting mandatory modules in the field of livestock production or cultivation of land, including either horticulture and ornamental plants or production and viticulture.

AGRIBUSINESS MANAGEMENT AND RURAL DEVELOPMENT: The contents of the study programme includes knowledge of the most important courses in agricultural economics, management and administration of agricultural holdings, marketing management, rural development and specific courses in the field of growing and processing healthy and high-quality food. Graduated students successfully combine technological know-how acquired from selected modules in the field of agronomic and livestock technology with that of management and economics. Further on, the programme provides key knowledge in the fast developing field of rural development.

SECOND CYCLES DEREES (in accordance with Bologna process guidelines)

AGRICULTURAL ECONOMICS: The aim is to qualify experts with key knowledge in agricultural economics and related disciplines. A comprehensive training in principles of agricultural economics is supplemented by knowledge of different management skills (e.g. evaluation of economic projects, decision and informatics), agricultural policy and rural development.

AGRICULTURE: Students are provided with sound scientific foundation at high academic level for careers in different fields of agriculture: bio-molecular techniques and plant protection, biosystems engineering, field crops for food and vegetable production, grassland management and forage production, livestock production, organic agriculture and viticulture and fruit production.

FOOD SAFETY IN THE AGRIFOOD CHAIN: The programme is carried out by the Faculty of Agriculture and Life Sciences in collaboration with the Faculty of Medicine. The basic objective is to offer education

at advanced level from the field of food safety in the agrifood chain, which integrates the knowledge from biotechnical sciences, upgraded by specific contents from medicinal sciences. The graduates will develop extensive skills and competences for functioning in the food production and processing sector as well as in the field of public health services, in educational settings or as public relations specialists.

THIRD CYCLE DEGREES (in accordance with Bologna process guidelines)

AGRICULTURE: The aim of doctoral study programme is to provide students with methodological foundation of scientific work at a high academic level for a broad range of future careers in different fields of agriculture.

AGRICULTURAL ECONOMICS: The aim is to deepen previous studentś knowledge and to qualify them for research work in agricultural economics, management and informatics, agricultural and food marketing, agricultural policy and rural development.

Transfers to another study programme: At the end of the first year, each student has an opportunity to continue the second year in another study programme. Transfers at the end of first year, within the undergraduate programmes in the Faculty of Agriculture and Life Sciences, may be allowed if the student fulfilled the required obligations for passing from year 1 to year 2 (45 ECTS out of 60 ECTS). Within the second year a student has to pass all the required obligations from the first year of the programme that he/she has transferred to.

Admission to the study program Agriculture (second cycle) and Agricultural Economics (second cycle) is open to domestic and foreign graduates in agriculture or closely related disciplines.

Admission to the study program Food safety in the agrifood chain (second cycle) is open to domestic graduates and to graduates from foreign universities with bachelor's degrees from the fields of natural sciences, biotechnology or medical sciences.

Admission to the study program Agriculture (third cycle) and Agricultural Economics (third cycle) is open to domestic and foreign graduates. The applicants must hold a master’s degree or an equivalent degree in agriculture or related disciplines.

International Accreditation of Study Programmes

At the moment we do not have a study programme with international accreditation.

The Possibility of Pursuing a Part of Study Responsibilities at another Faculty Abroad

Students are allowed to choose subjects taught at another faculty. They can choose subjects at the partner institutions with which we have signed bilateral agreements: Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Albania, Botswana, Croatia, Denmark, France, Germany, India, Namibia, Netherlands, South Africa and Serbia.

Students studying at a foreign institution as part of the Socrates-Erasmus exchange programme can transfer up to 30 ECTS credits awarded at that institution in the case of one semester exchange or 60 ECTS credits in the case of a full year exchange.

Procedure of recognition of completed study responsibilities at another faculty or in another country

Prior the Learning Agreement will be signed:

The Faculty Application for Prior Approval form, available on website, should be completed and along with a detailed course description (what students are expected to know, understand, and the number of credits) forwarded to the lecturer whose course the student wants to replace. If a course description is not available or the differences in learning outcomes are too substantial, the Application for Prior Approval form is sent to the Study Commission. The final decisions are on the relevant professors involved in student exchanges or on the members of Study Commission.

In the case of agreed student mobility the home institution, the host institution and the student sign a Learning Agreement for mobility.

The host institution sends us a Transcript of Records confirming completed courses, credits gained, and the grades awarded.

The Faculty of Agriculture and Life Sciences gives full academic recognition for satisfactorily completed activities during the ERASMUS mobility period. If an applicant and the relevant professor achieved an agreement before mobility (the signed Prior Approval form), the achieved credits are automatically recognised, otherwise the exchange is mentioned in the Diploma Supplement.

Recognition of Diplomas of Other Faculties from Abroad

The applicant, a holder of a foreign qualification, who applies to study at the University of Maribor, needs to complete Obrazec N - the N form and enclose the required documentation.

The N-form (http://www.uni-mb.si/dokument.aspx?id=9742) and INSTRUCTIONS FOR COMPLETING THE N FORM – Application for recognition of education with a view to access to education (http://www.uni-mb.si/podrocje.aspx?id=431) are available on http://www.uni-mb.si/ > eng > Study at UM > Recognition for foreign qualifications. The contact for further information is janja.gracnar@uni-mb.si, Telephone + 386 2 23 55 221.

Students and Graduates

Enrolled students in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	497	559	485
TOTAL:	**497**	**559**	**485**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	55	62	88
TOTAL:	**55**	**62**	**88**
Doctoral study programmes (3rd Bologna cycle): duration:			
	17	26	29
TOTAL:	**17**	**26**	**29**

Graduates in an individual year

Level	2008	2009	2010
Undergraduate study programmes (1st Bologna cycle): duration:			
	-	9	45
TOTAL:	**-**	**9**	**45**
Postgraduate study programmes (2nd Bologna cycle): duration:			
	-	1	7
TOTAL:	**-**	**1**	**7**
Doctoral study programmes (3rd Bologna cycle): duration:			
	-	-	-
TOTAL:	**-**	**-**	**-**

International Exchange

International exchange of professors and researchers:

International exchange for professors and researchers is possible in the framework of the Erasmus programme, the bilateral agreements and the international projects. The number of incoming and outgoing professors and researchers is more or less the same. The latest exchanges took place with Norway, Finland and Austria.

International exchange of students

Faculty of Agriculture and Life Sciences has currently Erasmus bilateral agreements with 25 institutions from 16 countries that offer together more than 50 exchange places. Usually study exchanges last one semester.

Besides Erasmus bilateral agreements we have also other agreements of cooperation with 12 institutions from 11 countries (Europe, Asia, and Africa).

Since the Erasmus university charter offers also training to students, only 2 of our students decided to take advantage of this. In contrast, we accept each year 4-6 students for training or research work mainly via Erasmus or other agreements. Most of them are from France. In the last 3 years, around 45 students have participated in different Intensive programmes held in France, Germany and other countries.

Group	Persons who went abroad		Persons coming from abroad	
	2008	2009	2008	2009
Students	15	34	27	26
Researchers				
Professors	2	4	3	2
TOTAL:	**17**	**38**	**30**	**28**

International exchange in the future

EMPLOYEES: We are planning to continue exchanges within the framework of the on-going and planned international projects and bilateral agreements. We also want to maintain the number of exchanges within Erasmus programme.

STUDENTS: We would like to maintain the number of student exchanges and at the same time increase the number of outgoing postgraduate students. Furthermore we would like to increase the number of outgoing students for training purposes (undergraduate and postgraduate).

Person responsible for international exchange:

Janja Kristl, Erasmus coordinator, Klavdija Rauter – assistant

E-mail: janja.kristl@uni-mb.si, klavdija.rauter@uni-mb.si

Telephone: +386 2 320 9042, +386 2 320 9000

2.2 Research Activity of Leading Faculties of Agriculture of South-East Europe

BOSNIA AND HERZEGOVINA

UNIVERSITY OF BANJA LUKA, FACULTY OF AGRICULTURE

Research Groups and Their Key Projects in the Last Two Years

Institute for field crops and vegetables

The Institute for field crops and vegetables was established in 2005 as scientific-development institute into the Faculty of agriculture. Main goal is to do research in the area of field crops and vegetables.

Period of group's activity: 2005 onwards

Key projects since 2008 onwards:

Scientific and applicative projects:

Studying the genetic basis of improving of yield and quality of cereals in different ecological conditions. 2011-2014. Ministry of Science and technological development of the Republic Serbia.

Sustainable preservation of indigenous South East European legumes and their traditional food and feed products, SEELEGUMES, SEERA, 2010-2012.

SEE-ERA.NET PLUS: Preservation of indigenous species and traditional food products. Sustainable preservation of indigenous South Eastern European legumes and their traditional food and feed products. WP3. Molecular and conventional characterization of indigenous SEE legumes, with a description of the most important traits by both genomic tools and morphological markers. (2010-2011).

Determination of most important meadow phytocenosis in Republika Srpska. 2008-2011.

Exploring, collecting and characterizing the local forms of industrial crops from SEEDNet area. 2009-2010. South East European Development Network on plant genetic resources - SEEDNet.

The survey of attitudes and habits of consumers about fruit and healthy food (The Faculty of Agriculture Banja Luka, Approved by the Ministry of Science and Technology RS,2010).

FOCUS-BALKANS project - WP8: Consumers' attitudes, expectations and behaviours towards traditional food (2009-2010).

Biostimulator application for flower growing and for the protection of the environment, Ministry of Science of the Republika Srpska, 2010.

Standards and monitoring the production of organic products to baby food. City of Banja Luka, Department of Economics. 2009.

The structure of supply of organic products as a condition of change menus in preschools. City of Banja Luka, Department of Economics. 2009.

Collection, characterization and regeneration of local kale (Brassica oleraceae var. acephala) population germplasm from eastern Adriatic coast region for their conservation in gene banks (coordinator for RS. Assistant Professor Vida Todorović, Coordinator of Project Professor Zdravko Matotan, Croatia; 2007-2010).

Multilateral joint expedition: Collection, Characterization and regeneration of indigenous onion (Allium cepa L.) and leek (Allium porrum L.) germplasm for further ex-situ conservation (coordinator for RS Dr. Vida Todorović, Coordinator of Project Dr. Rukie Agič, Macedonia; 2007-2010).

South East European Solanaceae germplasm collection, conservation and sustainable use (coordinator for RS. Assistant Professor Vida Todorović, Coordinator of Project Prof. Dr. Astrit Baliu, Albania; 2007-2010).

For NATO/PfP Trust Fund (NTF) Programme for Assistance to redundant Military Personnel in Bosnia and Herzegovina (2009).

Embryological aspects of genotypic characterization of yielding potential of triticale (× Triticosecale Wittmack), Ministry of Science of the Republic of Srpska, 2009.

Inventorying, collecting and providing of access to flax and hemp genetic resources in the region of Southeast Europe. 2007-2008. South East European Development Network on plant genetic resources - SEEDNet.

The introduction of organic and integrated products in the diet of children Banjaluka kindergarten. City of Banja Luka, Department of Economics. 2008.

Irrigation regime of lettuce in the greenhouse. 2008.

The development of small commercial agriculture. (Ministry of Agriculture, Forestry and Water Management, Unit for the coordination of agricultural projects, consultant-providing training services of fruit and vegetable producers in the field of greenhouse production in the area of Trebinje, Ljubinje, Bileća and Berkovići, 2006-2008).

Articles:

Radic V., Gataric Dj., Djuric B. (2011) Correlation between the yield and the yield components of Lotus corniculatus L. genotypes, 46th Croatian and 6th International Symposium on Agriculture Opatija, Croatia, pp.473-476

Gataric Dj., Kovacevic Z., Radic V., Djuric B. (2011) Effect of sowing method on seed yield of grass pea (Latirus sativus L.) under the environmental conditions of Petrovo Polje, XVI Conference on biotechnology, Cacak, Serbia. Proceedings, Vol.16(18):73-78

Zecevic Veselinka, Zivancev, D., Kondic Danijela, Markovic Sretenka, Markovic. D. (2011) Effect of nitrogen to crop density of winter barley (Hordeum vulgare L). Növénytermelés Suppl.1 (60):133-136

Dardic M., Trkulja, V., Cicic Danijela, Lakic Spomenka (2010) Cultivating grafted watermelon specifics. Plant Protection Bulletin, pp.20-27

Knežević, D., Paunović, A., Kovačević, V., Danijela Kondić, Ljiljana Vuksanović (2010) Variation of yield components in rye genotypes (Secale cereale L.). Agroznanje, Vol.11(1):73-79

Komljenović, I., Marković, M., Danijela Kondić, Kovačević, V. (2010) Response of maize to phosphorus fertilization on hydromorphic soil of Bosnian Posavina area. Poljoprivreda, Vol.16 (2): 9-13

Kovacevic Z., Gataric Dj., Djuric B., Radic V. (2010) Weed flora in chamomile (Matricaria chamomilla L.) crop on the educational center Manjaca, Agroznanje, Vol. 10(3):77-83

Gataric Dj., Kovacevic Z., Djuric B., Radic V., Lakic Z. (2010) Genetic resources of forage legumes and grasses in Republika Srpska, Journal for the Improvement of Animal Husbandry, Vol.26:1-6

Danijela Kondić, Mićić, N. (2009): Microsporogenesis in triticale (× Triticosecale Wittmack). Agroznanje, Vol. 10(4): 21-29

Danijela Kondić (2009): Quantitative indicators of productivity of triticale (× Triticosecale Wittmack) in agro ecological conditions of Banja Luka. Agroznanje, Vol. 10(4): 41-49

Gataric Dj., Djuric B., Radic V., Saric M., Lakic Z., Ljeskovac G. (2009) Models for annual protein forage production in Hilly-mountainous regions, Agroznanje, Vol.10,(3):53-58

Gataric Dj., Djuric B., Radic V., Lakic Z., Kovacevic Z. (2009) Morphological and biological characteristics of grass pea (Latirus sativus L.) seed, eco-type from Petrovo Polje, Agroznanje, Vol.10, (2): 31-38

Dardic M., Dimitric, R. (2009) The role seed tuber mass and the number of sprouts in the development of generic potato stalks. Agriculture, Vol.58:30-36

Dardic M., Dimitric R. (2009) Influence of variety, seed tuber mass and number of sprouts on potato yield Agriculture, Vol.58:23-28

Trkulja V., Stojcic J., Dardic M., Kovacic Dragana (2009) Etiological study of occurrence of white rot of lettuce grown indoors. Plant Protection Bulletin, No.4:37-39

Aleksandra Govedarica- Lucic, Dardic M. (2009) Influence of sowing date, substrate and water regimes on the pheno-logical stages of growth and development cucumber. Agroznanje, Vol.10(2):5-13

Mileusnić Višnja, Branka Lazić, Vida Todorović (2009) Genetic Resources in Organic Agriculture as a Factor of Rural Development. Agroznanje, Vol.10(4):51-57

Todorović Vida, Branka Lazić, Ružica Igić, Đurovka M. (2009) The characteristics of different populations of spring onion Allium ursinum L. in the area of Republika Srpska. Proceedings, 44th and 4th International symposium on agriculture, Opatija, pp.454-458

Komljenović, I., Marković, M., Kondić Danijela (2008) Residual influences of phosphorus fertilization on maize status in potkozarje area. VII Alps Adria Workshop. Cereal Research Communications, Stara Lesna, Slovakia. pp.699-702

Dardic M., Brankovic Jovana (2008) Specific of cultivars for prestorage period of seed potato. Agroznanje, Vol.9:121-127

Dardic M., Bosancic B. (2008) Potato as a strategic agricultural product of Srpska. Academy of Science and Art of Serbian, pp.254-261

Todorović Vida, Jelica Gvozdanović-Varga, Nataša Balaban-Ćejić (2008) The Yield and Quality of Spring Garlic Cultivar Labud in Dependence of Planting Date. Agroznanje, Vol.9(2):139-145

Lazić Branka, Dardić M., Vida Todorović (2008) Organic Production Multifunctional Part of Rural Development. Agroznanje, Vol.9(4):121-127

Head of the research group: Prof. Dr. Mile Dardić, Professor

Telephone: +387 51 330 953

E-mail: mile.dardic@agrofabl.org

Institute for Fruit Growing, Viticulture and Horticulture

The Institute for fruit growing, viticulture and horticulture as very first Institute was established in 2005 as scientific-development institute into the Faculty of agriculture. Main goal of it is implementation and realization of scientific and applied research activities in the field of pomology, viticulture and ornamental plants. Important part of activities is health control of horticultural plants with the detection and characterisation and identification of the quarantine and economically important phyto-pathogenic fungi, viruses and phytoplasmas.

Period of group's activity: 2000 onwards

Key projects since 2008 onwards:

Scientific-research and applied projects:

COST action FA 0807: Integrated Management of Phytoplasma Epidemics in Different Crop Systems. 2008-2013. MC Member of the Action.

Application biostimulant in flower growing and for the protection of the environment – second phase, Ministry of Sciences and Technology of Republika Srpska, 2010-2011.

Characterization of apple local varieties (Malus × domestica Borkh.) from South East European region (2009-2010) / SEEDNet - SIDA

Collection and field evaluation of local plum (Prunus domestica) genetic resources from South East European network (2009-2010) / SEEDNet - SIDA

Identification, characterization and conservation of old and autochthonous vine varieties in Eastern European countries (2009-2010) / SEEDNet - SIDA

FP 7: FOCUS-BALKANS, Food Consumer Science in the Balkans. Frameworks, Protocols and Networks for a better knowledge of food behaviours, 2008-2011.

Control of phytoplasma diseases in different crop systems. 2011. Ministry of Civil Affairs Bosnia and Herzegovina

Program for special surveillance of fruit trees and grapevine phytoplasmas in Republic of Srpska. 2010. Ministry of Agriculture forestry and water management, Republic of Srpska

Special program of supervision of presence Phytophthora fragariae with proposal measures and GPS Coordination's map, 2010. Ministry of agriculture, forestry and water management, Republika Srpska.

South Eastern European Developing Network on Plant Genetic Resources - SEEDNet. (2005-2010) SIDA-Sweden

Anatomomorphological and histological evaluation of reproductive organs within the autochthonous grapevine cultivars Ministry of Sciences and Technology of Republika Srpska, 2008-2009.

Genetic characterization and determination of Žilavka (Vitis vinifera L.) parental cultivars by use of SSR and AFLP molecular markers Ministry of Sciences and Technology of Republika Srpska, 2008-2009.

Application biostimulant in flower growing and for the protection of the environment, Ministry of Sciences and Technology of Republika Srpska, 2008-2009.

Articles:

Miljan Cvetković, Goran Resanović, Predrag Ilić, Nikola Mićić (2011) Rodni potencijal i pomološke karakteristike klonova sorte Gala (Malus × domestica Borkh.) na području Potkozarske regije. Agroznanje Vol.11(4):45-50

Miljan Cvetković, Gordana Đurić, Budimir Bardak (2011) Sorte i podloge jabuke zastupljene u rasadničkoj proizvodnji na teritoriji Republike Srpske. Agroznanje Vol.11(3):27-32

Tomić Lidija, Ninić Petar, Cvetković Miljan (2011) Proučavanje svojstava ploda starih sorti jabuke na području Zapadne Bosne. Zbornik radova / Savetovanje o biotehnologija sa međunarodnim učešćem, Čačak. pp.353-357

Zeljković, S., Parađiković, N., Babić, T., Đurić, G., Oljača, R., Vinković, T., Tkalec, M. (2010) Influence of biostimulant and substrate volume on rooth growth and development of scarlet sage (Salvia splendens L.). Journal of Agricultural Sciences. Vol. 55(1):29-36

Stojanović, Ž., Cvetković, M., Tomić, L., Jovanović-Cvetković, T. (2010) Tržište proizvoda sa zdravstvenom i nutritivnom izjavom i perspektive u Srbiji i Bosni i Hercegovini. Zbornik radova sa prve međunarodne konferencije Bioplanet 2010. Zlatibor. pp.58-67

Mijatović, D., Ivana Radojević, Jovanović Cvetković Tatjana, Vesna Ranković. (2010): Elementi rodnosti kao parametri vrijednosti stonih sorti. Zbornik naučnih radova Beograd. Vol.16(5):79-87

Radojević Ivana, Mošić Ivana, Ranković Vesna, Jovanović Cvetković Tatjana, Ristić, M. (2010) Vinogradarstvo u okviru održive poljoprivrede. Zbornik radova druge konferencije „Održivi razvoj i klimatske promene", Niš, pp.285-291

Prađiković, N.; Zeljković, S.; Đurić. G.; Vinković, T.; Mustapić-Karlić, J.; Kanižai, G.; Iljkić, D. (2009) Rast i razvoj kadife (Tagetes erecta L.) pod utjecajem volumena supstrata i tretmana biostimulatorom. Zbornik radova 44. Hrvatski i 4. Međunarodni simozij agronoma. pp.786-790

Zeljković, S.; Prađiković, N.; Oljača, R. (2009) Uticaj biostimulatora na rast i razvoj korijena rasada stalnocvjetajuće begonije (Begonia semperflorens L.). Agroznanje, Vol.10(1):117-125

Oljača, R., Zeljković, S. (2009) Uticaj ekoloških uslova na zastupljenost stoma na listu jabuke. Agroznanje, Vol.10(1):67-73

Zeljković, S., Parađiković, N., Vinković, T., Oljača, R., Đurić. G. (2010) Nutrient content and growth of Begonia transplants (Begonia semperflorens L.) under the influence of biostimulant application. Sjemenarstvo Vol.27(1-2):77-84

Mijatović, D., Ivana Radojević, Jovanović Cvetković Tatjana, Vesna Ranković. (2009) Karakteristike rodnosti sorti Caberne sauvignon i Caberne franc u niškom vinogradarskom podrejonu. Zbornik naučnih radova Beograd, Vol.15(5):119 - 127

Pašalić, B., Gordana Đurić (2009) Osnovne pomološke karakteristike novih sorti jabuke u uslovima banjalučke regije. Agroznanje, Vol.10(1):21-31

Đurić Gordana, Tomić Lidija, Mićić, N., Cvetković, M., Radoš, Lj., Pašalić, B. (2009) Fruit Genetic Resources in Republika Srpska. Acta Agriculturae Serbica, Vol. XIV(28):31-40

Pašalić, B (2009) Tehnologija skladištenja jabučastog voća. Zbornik radova II savjetovanja "Inovacije u voćarstvu", Univerzitet u Beogradu, Poljoprivredni fakultet, pp.79-93

Đurić Gordana, Mićić N., Cvetković M., Marinković D. (2008) Savremeni sistemi gajenja trešnje. Zbornik naučnih radova Instituta PKB Agroekonomik, Vol.14(5):33-47

Đurić Gordana, Mićić N., Cvetković M., Radoš Lj., Marinković D. 2009. Aktuelni koncept intenziviranja sistema gajenja jabuke. Zbornik naučnih radova Instituta PKB Agroekonomik, Vol.15(5):13-23

Đurić Gordana, Cvetković M., Radoš Lj., Babić Jovana (2009) Analiza nivoa intenzivnosti voćarske proizvodnje na porodičnim gazdinstvima banjalučke regije. Zbornik naučnih radova Instituta PKB Agroekonomik, Vol.15(5):137-144

Mićić N., Đurić Gordana, Cvetković M. (2009) Diferencijacija ženskog gametofita kroz mikrofenofaze razvoja pojedinačnih cvetova u cvasti jabuke. Agroznanje, Vol.10(1):33-49

Mićić N., Gordana Đurić, Cvetković M., Dajana Lukić (2009) Anatomsko-histološka i hemijska svojstva organa i tkiva mladog rodnog drveta jabuke. Agroznanje, Vol.10(4):5-20

Lolić, B., Bulajić, A., Đekić, I., Vučurović, A., Đurić, G., Krstić, B. (2009) The presence of Phytophthora spp. of raspberries in Republic of Srpska, Agroznanje.

Gutiérrez-Aguirre I., Mehle, N., Delić, D., Gruden K., Mumford R, Ravnikar, M. (2009) Real-time quantitative PCR based sensitive detection and genotype discrimination of Pepino mosaic virus. Journal of Virological Methods, 106:46-55

Prađiković, N.; Bašić, D.; Vinković, T.; Đurić. G.; Zeljković, S. (2008) Uzgoj Euphorbia pulcherrima – poinsettia - Božićna zvijezda. Agroznanje, Vol.9(4):93-112

Jovanović Cvetković Tatjana (2008) Prinos grožđa kao pokazatelj kvaliteta interspecies sorti vinove loze. Agroznanje, Vol.9(1):43-53

Jovanović-Cvetković Tatjana, Mijatović D., Ivana Radojević., Vesna Ranković (2008) Uticaj sorte vinove loze na kvalitet grožđa i vina, Agroznanje, Vol.9(2)11-17

Jovanović Cvetković Tatjana, Mijatović, D. (2008) Zavisnost krupnoće grozda od položaja koljenceta po dužini lastara sorti liza, lela i zlata. Letopis naučnih radova, 1:50-58

Mijatović, D., Jovanović Cvetković Tatjana (2008) Ovisnost krupnoće grozda o položaju nodusa na rodnoj mladici. Zbornik radova 43 Croatian and 3 International Symposium on Agriculture. Opatija, pp.928-931

Jovanović Cvetković Tatjana, Mijatović, D. (2008) Privredno-tehnološke karakteristike interspecies hibrida u uslovima kutinskog vinogorja. Zbornik naučnih radova Beograd, Vol.14(5):97-104

Lidija Tomić, Nataša Štajner, Branka Javornik, Mario Leko and Nikola Mićić (2008) Characterization of Vitis vinifera L. cv. Žilavka with SSR markers. 18thEUCARPIA General Congress, 9-12 September 2008, Valencia, Spain. Proceedings, pp. 252

Head of the research group: Dr. Boris Pašalić, Assistant Professor

Telephone: +387 51 330 936

E-mail: boris.pasalic@agrofabl.org

Institute for Animal Husbandry

Institute for Animal Husbandry was established in 2003. Main activities of the Institute are: basic, developmental and applied research in livestock production, transfer of scientific and professional knowledge in these areas in practice, issuing certificates in the field of livestock production and design in this area, publishing activities (publications); preparation and audit of projects and studies; production and marketing of animal products.

Period of group's activity: 2003 onwards

Key projects since 2008 onwards:

Scientific-research and applied projects:

Promotion of sustainable growing rainbow trout (Oncorhynchus mykiss, Wal.) (2010-2012) - Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska

Genetic distance between autochthonous Busha and Gatacko Govece, Faculty of Agriculture Banja Luka for RS Ministry of Agriculture, Forestry and Water Management (2011)

Genetic Characterization of Ennobled Gatacka Busa, Faculty of Agriculture Banja Luka for RS Ministry of Agriculture, Forestry and Water Management (2010)

Research of morphometrics, productive and reproductive performance and genetic profile of Gacko cattle breed in the Herzegovina region. Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska, 2009-2010

Influence of body mass, age and ovarian activity in gilts on fertility parameters in the next cycle. Ministry of Science and Technology of the Republic of Srpska, 2009-2010

The role of the thyroid gland in the pathogenesis of fatty liver in high breed heifers, Ministry of Science and Technology of the Republic of Srpska, 2009-2010

Influence of the organic milk production on the milk nutritive value, 2008-2010

Effects of different warming period on the preservation of broiler breeder egg hatchability. Ministry of Science and Technology of the Republika Srpska, 2008-2009

Influence of different selenium sources on the feed efficiency, growth and its content in broiler meat, 2008-2009

Standardization of technology and chemical, physical and microbiological quality characteristics of autochthonous white pickled (Travnicki) and hard (Livanjski) cheese in Bosnia and Herzegovina, Project finance by Norwegian Government (2009)

Reorientation of Academic Education in Agriculture in SE Europe - Curriculum Development in Animal Breeding and Animal Husbandry, Project finance by Norwegian Government (2009)

Sustainable selection program for salmonid strains of the river Neretva (2005-2009) - Department of International Environment and Development Studies, NORAGRIC, Norwegian University of Life Sciences (UMB).

Novel and local feed components for rainbow trout (2005-2009) - Department of International Environment and Development Studies, NORAGRIC, Norwegian University of Life Sciences (UMB).

Feed restriction and compensatory growth of broiler chicken, 2007-2008

Articles:

Kralj, A, Popovic Vranjes, Anka, Drinic, Milanka, Markovic, Z, Cvetanovic, D (2011) Influence of production with organic principle on quality of milk, memoire of XVI scientific conference of biotechnologies Faculty of agriculture Cacak, Serbia.

Mirjanić, G (2011) The importance of quality nutrition of bees in order to increase the amount of pollen", 46 Scientific Meeting on Agriculture of Croatia, Opatija, 2011.

Vekić M., Perić L., Đukić-Stojčić M., Jotanović S., Bjedov S., Mohnl M. (2011) Effect of probiotics on production and quality of eggs in early phase of laying cycle, Contemporary agriculture, 59(3-4):325-331

Drinic, Milanka, Kovcin, S, Milosevic, N, Beukovic, M, Stancev, Vidica, Kralj, A, Grujicic, Dj, Jotanovic, Stoja (2010) Effect of the Withdrawal period of vitamin and trace minerals from broiler diet on bone ash content, Agroznanje, Vol. 11(1)

Jotanovic S., Vekic M., Perić L., Zikic D., Bogdanovic D., Mitrakovic M. (2010) Effect of Prestorage Incubation and Prolonged Storage on Broiler Breeder Eggs Hatchability, XIII European Poultry Conference, CD of Proceedings

Mirjanić, G. (2010) The importance of quality nutrition of honeybee. XV Scientific Conference on Biotechnology

Popovic Vranjes, Anka, Grubacic, M, Pejanovic, R, Kralj, A, Kasalica, Anka, Miocinovic, Dragica, Niketic, Gordana (2010) Possibilities of organic milk production in Serbia. Contemporary Agriculture, Novi Sad, Serbia, 59:(1-2)

Popovic Vranjes, Anka, Kralj, A, Kecman, Jelena (2010) Maturity of cheese with noble mould from goat's milk, Agroznanje, 9(4)

Savić, Đ., Matarugić, D., Delić, N., Kasagić, D., Stojanović, M. (2010) Determination of organic milk contents as method of evaluation of energy status of dairy cows, Veterinary Bulletin 64(1-2):21-32

Savić, N., Mikavica, D., Marković, Z., Matarugić, D. (2010) The influence of different energy value feed of the chemical composition of meat of rainbow trout (Oncorhynchus mykiss, Walbaum, 1792) reared in cages. Veterinary Journal of Republic of Srpska, 10(1):35-41

Savić, N., Mikavica, D., Marković, Z., Matarugić, D. (2010): The influence of water temperature and feed of different energy value on the mortality of rainbow trout (Oncorhynchus mykiss, Walbaum, 1792) reared in cages, Veterinary Journal of Republic of Srpska, 10(1):55-64

Stancev, Vidica, Dukic, D, Kovcin, S, Drinic, Milanka, Puvaca, N, Stancev V (2010) Nutritive value of the genetically divergent genotypes of lucerne (Medicago sativa). African Journal of Agricultural Research, 5:1284-1287

Vasko Z, Drinic M. (2010) Influence of cow nutrition costs on the efficiency of milking cows, Contemporary Agriculture, Novi Sad, Serbia, 59:(1-2)

Vazic, B, Drinic, Milanka, Krajinovic, M, Rogic, Biljana (2010) The blood urea content in dairy cows depending on breeding location and nutrition, Contemporary Agriculture, Novi Sad, Serbia, 59:(3-4)

Erbez M, Rogić Biljana, Ćurković M, Kerpčarová V, Važić B. (2009) Traditional sheep's milk products in Bosnia and Herzegovina. Farmářská výroba sýrů a kysaných mléčných výrobků Vol.1:21-25

Matarugić D., Jotanović S., Savić Đ., Vekić M. (2009) The most common reproductive disorders of dairy cows in the Republic of Srpska, Agroznanje, Vol.10(2):75-82

Matarugić D., Šarić M., Jotanović S., Savić Đ., Vekić M. (2009) Identification of clinical and subclinical mastitis in cows in the Republic of Srpska, Agroznanje, Vol.10(2):67-73

Matarugić, D., Savić, Đ. (2009) Trichinellosis in wild boar in hunting areas of Republic of Srspka, Veterinary Journal of Republika Srpska, Vol.9(2):138-143

Mijatović R., Matarugić D., Jotanović S., Vekić M., Savić Đ., Nalesnik A. (2009) Using of dual insemination of cows in field practice, Veterinary Journal of Republic of Srpska Vol.9(2):120-124.

Nalesnik A., Jotanović S., Matarugić D., Šarić M., Vekić M., Savić Đ., Mijatović R. (2009) Diagnosis of oestrus and ovarian structures in cattle, Veterinary Journal of Republic of Srpska, Vol.9(2):116-119

Radojičić, Biljana, Matarugić, D., Savić, Đ., Kasagić, D., Despotović, D. (2009) Prevention of productive diseases in high-yielding milk cows, Agroznanje, Vol.10(4):159-169

Rašković, B. Savić, N., Marković, Z., Poleksić Vesna (2009) Histology of the liver and the variation of nuclei surface of hepatocytes of trout reared in cages. Fisheries, IV International Conference, 27-29 May, Belgrade - Zemun. pp.96-104

Savić, N., Mikavica, D., Marković, Z., Matarguić, D. (2009) The influence of water temperature and the energy value of feeds on growth in the rainbow trout (Oncorhynchus mykiss, Walbaum, 1792) reared in cages. Agroznanje, Vol.10(4):93-106

Savić, N., Mikavica, D., Marković, Z., Matarugić, D., Ćuk, D. (2009) The influence of nutrients on the length growth of rainbow trout (Oncorhynchus mykiss, Walbaum, 1792) reared in cages. Fisheries, IV International Conference, 27-29 May, Belgrade - Zemun. pp.85-95

Šamanc H., Kirovski Danijela, Savić Đ., Sladojević Ž., Vujanac I., Zarcula Simona (2009) Concentration of calcium and phosphorus in blood sera of cows with LDA, Veterinary Bulletin Vol.63(5-6):31-340

Urošević, M., Matarugić, D., Savić, Đ. (2009) The basic characteristics of Carpathian shepherd dog hair. Agroznanje, Vol.10(2):131-135

Vaško Ž., Jotanović S., Vučenović A., Savić Đ. (2009) Estimation of perspectives for organic food production in BiH, based on SWOT analysis, 1st International Scientific and Expert Conference TEAM 2009, Slavonski Brod, November 2009, Book of Proceedings, pp.393-397

Head of the research group: Dragutin Matarugić, Professor

Telephone: +387 51 330 952

E-mail: matarugicd@yahoo.com

Institute of Agricultural Economics

The Institute of agricultural economics was established in 2005 as scientific-development institute into the Faculty of agriculture. Main goal of its establishment has oriented to achievement of several crucial functions. Above all scientific-research activities, planning and programming of agricultural and rural development and improving educational process at the faculty.

Period of group's activity: 2005 onwards

Key projects since 2008 onwards:

Scientific-research and applied projects:

The Western Balkan Rural Extension Network through Curriculum Reform, EC TEMPUS project 158177, 2010-2012

The programme of rural development of Srbac Municipality, Faculty of agriculture Banja, 2010

The Republic of Srpska Strategic rural development plan for the period 2009-15, Faculty of agriculture Banja Luka for RS Ministry of Agriculture, Forestry and Water Management, 2009

Determining level of economic efficiency of agricultural production in the Republic of Srpska, Ministry of Science of the Republic of Srpska, 2009

The Republic of Srpska antihail defence strategy, RS Ministry of agriculture, forestry and water management, Banja Luka, 2009

Analyses of socio-economic indicators of development rural areas of the Republic of Srpska, RS Ministry of agriculture, Forestry and Water Management, 2008-2009

Articles:

Ostojic, A, Vasko, Z, Maksimović, A. (2011) The influence of the production volume on the honey sales channels, memoire of 46st Croatian and 6th International symposium of agronomists, Opatija, Croatia

Vasko Z, Vucenovic A, Stojanovic M. (2010) Selection of optimal depreciation method for calculation of milking caws heard depreciation, proceedings of abstracts, 21st symposium Animal husbandry, veterinary medicine and economics in rural and the healthy and safety production, Faculty of agriculture Novi Sad, Divčibare, Serbia

Mirjanic S, Vasko Z, Ostojic A, Drinic Lj, Rokvic G, Mrdalj V, Vucenovic A. (2010) Agriculture of the Republic of Srpska and Bosnia and Herzegovina in light of global economic crisis, IV international meeting of agricultural economists, Bar, Montenegro

Vasko Z, Ostojic A (2010) Relationship between the level of financial incentives and the level of gross level added of agriculture in the Republic of Srpska in the period 2000-08, memoir of international scientific symposium, Neum

Mirjanic S, Vasko Z, Ostojic A, Rokvic G, Mrdalj V, Drinic Lj, Figurek A. (2010) Similarities and differences between lowland and mountain regions in the Republic of Srpska, Economics of Agriculture, Vol. LVII, SI-2

Vasko Z, Vucenovic A. (2010) Defining the vision and mission as a phase of strategic planning of enterprise in agro-complex, memoire of 45st Croatian and 5th International symposium of agronomists, Opatija, Croatia

Ostojic A, Komic J, Drinic Ljiljana, Rokvic Gordana, Mrdalj Vesna (2010) Analyses of import and export of fresh vegetable in B&H, memoire of 45st Croatian and 5th International symposium of agronomists, Opatija, Croatia

Mirjanic S, Vasko Z, Vucenovic A. (2010) Evaluation of economics feasibility of investment in modernization of anti-hail protection system in the Republic of Srpska, memoire of XV scientific conference of biotechnologies Faculty of agriculture Cacak, Serbia

Vasko Z, Drinic M. (2010) Influence of caw nutrition costs on the efficiency of milking caws, Contemporary Agriculture, Novi Sad, Serbia, Vo. 59 (1-2)

Rokvic, Gordana, Mirjanic, S. (2010) New challenges for agriculture and rural development extension services, Proceedings, Annual scientific conference of agronomist of Republic of Srpska, Trebinje

Rokvic Gordana, Vasko Z, Vucenovic Aleksandra (2009) Regionalization - a rural development policy, memoir of international scientific symposium, Timisoara, Romania

Mirjanic S, Vasko Z, Ostojic A, Rokvic Gordana, Mrdalj Vesna, Drinic Ljiljana, Vucenovic Aleksandra (2009) Population dynamics and structure in rural areas of the Republic of Srpska, memoir of international scientific symposium, Timisoara, Romania

Vasko Z, Vucenovic A, Kosic N. (2009) Agrarian guaranty fund as a factor of agricultural lending expansion, Agroznanje journal, Vol.10(4)

Erbez M, Falta D, Vasko Z, Chaladek G. (2009) Evaluation of introduction of automated milking systems and their characteristics, preconditions and influence on production, Agroznanje journal, Vol.10(2)

Vucenovic A, Vasko Z. (2009) The financing of agricultural development, Agroznanje journal, Vol.10(4)

Vasko Z, Jotanovic S, Vucenovic A, Savic Dj. (2009) Estimation of perspectives for organic food production in B&H, based on SWOT analyses, memoire of International scientific symposium, Slavnosnki Brod, Croatia

Ostojic A, Drinic Ljiljana, Mrdalj Vesna (2009) Analysis of parity of prices wheat and corn and inputs in the Republic of Srpska, Agroznanje journal, Vol.10(3)

Mirjanic S, Ostojic A, Vasko Z, Drinic Ljiljana, Rokvic Gordana, Mrdalj Vesna (2009) Possibilities of development SMEs and entrepreneurship in municipalities Nevesinje, Sipovo and Ribnik, Agroznanje journal, Vol.10(4)

Mirjanic S, Krstic B, Mrdalj Vesna, Drinic Ljiljana, Rokvic Gordana, Vasko Z, Ostojic A (2008) Economic valorisation of organizational and technical solutions in the production and turnover of agricultural products, Agroznanje Vol.9(3)

Mirjanic S, Vasko Z. (2008) The policy of subsidizing agriculture and rural development in the Republic of Srpska – previous tendencies and directions for further development, Agroznanje, Vol.9(4)

Mirjanic S, Vasko Z, Ostojic A, Rokvic Gordana, Mrdalj Vesna, Drinic Ljiljana (2008) Rural development in a function of use available resources – case of municipalities of Nevesinje, Sekovici and Ribnik, memoir of international scientific meeting Multifunctional Agriculture and Rural Development, Belgrade.

Mirjanic S, Vasko Z (2008) Stimulating agriculture and rural areas development, memoir of international scientific symposium Agricultural science and vocation in transition of education and agribusiness, Belgrade.

Head of the research group: Stevo Mirjanić, Professor

Telephone: +387 51 330 930

E-mail: stevo.mirjanic@agrofabl.org

Institute of Agroecology and Soil Sciences

Institute of Agroecology and Soil Science is one of the five Institutes in a frame of Faculty of Agriculture in Banja Luka. It includes several subjects: Pedology, Land reclamation and Remediation, Irrigation network, Soil mechanization, Agricultural chemistry and Botany. It has fully equipped laboratory for soil analysis, small automatized meteostation, erosion plots and experimental fields.

Period of group's activity: 2002 onwards

Key projects since 2008 onwards:

Scientific-research and applied projects:

FP6: "Reintegration of coal ash disposal sites and mitigation of pollution in the West Balkan area" No. INCO-WBC-1-509173 (RECOAL).

FP6:"Sava River Basin: Sustainable Use, Management and Protection of Resources" No. INCO-CT-2004-509160 (SARIB).

" Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) countries". Norwegian Programme "Institutional collaboration between academic institutions in Agriculture, Forestry and Veterinary Medicine in Norway and Bosnia & Herzegovina, Croatia and Serbia & Montenegro". Noragric is a Department of International Environment and Development Studies at the Norwegian University of Life Sciences –UMB.

SGF Ramsar Project: "Restoration and rehabilitation Wetland Region Bardaca, Bosnia and Herzegovina".

Development of sprayers for the orchards protection according to the IPM principles and environmental protection.

Program of continuing education of agricultural producers in rural areas.

Equipment inspection machine for plant protection products according to European standards.

Calibration and certification of plant protection machinery in order to implement European standards.

Articles:

Gatarić Đ., Kovačević Z., Radić V., Đurić B. (2011) Effect of seed sowing type of beans on the yield (Lathyrus sativus L.), XVI Savetovanje o biotehnologiji, Zbornik radova, Vol.16(18):73-78

Nataša Čereković, M. Todorović, R.L.Snyder, Sretenka Marković, Francesca Boari, B. Pace, V. Cantore (2011) Effect of mulching on melon (cv. Campero) crop coefficient. XVI Savetovanje o biotehnologiji sa međunarodnim učešćem, Zbornik radova, Vol.16(18):165-169

Zecevic Veselinka, Zivancev, D., Kondic Danijela, Markovic Sretenka, Markovic D. (2011) Effect of nitrogen to crop density of winter barley (Hordeum vulgare L.). Növénytermelés Suppl.1, 60:133-136

Sretenka Marković, Marie Tereze Abi-Saab, Atef Hamdy (2011) Morfološke i produktivne osobine karfiola (Brasica oleracea var. botrytis L.) gajenog u zaštićenom prostoru u uslovima navodnjavanja vodom različitog saliniteta, tematski zbornik radova Melioracije pp.109-114

V. Bojanić (2010) SYNTHESIS OPTIMIZATION OF CELLULOSE ACRYLATE AND GRAFTED 4-VINYLPYRIDINE AND 1-VINYLIMIDAZOLE. Hem.ind.64 (6):529-535

Maličević Z., Railić B., Mitrić S., Babić M., Marčeta I. (2010) Means of improving of air assistance sprayer in the purpose of applying small and medium application rates in orchards. Agroznanje Vol.11(4)

Gatarić Đ., Radić V., Đurić B., Kovačević Z., Petković B. (2010) Variability of production and forage quality of red clover genotypes (Trifolium pratense L.), Agroznanje, Vol.11(3):77-82

Kovačević Z., Petrović D., Herceg N., Vego, Arar, K. (2010) Adventive weed flora in vineyards of Bosnia and Herzegovina, IX. Alps-Adria Scientific Workshop, Špičák, Czech Republic, Vol.59:329-332.

Gatarić Đ., Kovačević Z., Đurić B., Radić V., Lakić Ž. (2010) Genetic resources of forage legumes and grasses in Republic of Srpska. XII International Symposium on Republic of Serbia, Kruševac, p.1-6

Kovačević Z. (2010) Association Hydrochari-Nymphoidetum peltatae Slavnić 1956 In The Ramsar Area Of Bardača. BALWOIS 2010 Ohrid, Republic of Macedonia

Railić, B., Maličević, Z., Mitrić, S., Babić, M., Marčeta, I. (2009) "Effectiveness of plant protection equipment testing", Agroznanje Vol.10(2):57-65

Nožinić, M., Marković, M., Trkulja, V. (2009) Experimental Linseed Oil Production in Banja Luka Region. Scientific Bulletin of ESCORENA, Vol. 1: 45-47

Marković, M., Begović, P., Pešević, Dušica (2009) Ground Water Resources of Lijevce Field as a Potential for Irrigation in Agriculture. Eleventh International Symposium on Water Management and Hydraulic Engineering, 1-5 September, Skopje. Proceedings, Vol. II: 721-728

Marković, M., Komljenović, I., Kovačević. V., Todorović, J., Jovanović, Z. Djalović, I. (2009) Influences of liming on maize yields. Plant-Soil Interaction at Low pH a Nutriomatic Approach. - Proceedings of the 7th International Symposium on Plant-Soil Interaction at Low pH May 17-21, Guangzhou China, pp. 186-187

Gatarić Đ., Radić V., Đurić B., Kovačević Z., Lakić Ž. (2009) Morphological and biological properties of the seeds of eco-types of beans (Lathyrus sativus L.) from Petrovo Polje, Agroznanje, Vol. 10(2):31-38

Malić N., Kovačević Z. (2009) Flora of landfill Stanari. Agroznanje, Vol. 10(2):47-56

Kovačević Z., Gatarić Đ., Đurić B., Radić V. (2009) Weed flora crop of chamomile (Matricaria chamomilla L.) at the site of an educational center Manjaca, Agroznanje, Vol. 10(3):77-82

Kovačević Z., Stojanović S. (2009) Association Nymphaeetum albo-luteae Nowinski 1928 in Bardacha region, IV Međunarodna konferencija "Ribarstvo", Zbornik predavanja, p. 247-254

Komljenović, I., Marković, M., Kondić, Danijela, Todorović, J., Kovacevic V. (2009) Response of maize to liming and ameliorative phosphorus fertilization. 44th Croatian 4th International Symposium on Agriculture, February 16-20, Opatija, Croatia. Proceedings, p.532-535

Šoškić, S., Mitrović, D., Marković, M. (2009) Efekti navodnjavanja vinograda kapanjem i kišenjem na skeletnom zemljištu. Agroznanje, Vol.10(3):145-152

Marković, M. (2009) Uzroci i posljedice degradacije zemljišta u Republici Srpskoj. Treći međunarodni kongres "Ekologija, zdravlje, rad, sport", Banjaluka, Zbornik radova, p.364-366

Marković, M. (2009) Korišćenje zemljišta u funkciji zaštite životne sredine. Zbornik radova, Treći međunarodni kongres "Ekologija, zdravlje, rad, sport", Banjaluka, Zbornik radova, p.367-369

Sretenka Srdić, Marie Tereze Abi-Saab, Atef Hamdy (2009) Efficiency of NPK nutrients application in hydroponics production of melon (Cucumis melo L.) under saline irrigation practice Agroznanje, Vol.10(2):117-125

Sretenka Srdić, Marie Tereze Abi-Saab, Atef Hamdy (2009) Influence of saline water for irrigation and the type of substrate on melon (Cucumis melo L.) yield grown in soilless culture, Agroznanje, Vol.10(2):101-109

V. Bojanić, Dijana Novković (2009) Chemical properties of the healing waters of Republic of Srpska, X YUCORR International conference, p.157-161

V. Đukić, V Bojanić (2009) Disposal of sludge from the device for wastewater treatment, XI YUCORR International conference, p.218-223

V. Đukić, V Bojanić (2009) The issue of waste sludge from the Electronic Industry, XI YUCORR International conference p.354-359Frank Repmann, Mladen Babić, B. Uwe Schneider, Wolfgang Schaaf, Reinhard F. Hüttl, (2008) Assessment of compost application to coal ash disposal sites to promote the rapid vegetation establishment. International Conference on Impact Assessment of Land Use Changes, April 6th - 9th, Berlin, Germany

Dellantonio, Alex; Fitz, Walter J.; Custović, Hamid; Repmann, Frank; Schneider, Bernd U.; Grünewald, Holger; Gruberd, Valeria; Zgorelec, Željka; Zerem, Nijaz; Carter, Claudia; Marković, Mihajlo; Puschenreiter, Markus; Wenzel, Walter W. (2008) Environmental risks of farmed and barren alkaline coal ash landfills in Tuzla, Bosnia and Herzegovina. Environmental pollution. 153(3):677-686

Marković, M., Komljenović, I., Todorović, J., Biberdžić, M., Delalić Zemira (2008) Response of maize to liming in northern Bosnia. VII. Alps Adria Workshop. Cereal Research Communications, Vol. 36:2079-2082

Komljenović, I., Marković, M., Kondić, Danijela (2008) Residual influences of phosphorus fertilization on maize status in potkozarje area. Cereal Research Communications, Vol.36: 699-702

Marković, M. (2008) Zemljište – resurs Republike Srpske. Zbornik radova sa Naučnog skupa „Resursi Republike Srpske“, Akademija nauka i umjetnosti Republike Srpske, p.161- 174

Živanović-Katić, Snežana, Jelić, M., Đalović, I., Marković, M. (2008) Uticaj krečnog đubriva na zakorovljenost pšenice, kukuruza i graška. Agroznanje, Vol.9(4):143-150

Kovačević Z., Stojanović S. (2008) Aquatic weeds complex of Bardacha, Acta herbologica, Vol. 17(1):129-135

Kovačević Z., Šumatić N., Kojić M., Petrović D., Herceg N. (2008) Adventive weed flora of Bosnia and Herzegovina, Acta herbologica, Vol. 17(1):89-93

Kovačević Z., Petrović D., Herceg N. (2008) The summer aspect of weed flora in the vineyards of Herzegovina, HERBOLOGIA, Vol. 9(2):9-20

Nataša Cecić, Sretenka Srdić, Predrag Vuković (2008) Description of Subirrigation and Horizontal Pipe Drainage in Serbia. Conferinţa internaţională: ’’Dezvoltarea economică performantă şi complexă a spaţiului rural şi regional’’, Bucureşti, 19-20 septembri, pp. 1-11

Dellantonio, Alex; Fitz, Walter J; Čustović, Hamid; Grünewald, Holger; Repmann, Frank; Schneider, Bernd U; Edwards, David; Zgorelec, Željka; Marković, Mihajlo; Wenzel, Walter W. (2007) Trace element uptake in agricultural and wild plants grown on alkaline coal ash disposal sites in Tuzla (Bosnia and Herzegovina). Proceedings of the 9th International Conference on the Biogeochemistry of Trace

Elements (ICOBTE) / YongGuan, Zhu ; Nicholas, Lepp and Ravi, Naidu (ur.). Beijing: Tsinghua University Press, P.356-357

Head of the research group: Borislav Railić, Professor

Telephone: +387 51 330 914

E-mail: borislav.railic@agrofabl.com

Current Cooperation Projects

Sustainable preservation of indigenous South East European legumes and their traditional food and feed products, SEELEGUMES, SEERA Net, 2010-2012

The wild and agricultural floras in all West Balkan Countries (WBC) and other South Eastern European regions are rather rich in legume species such as pea (Pisum sativum), faba bean (Vicia faba), vetches (Vicia spp.), vetchlings (Lathyrus spp.), lentil (Lens culinaris), chickpea (Cicer arietinum), lupines (Lupinus spp.) and Phaseolus beans. Many of these have become underutilized and nearly forgotten, but they remained a part of wild flora despite its great agronomic potential and are in danger to be extinct. The strategic goal of this project is to establish an efficient, functional and sustainable network on the genetic resources of annual legume species in the countries of South Eastern Europe and to enable it to be fit into the similar existing EU and other international networks. The participants from the WBC regions should have a benefit in all segments of their research and networking, while the participants from EU will have an opportunity to demonstrate their excellence in the field and play an essential role in assisting the WBC participants in developing their research and networking capacities. The S&T approach of the project will be carried out during 2 years within 2 work packages: WP1 'Gathering SEE Legumes' will be focused on expeditions, mapping, collecting, ex situ and in situ preservation and construction of the database with accessions of collected species, while WP2 'Describing SEE legumes' will be focused on a conventional and molecular characterization of the collected species and an analysis of their nutritional and other values. At the end of each of both project years, there will be an annual meeting in the form of a workshop where the main achievements in both WPs of the project will be reported, presented and disseminated. The joint catalogue and the reference collection will be regarded as a common good and will be maintained and utilized to the benefit of all project participants, becoming a part of a wider European genetic resource network.

References:

Institutes and universities from Novi Sad and Belgrade (SRB), Osijek (CRO), Thermi (GR), Banja Luka (B&H), Ljubljana (SLO), Lushnja (AL), Skopje (MK), Timisoara (RO), Dijon (FR), Saint-Petersburg (RUS), Helsinki (FI), Yerevan (AM), Sadovo (BG),Frankfurt-am-Main (DE)

Contact person: Branko Đurić, MSc

Telephone: +387 51 330 957

E-mail: branko.djuric@agrofabl.org

FP 7: FOCUS-BALKANS, Food Consumer Science in the Balkans. Frameworks, Protocols and Networks for a better knowledge of food behaviours.

The general objective of the FOCUS-BALKANS project is to improve competencies and understanding in the field of consumer food science in the Western Balkan countries (WBC). The scientific results of the research will make important contribution to the public health and consumer protection and to the achievement of the objectives within the Seventh Research Framework Programme (FP7). The specific objectives are to:

- Develop the competences and understanding of public organisations, private enterprises and NGOs in the WBC countries regarding food consumer science (training).
- Develop a network of universities, institutes, high schools, consumer organisations, NGOs and private enterprises active in the field of food consumer science that are able to develop joint-research activities (networking).
- Have a better understanding of food consumers in the WBCs, with a focus on products with positive nutritional properties (fruits and health/Diet food) and sustainability (organic and traditional food products).

Four studies on those markets plus one quantitative survey will systematically be conducted by WBC organisations as a mechanism for learning-by-doing.

References:

AGRIDEA, University of Ljubljana, Biotechnical Faculty, University of Zagreb – Faculty of Economy, SMMRI, SEEDEV, University of Belgrade, Faculty of Economy, Institute of Public Health of Montenegro, Institute for Health Protection, GEM Etudes et Stratégies, ENITA-C, Wageningen University & Research Centre, University of Newcastle, University of Parma, ECOZEPT

Contact person: Dr Miljan Cvetković, Assistant Professor

Telephone: +387 51 330 9038

E-mail: miljan.cvetkovic@agrofabl.org

COST action FA 0807: Integrated Management of Phytoplasma Epidemics in Different Crop Systems. 2008-2013. MC Member of the Action

Training and educational project and exchange of research staff and students.

References:

Delic D., Lolic B. 2010. Bois noir phytoplasma infecting grapevine in Srpska (Bosnia and Herzegovina): Scientific meeting and 2nd Management Committee meeting, January 31 to 2 February 2010, Sitges, Spain, COST FA0807, 10. ISBN-13: 978-84-692-98916

Lolic B., Delic D. 2010. Occurrence of “Candidatus phytoplasa pyri” in pear growing area of Srpska-Bosnia and Herzegovina: Scientific meeting and 2nd Management Committee meeting, January 31 to 2 February 2010, Sitges, Spain, COST FA0807, 61. ISBN-13: 978-84-692-98916

Short Term Scientific Mission (STSM) conducted in DISTA University of Bologna, Faculty of Agriculture, Phytoplasmology laboratory under the supervision of Prof. Dr Assunta BERTACCINI from 16/03/2010 to 26/03/2010. Report reference code: COST _STSM-FA0807-5520

5-9 July 2010, the COST-Action FA0807 training school "Identification and sampling of leafhopper and planthopper vectors of phytoplasmas", held at Julius Kuhn-Institute, Bernkastel-Kues, Germany.

Contact person: Dr Duška Delić, Assistant Professor

Telephone: +387 51 330 978

E-mail: duska.delic@agrofabl.org

EUPHRESCO PHYTOSANITARY - ERA NET project

EUPHRESCO aims to increase cooperation and coordination of national phyto-sanitary (statutory plant health) research programmes at the EU level through networking of research activities and mutual opening of national programmes.

Contact person: Branimir Nježić, MSc

Telephone: +387 51 990 332

E-mail: branimir.njezic@agrofabl.org

The Western Balkan Rural Extension Network through Curriculum Reform, EC TEMPUS project 158177, 2009-12.

The Tempus IV project "Western Balkan Rural Extension Network through Curriculum Reform" will address the deficiency and need for rural development curriculum reform in the Western Balkan region through the training, development, and implementation of rural development programs following 2 streams: formal and non-formal rural development education. Within the framework of these two streams, the following objectives of the project have been established: 1) To develop and improve the competencies of current non-formal education professionals, who will work alongside EU experts to create and deliver non-formal, modular based trainings to stakeholders in rural development. 2) To introduce a 1 year, ECTS compliant Specialization in Rural Development (SRD) program at leads Western Balkan Higher Education Institutions (State University of Tetovo, University of Novi Sad, University of Banja Luka, and Agriculture University of Tirana). 3) To establish Centre for Rural Extension (CRE) at lead Western Balkan Higher Education Institutions which support SRD program and non-formal education activities? 4) To increase regional cooperation in rural development and extension / outreach within the Western Balkan Rural Extension Network.

References:

Universities from Reading (UK), Wageningen (NL), Helsinki (FN), Prague (CZ) and universities from Novi Sad and Belgrade (Singidunum) (SR), Tetovo and Štip (MK), Tirana and Korča (AL), Banja Luka and Sarajevo (BA).

Contact person: Željko Vaško, Docent

Telephone: +387 51 330 929

E-mail: zeljko.vasko@agrofabl.org

In previous period collaboration between Faculty of Agriculture in Banja Luka and other faculties in Bosnia and Herzegovina was modest.

Conferences, Scientific Meetings and Seminars

Annual scientific conference of agronomists of the Republic of Srpska

Interdisciplinary approach.

Participants from Bosnia and Herzegovina, Serbia, Croatia, Montenegro, Macedonia, Slovenia, Italy.

Topics in last three years were: "Agriculture of rural areas as a factor of integration into EU" (2009), "Agriculture and food – challenges of XXI century" (2009) and "Natural resources in function of development of agriculture and rural areas" (2011).

Date of event: In March; 3-4 days event; Each year since 1996.

Organiser: The Faculty of Agriculture, University of Banja Luka, All faculties' departments

Co-organisers: Agricultural institute of the Republic of Srpska, Banja Luka

Round table

The Competitiveness of agricultural sector in B&H; Only participants from B&H.

Date of event: Banja Luka, December, 1, 2010; 1 day event; single event;

Organiser: Željko Vaško, Docent, Chief of Agricultural economics and rural development study program of the Faculty of agriculture,

Telephone: +387 51 330 929

E-mail: zeljko.vasko@agrofabl.org

Co-organisers: The World bank country office for B&H.

Workshop

Rural ecology development workshop.

Participants from Albania, Macedonia, Serbia, B&H, Great Brittany, Netherlands, Czech Republic and Finland.

Date of event: Banja Luka, September, 13-15, 2010; 3 days event; Successively event.

Organiser: Željko Vaško, Docent, Chief of Agricultural economics and rural development study program of the Faculty of agriculture,

Telephone: +387 51 330 929

E-mail: zeljko.vasko@agrofabl.org

Co-organisers: Partners'' universities in TEMPUS WBREN project.

2nd inter-cathedral meeting of agricultural economists of former Yugoslavia

Models of high education financing.

Participants from: Serbia, Macedonia, Montenegro and B&H.

Date of event: Banja Luka, September, 12-13, 2008; 2 days event; Yearly, since 2007, by changing of rotation of host country;

Organiser: Professor Stevo Mirjanic, Head of Institute of Agricultural Economics, Faculty of agriculture, University of Banjaluka,

Telephone: +387 51 330 930

E-mail: stevo.mirjanic@agrofabl.org

Co-organisers: Related departments from faculties of agriculture in Belgrade, Novi Sad, Skopje, Podgorica, Sarajevo and Mostar.

UNIVERSITY OF MOSTAR, FACULTY OF AGRICULTURE AND FOOD TECHNOLOGY

Research Groups and Their Key Projects in the Last Two Years

Department of Plant Breeding Genetics, Seed Science, Biometrics and Experimentation

Area of interests: plant breeding, plant genetic resources, genetics, research in statistics and biostatistics: experimental design, data analysis.

Mission and goals: education as main activity, scientific and professional researches with impact on the agriculture and economy in general in the area of work. Also our objectives are cooperation with scientific and professional institutions and individuals in the region and wider.

Teaching and research staff: Jure Beljo, PhD, full professor, head of department

Plant breeding, Breeding of fruit and horticultural crops and Tobacco production and processing: Georg Drezner, PhD, Associate professor

Genetics: Zrinka Knezović, Assistant PhD

Basic Biometrics, Biostatistics and Experimental design: Ana Sabljo, engineer of agriculture, TA, Jurica Primorac, engineer of agriculture, TA

Period of group's activity: 2007 onward

Key projects since 2008 onwards:

Projects:

Improving Research Efficiency by Using Advanced Biometrical Models - Ministry of Science, Education and Sports, Croatia

Experimental design evaluation with aim of improving early vegetable production. - Federation of Bosnia and Herzegovina, Federal Ministry of Education and Science.

Soil fertility improvement with use of biological nitrogen fixation – Federation of B&H, Ministry of Agriculture, Water Management and Forestry

Thinning of fruit at peach and apricot. - Federation of B&H, Ministry of Agriculture, Water Management and Forestry

Building the European Food Science Education; Tempus JEP_40035_2005 (2007 – 2009.).

Plant Health and Genetic Resources in South East Europe, Norwegian – South Eastern Europe Program. 2006-2009.

Sustainable agricultural production and its influence on tourism in the Nature Park Blidinje. Federation of B&H, Ministry of Environment and Tourism. 2008 -2009

Identification, collection and maintenance of autochthonous plant genetic resources. Federation of Bosnia and Herzegovina, Federal Ministry of Education and Science. 2009 - 2010.

Establishment of organic agriculture in Blidinje Nature Park. – Swiss Agency for Development and Cooperation. 2009.

Publications and presentations:

Višnja Vasilj, Zrinka Knezović, Ivo Spužević 2009.Vinogradarstvo kao resurs ruralnog razvoja na području Dubravske visoravni i Mostarskog polja (Grape growing as a resource of rural development on

dubrava plateau and Mostar field) XX Naučno-stručne konferencije poljoprivrede i prehrambene industrije Neum 2009.

Visnja Vasilj, Sanja Sikora, Sulejman Redžepović, Zrinka Knezovic, 2009. Zastupljenost određenih grupa mikrooganizama pod različitom vegetacijom XX Naučno-stručne konferencije poljoprivrede i prehrambene industrije Neum 2009.

Zrinka Knezović, Ana Sabljo, 2009. Uloga biometrike u unapređenju istraživanja u biljnoj proizvodnji (Improving researches in plant production: the role of biometrics) XX Naučno-stručne konferencije poljoprivrede i prehrambene industrije Neum 2009.

Ćurković Matija, Primorac Jurica: Influence of Nitrogen Fertilization on Spring Barley Yield, Soil and Water // ISTC Soil Protection Activities and Soil Quality Monitoring in SE Europe, June 18-19, 2009, Sarajevo

Elma Sefo, Zdravko Matotan, Zrinka Knezović Uzgoj presadnica povrća u plutajućim kontejnerima na hranjivoj otopini 43. hrvatskom i 3. međunarodnom simpoziju agronoma, Opatija 2008.

Primorac, J., Knezović, Z., Dujmović Purgar, D., Kozumplik, V., Bolarić, S., Fenotipske karakteristike oplemenjivačkih populacija crvene djeteline selekcionirane na tolerantnost na sušu i smrzavanje 43. hrvatskom i 3. međunarodnom simpoziju agronoma, Opatija 2008.

Majić, A., Poljak, M., Sabljo, A., Knezović, Z., Horvat, T. 2008. Efficiency of use of Chlorophyll meter and Cardy-ion meter in Potato Nitrogen nutrition supply – VI Alps-Adria Workshop Slovakia .

Sefo, E., Matotan, Z., Knezović, Z., Ivanković, P., Majić, A., Ćorić R., 2009. Utjecaj tehnologije proizvodnje na prinos lubenica u jugozapadnoj Hercegovini. Zbornik sažetaka 44. hrvatskog i 4.međunarodnog simpozija agronoma, 16.do 20. veljače 2009. Opatija

Matotan, Z., Sefo, E., Knezović Z., Ivanković, P., Majić, A., Ćorić R., 2009. Utjecaj kalemljenja na prinos rajčice uzgajane u zaštićenim prostorima. Zbornik sažetaka 44. hrvatskog i 4.međunarodnog simpozija agronoma, 16.do 20. veljače 2009. Opatija

Majic, A., Poljak, M., Knezovic, Z., Sabljo, A., Sefo, E. 2009. Chlorophyll meter as diagnostic tool for nitrogen fertilization management in potato crop (Solanum tuberosum L.) 16th Nitrogen workshop.(Connecting different scales of nitogen use in Agriculture Turin Italy 2009.)

Visnja Vasilj, Sanja Sikora, Zrinka Knezovic, Adrijana Majic, Radica Ćorić 2009. The influence of different types of vegetation on microbiological population in different soils of Western Herzegovina16th Nitrogen workshop (Connecting different scales of nitogen use in Agriculture Turin Italy Printed by Tipografia Fiordo s.r.I., Galliate (NO), ISBN 978-88-902754-2-5.

Anita Ivanković, Esma Velagić Habul, Dubravka Hafner and Zrinka Knezović. Blidinje Lake – Some Chemical And Hydrobiological Characteristics- BALWOIS 2010 - Ohrid, Republic of Macedonia - 25, 29 May 2010.

Buntić, M., Beljo, J., Sabljo, A., Leko, M. 2010. Ampelographic characterization of grapevine genetic resources. XXI Naučno-stručne konferencije poljoprivrede i prehrambene industrije Neum 2010.

Beljo, J., Sabljo, A., Leko, M., Asdal, A. 2010. Collection and maintenance of grape vine native variety in BaH. 3rd scientific and technical conference in organisation of Croatian society of agronomists: Croatian plant breeding, seed and nursery: Production and European integration. Šibenik 2010. Book of Abstracts: p57.

Dujmović Purgar, Dubravka; Primorac, Jurica; Gunjača, Jerko; Kozumplik, Vinko; Bolarić, Snježana: Nalazišta autohtonih populacija crvene djeteline (*Trifolium pratense* L.) na području sjeverozapadne Hrvatske// *43. hrvatski i 3. međunarodni simpozij agronoma*, Opatija 2008., 308-312.

Dujmović Purgar, D., Šindrak, Z., Vokurka, A., Primorac, J., Bolarić, S. 2008. Soil assessment based on botanical composition on habitats of autochthonous populations of red clover (*Trifolium pratense* L.). // *Cereal Research Communications*, Vol. 36, Suppl. 5 Part 3; 1727-1727.

Mesić M, Herceg N, Knezović Zrinka, Ćorić Radica, Zgorelec Željka, Kajić Nikolina, Šaravanja Paulina, Jurišić Aleksandra, Ćurković Matija, Primorac Jurica: Influence of Nitrogen Fertilization on Spring Barley

Yield, Soil and Water // ISTC Soil Protection Activities and Soil Quality Monitoring in SE Europe, June 18-19, 2009, Sarajevo

Georg D., Dvojkovic, K., Horvat, D., Novoselovic, D., Guberac, V., Maric, S., Cosic, J., Spanic, V., Simenic, J., Primorac, J. 2010. Grain yield and quality of winter wheat cultivars in different Croatian agro-productive environments // 8th International Wheat Conference, June 1-4, 2010, St. Petersburg, Russia.

Drezner, G., Dvojković, K., Guberac, V., Marić, S., Novoselović, D., Horvat, D., Španić, V., Šimenić, J., Primorac, J. 2010. Novi genotipovi pšenice – procjena uroda i kakvoće u više okolina // *Zbornik radova 45. hrvatskog i 5. međunarodnog simpozija agronoma* / Marić, Sonja ; Lončarić, Zdenko (ur.). Osijek: Poljoprivredni fakultet, 2010. 399-403. Presentation

Sabljo, A., Šarčević, H., Palaveršić, B., Buhiniček, I., Kozumplik, V., Bukan, M., Gunjača, J., Beljo, J., Tomasović, S., Ikić, I. 2008. Improvement of grain yield and Fusarium stalk rot resistance in the M3S maize population by recurrent selection. *Cereal Research Communications*. 36, Suppl. B; 159-160.

Majić, A., Poljak, M., Sabljo A., Knezović, Z., Horvat T. 2008. Efficiency of use of chlorophyll meter and Cardy-ion meter in potato nitrogen nutrition. *Cereal Research Communications*. 36; 1431-1434.

Majić, A., Poljak, M., Sabljo A., Sefo E., Knezović Z. 2009. Nitrate-Nitrogen rates in Petiole Sap of Potato Crop (*Solanum tuberosum* L.). *Acta Horticulturae*. 1 (2009) , 846; 333-338.

Sabljo, A., Palaveršić, B., Buhiniček, I., Bukan, M., Šarčević, H. 2008. Procjena prinosa zrna u M3S populaciji kukuruza per se i njenim test-križancima za različite cikluse rekurentne selekcije. *Zbornik sažetaka, 43. Hrvatski i 3 Međunarodni Simpozij Agronoma* / Milan Pospišil (ur.). Zagreb : Sveučilište u Zagrebu, Agronomski fakultet, 2008. 104-105.

Bukan, M., Buhiniček, I., Palaveršić, B., Sabljo, A., Kozumplik, V. 2010. Effect of suboptimal nitrogen fertilization rate on leaf chlorophyll content, yield and other agronomic traits of maize populations. *Növénytermelés – Crop Production*. (2010.) (prihvaćen za objavljivanje).

Šarčević, H., Pejić, I., Barić, M., Bukan, M., Buhiniček, I., Palaveršić, B., Sabljo, A., Kozumplik, V. Genetska struktura M3S populacije kukuruza pod rekurentnom selekcijom. *Zbornik sažetaka 44. hrvatskog i 4. međunarodnog simpozija agronoma* / Marić, Sonja; Lončarić, Sonja (ur.). Osijek: Poljoprivredni fakultet, Sveučilište Josipa Jurja Strossmayera u Osijeku, 2009. 98-99.

G. Grezner, K. Dvojković, D. Novoselović, V. Guberac, Sonja Marić, Jasenka Čosić, V. Španić, J.Šimenić, J. Primorac: Rezultati oplemenjivačkog rada na pšenici // Zbornik radova s trećeg međunarodnog stručnog skupa Hrvatsko oplemenjivanje bilja, sjemenarstvo i rasadničarstvo i europske integracije / 29.9-1.10. 2010. Šibenik,.

Mesić Milan, Herceg Nevenko, Ćorić Radica, Kajić Nikolina, Šaravanja Paulina, Primorac Jurica, Jurković Dragan, Ćurković Matija: Utjecaj gnojidbe različitim količinama dušika na prinos I neke komponente prinosa jarog ječma // III Znanstveno-stručni skup „Poljoprivreda u zaštiti prirode i okoliša“ / 2010, Vukovar.

Head of the research group: Jure Beljo, PhD

Telephone: +387 36 33 51 22; + 387 63 94 58 22

E-mail: jure.beljo@sve-mo.ba

Department of fruit growing

It has short period of working and souring this period we try to be involved in all kinds of fruit production.

Department for fruit production has relatively short period of working because it has been recently founded. Department is involved in fruit growing and fruit production predominantly in area of Herzegovina. Goals are basic application knowledge and practice in field and other similar growing surface, in agricultural centres and in juristic acts.

Our mission is to provide; advisory service in fruit production, technology of growing fruits and nursery garden. We also gives advice in planning and building a fruit yards, helping in planning a fertilization of fruits as well in soil fertility maintenance; suggest sorts and rootstock; gives specialized advice in fruit harvesting, classing and storage; helping and providing a scientific-professional projects

On departments polygon we conduct a professional and demonstration practice, workshops, exercise in trial fields; introduction and gathering a domestic varieties etc.

Department has accomplish and maintaining a cooperation with Departments of fruit growing at Faculty of Agriculture in Zagreb, Faculty of food Technology in Sarajevo, Faculty of Agriculture in Banja Luka and Podgorica, Faculty of Agro-Mediterranean in Mostar, institute for Adriatic cultures and karsts melioration in Split, REDAH organization, Association Bjelopoljac, IPERRA, Association of Fruits Stolac, Association of vine producer and olive growing Ljubuški etc.

Employees of department are involved in work of Commission for varieties recognition at Ministry of agriculture during a forming a National varieties list.

Period of group's activity: 2006 onward

Key projects since 2008 onwards:

Projects:

Introduction of new varieties and species of soft fruits in Herzegovina
Development of fruits growing introducing of new genotypes of woodened fruits in area of Federation of B&H
Development of fruit growing introducing of new genotypes of soft fruits in area of Federation of B&H

Paper works::

Zovko, M., Vego, D., M. Zovko, 2010.: Pomološka svojstva autohtonih sorata jabuke na području Žepča, Glasnik zaštite bilja 1,
Vego, D., P. Šaravanja, Z. Knezović, 2009.: Fruit Thinning of Peach and Nectarine, XIth Symposium on Plant Bioregulators in Fruit Production, Acta Horticulturae (u pripremi),
Marinović, I., Vego, D., 2009.: Pomološka svojstva sorata šipka uzgajanih na području zapadne Hercegovine, Pomologia croatica, Vol. 15., 1-2,
Vego, D., 2008.: Wild fig (Ficus carica L. var. caprificus) in Herzegovina, Pomologia croatica Vol. 12, br.2.
Vego, D., Čović, I., Petrović, D., 2008.: Kemijska svojstva plodova smokve, Radovi Poljoprivredno-prehrambenog fakulteta Univerziteta u Sarajevu, 59/1.

Publications:

Vego, D., P. Šaravanja, Z. Knezović: Brošura Prorjeđivanje breskve i nektarine, Mostar, 2008.

Brošura Sajamske manifestacije Hercegovački plodovi Mediterana (smokva, šipak, maslina), Stolac 2008.-2010. (u pripremi)

Head of the research group: Professor Dijana Vego, PhD

Telephone: +387 36 337 102

E-mail: agronomski.fakultet@sve-mo.ba; dijana.vego@sve-mo.ba

Department of plant protection

Mission and goals: Scientific and professional project in area of plan protection, Laboratory service in diagnostician the plants disease and pests and Laboratory analysis of samples of soil and plant material on presence of nematodes (Globodera pallida i G. rostochiensis).

Measuring of concentration of pollen of the allergenic plants on area of Mostar.

Period of group's activity: 2006 onwards

Key projects since 2008 onwards:

Miličević, T., Ostojić, I., Zovko, M., (2009): Investigations of presence of the quarantines harmful organisms at potato producers farms on the area of Federation of B&H., Federal ministry of education and science B&H

Ostojić, I., et al. (2008-2009): Monitoring of Bemisia tabaci Genn. At the area of Federation B&H Finance by Federal ministry agriculture, water management and forestry B&H

Ostojić, I. et al. (2010): Monitoring program of potato nematodes (Globodera pallida i Globodera rostochiensis) in 2010.; Finance by Federal ministry agriculture, water management and forestry B&H

Head of the research group: Professor Ivan Ostojić, PhD

Telephone: +387 36337107

E-mail: ivano@sjemenarna.com

Department of pedology and plant nutrition

Mission and goals: Physical and chemical analysis of soils samples, Designing a pedagogical carts, Maintaining a soil fertility, Recommendation of soil nutrition, Diagnostician plant nutrient disorder, Professional and scientific research and Education and demonstration of various skills and techniques.

Period of group's activity: 2007 onwards

Key projects since 2008 onwards:

Rational nutrition of early potato with high quality (2008/2009) Finance by Federal ministry agriculture, water management and forestry B&H and World bank

Integrating growth and protection of geological origin of the potato varieties Poluranka (2009/10) Finance by Federal ministry agriculture, water management and forestry B&H

Map of utilization of soil values in area of HNŽ (2009) Finance by Federal ministry agriculture, water management and forestry B&H

Reaction of plants on abiotic stress conditions (2010/11) Financed by Federal ministry of education and science B&H.

Paper works;

Majić, Adrijana; Poljak, Milan; Sabljo Ana; Knezović, Zrinka; Horvat Tea. Efficiency of use of chlorophyll meter and Cardy-ion meter in potato nitrogen nutrition. // Cereal Research Communications. 36 (2008) ; 1431-1434 (članak, znanstveni)

Poljak, Milan; Horvat, Tea; Majić, Adrijana; Pospišil, Ana; Ćosić, Tomislav. Nitrogen management for potatoes by using rapid test methods. // Cereal Research Communications. 36 (2008) ; 1795-1798 (članak, znanstveni)

Horvat, Tea; Majić, Adrijana; Svečnjak, Zlatko; Jurkić, Vesna. Effects of foliar fertilization and water stress on yield and physiological characteristics of potato. // Cereal research communications. 36 (2008) ; 1659-1662 (članak, znanstveni).

Adrijana Majić, Milan Poljak, Ana Sabljo, Elma Tabaković, (2008) Utjecaj ishrane dušikom na mineralni sastav gomolja ranih sorata krumpira. 43. hrvatski i 3. međunarodni simpozij agronoma, Zbornik sažetaka, Opatija. 194-185. (sažetak, znanstveni rad)

Majić, A., Poljak, M., Sabljo, A., Sefo, E., Knezović, Z., (2009) Nitrate-Nitrogen Rates in Petiole Sap of Potato Crop (Solanum tuberosum L.). 7th International Workshop on Sap Flow. Seville. Acta Hort. No. 846 pp. 333-338 (međunarodna recenzija, znanstveni rad).

Majić, A., Poljak, M., Knezović, Z., Sabljo, A., Sefo, E., (2009) Chlorophyll Meter as diagnostic tool for nitrogen fertilization management in potato crop (Solanum tuberosum L.). 16th Nitrogen Workshop Turin, Italy. pp. 253-254.

Mesić Milan, Herceg Nevenko, Ćorić Radica, Kajić Nikolina, Šaravanja Paulina, Primorac Jurica, Jurković Dragan, Ćurković Matija: Utjecaj gnojidbe različitim količinama dušika na prinos I neke komponente prinosa jarog ječma // III Znanstveno-stručni skup „Poljoprivreda u zaštiti prirode i okoliša“ / 2010, Vukovar.

Mesić M, Herceg N, Knezović Zrinka, Ćorić Radica, Zgorelec Željka, Kajić Nikolina, Šaravanja Paulina, Jurišić Aleksandra, Ćurković Matija, Primorac Jurica: Influence of Nitrogen Fertilization on Spring Barley Yield, Soil and Water // ISTC Soil Protection Activities and Soil Quality Monitoring in SE Europe, June 18-19, 2009, Sarajevo

Head of the research group: Radica Ćorić, PhD Assistant

Telephone: +387 36 337 113

E-mail: radica.coric@sve-mo.ba

Department for recognition and control of raw and nutrition products

Mission and goals: Quality evaluation of raw and nutrition products, Implementation of new standards Education and Drafting professional and scientific projects.

Period of group's activity: 2008 onwards

Key projects since 2008 onwards:

„Exterior and genetic attribute of kupreške pramenke“. Financed by Federal ministry of education and science B&H, 2008. Project leader professor PhD Stanko Ivanković.

„Genotipization and cooperation of travničke (B&H) i belokranjske pramenke (SLO)„. Finance by ministry of civil business of Bosnia and Herzegovina. 2010. Project leader professor PhD Stanko Ivanković.

„Operative program of development of pig farming Federation B&H“. Finance by Federal ministry agriculture, water management and forestry B&H, 2008. – 2009. Project leader professor PhD Stanko Ivanković.

„Drafting of manual and translation of procedure for getting the origins marks or geological product origin“. Finance by Federal ministry agriculture, water management and forestry B&H, 2009. Project leader professor PhD Stanko Ivanković.

„Standardization of technology and chemical, physical and microbiological quality characteristics of autochthonous whitw pickled (Travnički) and hard (Livanjski) cheese in Bosnia and Herzegovina“. UCODEP - Italians nongovernmental organization. 2006-2008. Project leader professor PhD Stanko Ivanković.

„Reorientation of academic education in agriculture of south-east Europe – development of teaching programs in animal science and animal farming“(Project 7.). Program: „Institutional cooperation between Faculties Agriculture, Forestry and Medicine in Norway, B&H, Croatia and Montenegro“, 2006-2009. Project leader professor PhD Stanko Ivanković.

Paper works:

Ivanković, S., Ćurković, M., Batinić, V., Mioč, B., Ivanković, A. (2009): EKSTERIJERNE ODLIKE KUPREŠKE PRAMENKE. Stočarstvo 63 (3), 163-173. Hrvatsko agronomsko društvo. Zagreb. Republika Hrvatska.

Erbez, M., Rogić, Biljana, Ćurković, M., Kerpčarová, Vendula, Važić, B. (2009): TRADIČNÍ VÝROBKY Z OVČÍHO MLÉKA V BOSNĚ A HERCEGOVINĚ. Farmářská výroba sýrů a kysaných mléčných výrobků VI. Agronomická fakulta, Mendelova zemědělská a lesnická univerzita v Brně. Česká republika.

Ćurković, M., Batinić, V., Ivanković, S. (2009): Funkcija edukacijskog centra i rezervata Buhovo u revitalizaciji i očuvanju biogenoma. Zbornik radova konferencije „Stanje i perspektiva očuvanja autohtonih vrsta domaćih životinja u Bosni i Hercegovini“. Široki Brijeg, 06. ožujak 2009. Bosna i Herzegovina.

Head of the research group: Professor PhD Stanko Ivanković

Telephone: +387 36 337 103

E-mail: stanko.ivankovic@sve-mo.ba

Department of Chemistry, Biochemistry and Microbiology

Department was established 2007.

Laboratory analyses performed by the Department refer to the analysis of total nitrogen by Kjeldahl method and phosphorus, nitrate, nitrites and ammoniacal nitrogen spectrophotometric methods in various samples.

Department through educational and scientific process is transferring knowledge from basic and applied chemistry, and ecology, undergraduate students, graduate students. Moreover Department monitors and adopt new knowledge and insights in the field of chemistry, biochemistry and biotechnology.

Period of group's activity: 2007 onwards

Key projects since 2008 onwards:

Inceament of soil fertility using a symbiotic fixsator of nitrogen" Financed by Federal ministry agriculture, water management and forestry B&H 2008/2009- (Project leader Višnja Vasilj, cooperants: Sanja Sikora, Zrinka Knezović, Ivan Ostojić,Radica Ćorić,Adriana Majić, Elma Sefo).

Articles:

A. Ivanković, E. Velagić Habul, D. Hafner and Z. Knezović, (2010), Blidinje Lake – Some Chemical and Hydrobiological Characteristics, BALWOIS 2010 Ohrid, Macedonia

A. Ivankovic and D. Hafner (2010): Phytoplankton and Phytobenthos of Blidinje Lake (Bosnia and Herzegovina); Third Croatian Botanical Congress with international participation, Book of Abstracts, Murter, September 2010.

Head of the research group: Professor PhD Ivica Bošnjak

Telephone: +387 36 337 121

E-mail: Ivica.bosnjak@sve-mo.ba

Department of economic and management

Mission and goals: Business analysis and plans, Project managing, Business economy, Education, Market analysis and Making professional projects.

Period of group's activity: 2007 onwards

Key projects since 2008 onwards:

Sheep keeping development in function of promotion of autochthon cheese and meats; Strategy of agricultural development in rural area of B&H and analysis of current state and incomes of agriculture on family homestead of village Barane and Stjepan Križ.

Paper work:

Matić, M., Ivanković, M. i Bunoza, S. The viticulture and wine production in the function of multifunctional and rural development of agriculture (2010); Spužević, I., Trninić, V. i Vego, D. Poljoprivredni resursi za biljnu proizvodnju na području sela Barane i Stjepan Križ.

Head of the research group: Professor PhD Marko Matić

Telephone: +387 63 897633

E-mail: marko.matic@sve-mo.ba

Department of Botany, Vegetables and Landscaping

Through the educational process seeks to familiarize students with basic characteristics for a successful vegetable production and production of horticultural species, morphological and biological characteristics of the most important crops. Productive cooperation with other scientists and institutions in the country and abroad is achieved through a series of scientific research projects. Teachers strive to educate manufacturers to introduce new modern technology in production. Institute conducted a series of activities designed to preserve and protect the permanent disappearance of existing old domestic indigenous population's vegetables.

Period of group's activity:

On the 78th Faculty Council meeting held on 24.10.2006. the decision was made on the establishment of the Institute of Botany, gardening and horticulture, and on the 100th Faculty Council meeting held on 27.02.2009. for the head of the Institute was elected professor PhD. Zdravko Matotan in a term of two years.

Key projects since 2008 onwards:

Federal Ministry of Education and Science funded project: "Evaluation of experiments with the aim of improving the production of early vegetables" in 2008. Year.

As a result of the scientific - research there were produced two research papers: "Influence of transplant´s grafting on the yield of tomato grown in greenhouse« and „Influence of production technology on watermelon yield in southwest Herzegovina« and Results were presented on the 44th Croatian and 4th international symposium on agriculture, Opatija, Croatia, February, 16-20, 2009, where they were published at Book of abstracts. Complete work.

„Influence of production technology on watermelon yield in southwest Herzegovina« was published in the Journal of Agronomy 1/2010., ISSN 0002-1954, UDK 63, 15-25.

Members of the Institute also participated in the project: "Regional SEEDNet Project: Collection, characterization, and regeneration of local kale (Brassica oleracea var. acephala) population germplazm from eastern Adriatic coast region for their conservation in gene banks" (25/ 3/07- 15/09/ /08).

Head of the research group: Professor PhD Zdravko Matotan

Telephone: +387 36 337 102

E-mail: agronomski.fakultet@sve-mo.ba

Department of fishery, zoology and water protection

Mission and goals: Environmental study, Basic of fishery, Revision of basic of fishery, Writing a professional studies and Evaluation of fish fond, Protection measurement of fish fond and development of fishery, Studies of aquaculture, Measurements for promotion of aquaculture, Ecological studies, Research of air, water and soil pollution and Measurements for prevention of ecosystem.

Period of group's activity: 2006 onwards

Key projects since 2008 onwards:

Paper work:

Ivanković P., Treer T., Piria M., Knezović Z. (2010): Diet and growth of endemic Neretva chub Squqlius svallize from the Neretva river area, Bosnia and Herzegovina. Folia zoologica, 59, 1; 51-56, Brno, Chez Republic .

Sefo E., Matotan Z., Knezović Z., Majić A., Ivanković P., Ćorić R. (2010): Utjecaj tehnologije proizvodnje na prinos lubenica u jugozapadnoj Hercegovini. Agronomski glasnik 1/2010., ISSN 0002-1954, UDK 63, 15-25. Zagreb, Hrvatska

Matotan Z., Sefo E., Knezović Z., Ivanković P., Majić A. i Ćorić R.(2009): Utjecaj kalemljenja na prinos rajčice u zaštićenim prostorima. Zbornik sažetaka 44. hrvatskog i 4. međunarodnog simpozija agronoma 16. do 20. veljače 2009. Opatija, Hrvatska.

Head of the research group: Professor PhD Ivan Bogut

Telephone: +387 36 337 102

E-mail: agronomski.fakultet@sve-mo.ba

Department of vinge growing and vine production

Mission and goals: Writing a professional studies and evaluation of vine rootstock, Protection measurement of vine grape, Studies on vine production and Research of aboiotic and biotic factor on vine production.

Period of group's activity: 2009 onwards

Key projects since 2008 onwards:

Operative programme of development vine growing u Federation of B&H (2009/10) Federal ministry agriculture, water management and forestry B&H.

Head of the research group: Ms. Viktor Lasić

Telephone: +387 36 337 120

E-mail: viktor.lasic@sve-mo.ba

Current Cooperation Projects

Cooperation in education and research on mineral improved crop production for human and animal health in Balkan Countries

A paradigm shift towards production of safe, high-quality food and feed in Europe including Western Balkan has taken place because mineral content is an important quality aspect in avoiding mineral related health problems. Trace element deficiency in plants, for example, zinc and iron deficiency in Croatia, copper deficiency in pasture and blood of sheep in Bosnia and selenium (Se) deficiency in all regions of Balkan has been observed. The main objective of the project is to build competence of academic staff and students of the West Balkan universities on mineral improved crop production for better health through institutional collaboration with UMB and NVI. This collaboration will focus on enhancing the uptake of trace element content (e.g. zinc, iron, selenium) in the consumable crop parts to improve animal and human health. The innovative agronomical, plant physiological, and genetic and molecular mechanisms in plant uptake of trace elements and appropriate methods to increase the content in animal tissues will be tested. The practical oriented training of young staff (researchers, technicians, and administrative staff) and students will be focused. The expected output is the competence building of Balkan universities to enable them to take it over after project termination,

reports on nutritive values of food crops, scientific publications, and a stronger network within Balkan institutions and with UM B and NVI.

References:

Alvarez, J. M., Almendros, P. and Gonzalez, D. 2009: Residual effects of natural Zn chelates on navy bean response, Zn leaching and soil Zn status. Plant Soil. 317: 277-291

Ames, B.N. 2006: Low micronutrient intake may accelerate the degenerative diseases of aging through allocation of scarce micronutrients by triage. Proc. Nat. Acad. Sci.103: 17589-17594.

Antunović Z, Steiner Z, Steiner Z, Šperanda M, Domaćinović M, Karavidović P. 2005: Content of selenium and cobalt in soil, plants and animals in Eastern Slavonia. In: Proceedings XII International Conference Krmiva 2005, Opatija, Croatia, 6-9 June, p 204

Cakmak, I. 2008: Enrichment of cereal grains with zinc: Agronomic or genetic biofortification? Plant and Soil, 302: 1-17.

Cakmak, I., Kalayc1, M., Ekiz, H., Braun, H. J., and Y1lmaz, A. 1999: Zinc deficiency as apractical problem in plant and human nutrition in Turkey: A NATO-Science for Stability Project. Field Crops Res. 60:175-188.

Cakmak, I., Pfeiffer, W. H. and McClafferty, B. 2010: Biofortification of durum wheat with zinc and iron. Cereal Chem. 87: 10-20 .

Cakmak. I, Welch, R.M., Erenoglu, B., Romheld, V., Norvell, W.A. and Kochian, L.V. 2000: Influence of varied zinc supply on re-translocation of cadmium (109Cd) and rubidium (86Rb) applied on mature leaf of durum wheat seedlings. Plant Soil. 219:279-284112

Clemens S, Palmgren MG, Kramer U A, Long way ahead: understanding and engineering plant metal accumulation. Trends Plant Sci 7: 309-315(2002).

Dissanayake CB, Chandrajith R. 1999. Medical geochemistry of tropical environments. Earth Sci Rev 47:219-258.

Djukic, D., Stevovic, V., Djurovic, D., Ilic, O. The effect of organic fertilizer on biomass zield and quality of natural meadows. Options Mediterraneennes, Series A, No. 79: 431-434

EFSA. 2004: Guidance document of the Scientific Panel on Genetically Modified Organisms for the risk assessment of genetically modified plants and derived food and feed, September 2004. http://www.efsa.europa.eu/en/science/gmo/gmo_guidance/660.html .

Hall, J.A. , R. J. Van Saun, R.J., Nichols, T., W. Mosher, W.,G. Pireli, G. 2009. Comparison of selenium status in sheep after short-term exposure to high-selenium-fertilized forage or mineral supplement. Small Ruminant Research 82: 40–45

Jug I, Vukadinović V, Vukadinović V, Drenjančević M (2008) Mapping of the Maize Crop Chlorosis by GIS Technology and Chlorophyll Meter. 43rd Croatian and 3rd International Symposium on Agriculture. http://sa.agr.hr/2008pdf/sa2008_0506.pdf (assessed in June 2008) (in Croatian)

Kutman. U.B, Yildiz, B., Ozturk, L. and Cakmak, I. 2009: Biofortification of durum wheat with zinc through soil and foliar applications of nitrogen. Cereal Chem. . 87: 1-9.

Maksimović Z, Djujić I, Jović V,Ršumović M (1992) Selenium defeciency in Serbia and possible effects on health. Bulletin T. CV de l`Académie des Sciences et des Arts. Classe des Sciences mathématiques et naturelles. Sciences naturelles No 33:65-83

Mertz, W. (ed.) 1987. Trace Elements in Human and Animal Nutrition 5. ed., Vol. 1, Academic Press, Orlando.

Muratović S, Džomba E, Čengić-Džomba S, Crnkić Ć (2005) Sadrzaj bakra u tlo-biljka-ovca lancu na Nisici (Copper content in soil-plant-sheep continuum at Nisici Plateeau). Krmiva (Zagreb) 47(2):59-63 (in Bosnian)Muratović S, Džomba E, Čengić-Džomba S (2007) Selenium status u lactating cows fed organic and conventionally produced feed. Krmiva (Zagreb) 49(1):5-8 (in Bosnian)

Oliver D P, Schultz J E, Tiller K G, Wilhelm N S, Merry R H and Cozens G D 1994 The effects of zinc fertilization on cadmium concentration in wheat grain. J. Envir. Qual. 23, 705–711.

Pond, W.G., Church, D.C., Pond K.R. 1995. Basic Animal Nutrition and Feeding. 4.ed. John Wiley & sons, New York.

Radostits, O.M., Gay, C.C., Hinchcliff, K.W. et al. (Eds). (2007) Veterinary Medicine – A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs, and Goats. 10. Ed. Philadelphia: Saunders,. P.673-762

Reeves GP, Chaney RL. Bioavailability as an issue in risk assessment and management of food cadmium: a review. Sci Total Environ 2008;398:13–19

Smolders, E. and McLaughlin, M. J. 1996: Effect of Cl on Cd uptake by Swiss chard in nutrient solutions. Plant Soil, 179: 57-64.

Stein, A.J, Nestel, P., Meenakshi, J.V., Qaim, M., Sachdev, H.P.S., Bhutta, Z.A. 2007: Plant breeding to control zinc deficiency in India: how cost-effective is biofortification? Pub. Health Nutr. 10: 492-501

Stevanovic, D., Jakovljevic, M., Vrbnicanin, S., Acic, S. 2004: The hay chemical composition of Mt. Zlatibor natural grasslands as affected by soil composition. Acta Agriculturae Serbica 17: 235-241 (in Serbian)

Tan J, Zhu W, Wang W, Li R, Hou S, Wang D, Yang L. 2002. Selenium in soil and endemic diseases in China. Science of the Total Environment 284:227-235.

Vuckovic, S., Cupina, B., Simic, A., Prodanovic, S., Zivanovic, T. 2005: Effect of nitrogen fertilization and undersowing on yield and Quality of cynosuretum cristati-type meadows in hilly-mountainous grasslands in Serbia. Journal of Central European Agriculture 4 : 509-514

Wu, J., Norvell, W. A., Hopkins, D. G. and Welch, R. M. 2002: Spatial variability of grain cadmium and soil characteristics in a durum wheat field. Soil Sci. Soc. Am. J. 66: 268-275

Zuo, Y. and Zhang, F. 2009: Iron and zinc biofortification strategies in dicot plants by intercropping with gramineous species. A review. Agron. Sust. Dev. 29: 63-71

Contact person: Adrijana Filipović, Assistance PhD

Telephone: +387 36 337 107

E-mail: adrijana.majic@sve-mo.ba

Plant Health and Genetic Resources in South East Europe

The overall objective of project (2006-2009) was establishing expertise and facilities for conservation and use of plant genetic resources (PGR) in phytosanitary sound conditions in Herzegovina.

Project was organised in two working groups as separate independent units and joined overall goals and cooperation between institutions in BaH and with help from Norwegian partner. Main aims of WP Plant genetic resources & variety collection was collection, description and maintenance of genetic resources firstly grape wine and fruit along with vegetable and arable crops.

The results of this project were facilities and capacity for production of plants through tissue culture at the Agromediterranian Faculty at University "Džemal Bijedić" (Mostar) and a vegetative collection of indigenous varieties and genotypes of horticultural crops, mainly grape vines, at Faculty of Agriculture and Food Technology at University of Mostar. Short visits of the partners in Norway were also organised. Two graduate students made their graduate work through this project. Four workshops were organized two in Mostar, one in Norway and one in Germany.

Norwegian partners in these projects assisted to BaH universities in developing: methods for collection, description, evaluation, data gathering of plant genetic resources and maintenance of variety collection, good facilities for in-vitro work, improved competence in plant tissue culture and virus testing, good routines for in vitro work.

Project founded by Norwegian government.

Project was divided in two working groups:

1. Plant health and tissue culture:

Leading institution in Norway: Norwegian Institute for Agricultural and Environmental Research (Bioforksk), Ås Leader: Dr. Dag-Ragnar Blystad

Leading institution in SEE: University "Džemal Bijedić" in Mostar Faculty of Agromediterranian, Mostar, Leader: Prof. Dr. Semina Hadžiabulić

2. Plant genetic resources & variety collection:

Leading institution in Norway: Norwegian Genetic Resource Centre, Leader: Aasmun Asdal

Leading institution in SEE: Faculty of agriculture and food technology University of Mostar, Leader: Prof. Dr. Jure Beljo

We prepared new proposal for continuation of the project in 2010 and in 2011 we have received approval.

Contact person: PhD Full professor Jure Beljo
Telephone: +387 36 337 122

E-mail: jure.beljo@sve.mo.ba

Providing genetic diversity and healthy plants for the horticulture in Bosnia & Herzegovina

The project that started in 2011 consists of two parts: 1) Laboratory for detection and analysis of plant diseases using ELISA and PCR methods, managed by The University "Džemal Bijedić", and 2) Biodiversity preservation and genetic identification of grapevine and some fruit crops in Bosnia and Herzegovina, managed by The University of Mostar.

This project can be considered as a continuation of the project “Plant health and genetic resources” (2006-2009). The results of this former project were facilities and capacity for production of plants through tissue culture at the Agromediterranian Faculty at University "Džemal Bijedić" (Mostar) and a collection of indigenous varieties and genotypes of horticultural crops, mainly grape vines, at Faculty of Agriculture and Food Technology at University of Mostar.

This projects aims to secure the results from the former project and transform them into applicable plant material, facilities, technology and capacities for the development of horticulture in Bosnia & Herzegovina.

Project founded by Norwegian government.

Project leader from Norway: Dag-Ragnar Blystad

Coordinators in BaH: Prof. Dr. Semina Hadžiabulić, Faculty of Agromediterranian University "Džemal Bijedić" in Mostar, Prof. Dr. Jure Beljo, Faculty of Agriculture and Food Technology University of Mostar

Contact person: PhD Full professor Jure Beljo
Telephone: +387 36 337 122

E-mail: jure.beljo@sve.mo.ba

In addition to above described projects Faculty of Agriculture and Food technology in Mostar have close cooperation with Agromediterranean Faculty, University Džemal Bijedić of Mostar, Faculty of agriculture in Sarajevo, Faculty of Food Technology in Sarajevo and other faculty in similar fields as our that existing in B&H. Mostly cooperation’s goes through the project partnerships of professional education.

Conferences, Scientific Meetings and Seminars

Adjustment of agricultural sector to EU regulations

This conference has few presenters from different agricultural sector. First presenter was Ružica Gelo- deputy director of sector for agriculture, food industry and forestry; professor Davor Romić dean of Faculty of Agriculture in Zagreb: Mr. Jago Lasić, vice president of Chamber of commerce; Mrs Amela Alihodžić, director assistant in sector for harmonization of jurisdictions system Direction for EU-integration; Mr Dušan Nešković, deputy director of sector for agriculture, food industry, forestry and rural development Ministry of foreign trade and economic relations; Mr Pejo Janjić, adviser of federal minister of agricultural politic and international cooperation; professor PhD Željko Šuman, University of Mostar.

Date of event: 06. May 2008

Organiser: Dean PhD Stanko Ivanković

Telephone: +387 36 337 103

E-mail: stanko.ivankovic@sve.mo.ba

Co-organisers: Federal ministry agriculture, water management and forestry B&H

Herzegovinian fruit of Mediterranean

This ceremony is assigned to all producers of Mediterranean fruits like Meoble, Figs and Olive. Brief presentations are given by recognized specialist in this area of fruit growing. Themes of this ceremony are usually innovation of technique in fruit growing.

Date of event: This ceremony has started 10 October 2008, and it has been obtain each year in same period.

Organiser: Dean PhD Stanko Ivanković

Telephone: +387 36 337 103

E-mail: stanko.ivankovic@sve.mo.ba

The Agricultural Challenges in the Western Balkan Countries and the EU's Common Agricultural Policy—CAP

Presentations were about regulations and standards in EU starting with education of farmer, managing and financing in agriculture. Presenters were Franc Fishler – ex commissioner EU for agriculture.

Date of event: 21 May, 2010

Organiser: Dean PhD Stanko Ivanković

Telephone: +387 36 337 103

E-mail: stanko.ivankovic@sve.mo.ba

Bees' immunity and antibiotic substance

Karl Crailsheim, dean NAturwissenschattliche Fakultät, Graz; Presentation of bees' physiology for bees' hobists.

Date of event: 25 September, 2010

Organiser: Dean PhD Stanko Ivanković

Telephone: +387 36 337 103

E-mail: stanko.ivankovic@sve.mo.ba

UNIVERSITY OF SARAJEVO, FACULTY OF AGRICULTURE AND FOOD SCIENCES

Research Groups and Their Key Projects in the Last Two Years

Research group for plant genetic resources

The research groups consist out of ten researchers with expertise in various plant production fields as well as food processing and distillation. The material the team has mostly worked on is are the autochthonous B&H cultivars of fruit, vines and cereals.

Period of group's activity: 2004 onward

Key projects since 2008 onwards:

"Evaluation of fruit genetic resources in Bosnia-Herzegovina with the aim of sustainable, commercial utilization" – Programme in Higher Education, Research and Development in the Western Balkans 2010-2014 the Agriculture Sector (HERD/Agriculture); „Conservation and utilization of Plant Genetic Resources in South- East Europe area (SEEDNet)"; 2004-2011; project financed by SIDA (Swedish International Development Agency); ''Genetic and pomologic variability in the autochthonous gene fond of apple in B&H''; 2008-09; project financed by Ministry of Science, Education and Culture of Canton Sarajevo; ''Development of data base of autochthonous, plant, genetic resources in FB&H'', 2008; project financed by Ministry of economy of Canton Sarajevo; ''Genetic characterization of autochthonous chestnut in Bosnia and Herzegovina'', 2009-2010; project was financed by Federal ministry of Education and Science; „Antioxidant activity and stability of phenol compounds in fruits and vegetables, and their products", 2010-.... financed by Federal Ministry of Education and Sciences, Federation of Bosnia and Herzegovina; „Qualitative properties of buckwheat in different technologies production" 2009-2010.... financed by Federal Ministry of Education and Sciences, Federation of Bosnia and Herzegovina;

Head of the research group: Prof. Dr Mirsad Kurtović (contact person Dr. Fuad Gaši)

Telephone: +387 61 348 106

E-mail: fudo01@yahoo.com

Research group Fruit growing

Prof. Dr Mirsad Kurtović; Prof. Dr Senaid Memić; Doc. Dr Pakeza Drkenda; Doc. Dr Fikreta Behmen, Doc. Dr Asima Begić-Akagić, Dr. Sci. Fuad Gaši; Adnan Malićević, Dipl. Ing.- Fruit breeding, Agro – and Pomotechnics in Orchard; Pomology; Fruit Storage; Berry Fruits; Nursery production; Fruit genetic resources; Fruit processing.

Period of group's activity: 2006 onward

Key projects since 2008 onwards:

Operational Programme for the Development of Fruit of the Federation of Bosnia and Herzegovina. Ministry of Agriculture, Water management and Forestry, FB&H; Introduction of new genotypes of fruit-trees in the area of the FB&H Ministry of Agriculture, Water management and Forestry, FB&H;

Development of integral fruit production in area of Brčko District B&H. Government of Brčko District; Possibilities of protection fruit products as „traditional food". Ministry of Science, Education and Culture of Federation BH; Ecological systems of production in agricultural practise- Curriculum development and publishing of university book . Ministry of tourisms and ecology of FB&H; Evaluation of autochthonous genotypes of fruit. Ministry of Science, Education and Culture of Federation BH;

Head of the research group: Doc. Dr Pakeza Drkenda

Telephone: Office: +387 33 225 727; GSM:+387 61 356 039

E-mail: pakeza@bih.net.ba

Research group Animal nutrition, ecology and etology group

Focus on: Grasslands roughage utilization: potential, improvement, differences between cattle, sheep and goats; Environmental aspects of animal nutrition; Creation a map for mineral deficiencies in forage through B&H; Detecting toxic minerals and finding out solution for detoxify its; Animal feeding and functionally animal products; Organic farming and animal bioethics

Period of group's activity: 1997 onwards

Key projects since 2008 onwards:

Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) countries, 2006-2008; Environmental aspect of protein nutrition at dairy cow's farm Vitavi-Čapljina, 2008; Increasing of milk production on forage based dairy cows' rations at Brčko District: I and II phase. 2008-2009; Mineral improved food and feed crops for human and animal health, 2010-2013.

Head of the research group: Prof. dr. Salko Muratović

Telephone: +387 33 225 727

E-mail: msalko@.net.ba

Research group Animal breeding and genetics

Doc. dr. Muhamed Brka; Dipl. ing. Admir Dokso; Dipl. ing. Ervin Zečević; Mr Alma Rahmanović – animal breeding, conservative and molecular genetics.

Period of group's activity: 2008 onwards

Key projects since 2008 onwards:

Klimawandel als gesellschaftliche Herausforderung, Perspektiven aus verschiedenen Disziplinen; Register and preservation of autochthones breeds of Bosnia and Herzegovina – applied project; Polymorphism of the kappa casein gene in two Bosnian autochthonous cattle breeds – article; Scrapie – scientific research project; MarcBal – applied project; Genetic improving of cattle population in Brcko DC – applied project.

Head of the research group: Doc. dr. Muhamed Brka

Telephone: +387 33 225 727

E-mail: m.brka@ppf.unsa.ba

Research group Floristry and landscape design

The research group consists out of six researchers with expertise in genetics, plant production and landscape design. The material the team has mostly worked with is annual and biennial decorative plants. The members of the team have publicized results from their researches in domestic and international journals and symposiums.

Period of group's activity: 2006 onwards

Key projects since 2008 onwards:

Avdić J. (2008): Models of using polyploidy in annual flowering plants in landscape design. Financed by the Federal Ministry of Education and Sciences, Federation of Bosnia and Herzegovina; Avdić J. (2009.): Restoration and reconstruction as methods of restoration of green areas of „Velika aleja 21" Villa in Great Alley in Ilidža, Sarajevo.

Head of the research group: PhD Jasna Avdić

Telephone: +387 61 215 409

E-mail: jasnaa65@yahoo.de

Research group Fertilization and Plant Nutrition

Researchers in this group: Doc. dr. Hamdija Čivić – plant nutrition, Prof. dr. Elvedin Hanić – plant nutrition and plant physiology and Senad Murtić - plant physiology.

Period of group's activity: 2008-2010

Key projects since 2008 onwards:

Application of different models of nutrition in the integrated production of apples in order to protect public health and the environment; Composting straw, manure and plant residues from the farm in order to produce the substrate and environmental protection

Head of the research group: Doc. dr. Hamdija Čivić

Telephone: +387 33 225 727

E-mail: h.civic@ppf.unsa.ba ; civic.hamdija@bih.net.ba

Research group Chemistry in Food Sciences

The group has rooted in Cathedra for Chemistry at FAFS, aimed at joining human and material resources in the area of multiple interests: Prof. dr. Esma Velagić Habul, chemist. PhD in plant biochemistry, interaction soil-water-plants; Doc. dr. Enisa Omanović Mikličanin, chemist, PhD in analytical chemistry, chemiluminiscence sensors; Doc. dr. Nermina Spaho, food technologist, PhD in aroma active components based in fermentation and sensory analysis; Doc. dr. Zilha Ašimović, Chemist, PhD in biochemistry, trace elements; Doc. dr. Asima Begić Akagić, food technologist, PhD in enzymatic browning of fruits and vegetables in technology of food of plant origin.; Doc. dr. Sanja Oručević, PhD in chemistry of cereals (glutens); Doc dr. Bedrija Alić, chemist, PhD in veterinary sciences, food analysis; Mr. Josip Jurković, chemist, MA in analytical chemistry, trace analysis

Period of group's activity: Approximately 10 years

Key projects since 2008 onwards:

2009 – 2011: MA course „Food Analysis", DDS project WUS Austria; 2010-1011: Bioavailability and risk assessment of food colorants, additives and aromas. Bilateral project Slovenia – BiH (University of Maribor, Faculty of Medicine)

Head of the research group: Prof. dr. Esma Velagić Habul

Telephone: +387 33 225 727

E-mail: esma.velagic.habul@lmail.com

Research group Diary science, milk processing and cheese production

Zlatan Sarić, Ph.D., Tarik Dizdarević, M.S., Mersiha Alkić, M.S., Edita Kasumović, B.Sc., Nerma Džanović, technical staff; Dairy Science - Microbiology, Chemistry and Biochemistry

Period of group's activity: 2003 onwards

Key projects since 2008 onwards:

SEE-ERA.NET, Network Project (2007-2008): Use of lactic acid bacteria in production of hypoallergenic dairy products, and for the generation of mild antimicrobials; Creation of Guidelines and Implementation of Procedure for acquirement of PDO or PGI marks. Project of Ministry of Agriculture, Water-Management and Forestry FBiH. (2009); Norwegian SEE Programme: Institutional Collaboration Between Academic Institutions in Agriculture, Forestry and Veterinary Medicine in Norway and Bosnia & Herzegovina, Croatia and Serbia (2006-2009): Project 3: Standardization of Technology and Chemical, Physical and Microbiological Quality Characteristics of Autochthonous White Pickled (Travnički) and Hard (Livanjski) Cheese in Bosnia & Herzegovina.

Head of the research group: Zlatan Sarić, Ph.D., Associate Professor

Telephone: +387 33 225 727

E-mail: z.saric@ppf.unsa.ba

Current Cooperation Projects

Quality of pepper and tomato, depending on the region of growing

The project financed by **Federal Ministry of Education and Science**. The project realization is going in cooperation with: Institute for Horticulture and Viticulture, Department of Applied Plant Sciences and Plant Biotechnology at the University of Natural Resources and Applied Life Sciences, Vienna; Department of Applied Plant Sciences and Plant Biotechnology at the University of Natural Resources and Applied Life Sciences, Vienna; Biotechnical Faculty of University Ljubljana; Federal Agro-Mediterranean institute Mostar.

References:

Žnidarčič, Dragan; Ban, Dean; Oplanić, Milan; Karić, Lutvija; Požrl, Tomaž Influence of postharvest temperatures on physicochemical quality of tomatoes (Lycopersicon esculentum Mill.). // *Journal of food agriculture & environment*. 8 (2010) , 1; 21-25 (journal article).

SHALA-MAYRHOFER, V., KACIU, S., KARIC, L., JEZIK, K.(2010) : The influence of the location on the quality of peppers and tomatoes in Kosovo and Bosnia and Herzegovina. 28th International Horticultural Congress (IHC) 22-27.8.2010. Lisbon S13.062 (599)

Contact person: Doc. Dr. Lutvija KARIC

Telephone: +38733225727

E-mail: kariclutvija@yahoo.com

Antioxidant activity and stability of phenol compounds in fruits and vegetables, and their products

The aim of this project is to determine antioxidant activity of fruits, vegetables and their products such as fruit juice and nectar taken from Sarajevo market using method (DPPH;ABTS; FRAP). Correlation between antioxidant activity and phenol is also examined.

References: Faculty of Food technology J.J. Strossmayer University Osijek, Croatia

Contact person: Asima Begić-Akagić

Telephone: +387 33 22 57 27

E-mail: akagich@yahoo.com

Trace elements in fodder crops and animal health and production, 2010-2013

Trace elements (Se, Fe, Zn deficiency in plants has been found in regions of SEE countries.

In intensive farm animal production unfavourable level of microelements in feed crops is solved by addition of necessary microelements as additives to animal feed. Thus, via eating animal meat, human population is also provided by microelements which sometimes are not at adequate level in other food. However, organic and extensive farming systems, which are mostly based on pasture as a source of proteins, cellulose, and essential microelements for animals, very often do not provide satisfactory level of Se and other microelements.

Animal studies will be carried with the aim to find an appropriate method to reduce Cu and Cd content and to increase the content of Fe, Zn and Se in animal tissues in the region.

References:

Norwegian SEE programme in agriculture, forestry and veterinary medicine:

- Mineral improved food and feed crops for human and animal health, 2010-2013.
- Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) countries 2005-2008

Contact person: Doc. dr. Emir Džomba

Telephone: +387 33 225 727

E-mail: e.dzomba@ppf.unsa.ba

Survey of autochthonous Prunus domestica populations in the South-East Europe countries. Regional SEEdNet project

Regional SEEdNet project financed by SIDA-Sweden, Regional project together with institutions in Croatia, Serbia, Romania, Monte Negro, Albania, Macedonia

References: Project coordinator

Contact person: Pakeza Drkenda

Telephone: Office: 387 33 225 727; GSM: +387 61 356 039

E-mail: pakeza@bih.net.ba

Influence of apples on human body anti oxidative status

Financed Ministry of Education and Sciences of Federation Bosnia and Herzegovina and cooperated with the Biotechnical Faculty in Ljubljana (Slovenia)

References: Project coordinator

Contact person: Pakeza Drkenda

Telephone: Office: 387 33 225 727; GSM: +387 61 356 039

E-mail: pakeza@bih.net.ba

Evaluation of autochthonous genotypes of fruit

Financed Ministry of Education and Sciences of Federation Bosnia and Herzegovina and cooperated with the Biotechnical Faculty in Ljubljana (Slovenia)

References: Project coordinator

Contact person: Pakeza Drkenda

Telephone: Office: 387 33 225 727; GSM: +387 61 356 039

E-mail: pakeza@bih.net.ba

Mineral improved food and feed crops for human and animal health

The FAFS research team: Doc. dr. Mirha Đikić – crop production; Doc. dr. Drena Gadžo – crop production; Doc. dr. Hamdija Čivić – plant nutrition; Prof. dr. Salko Muratović – animal nutrition; Doc. dr. Emir Džomba – animal nutrition; Mr. Teofil Gavrić – crop production; Dženan Hadžić – animal nutrition.

References:

The project partner: Norwegian University of Life Science (UMB), Department of Plant and Environmental Sciences (IPM), Ås

Contact person:. Mirha Đikić

Telephone: +387 33 225 727

E-mail: m.djikic@ppf.unsa.ba ; djikicmirha@bih.net.ba

„Food Analysis“(2008-2011), WUS Austria

MA course in Food Analysis, which has provided opportunity of cooperation in the area of food analysis. Beside aspects of education (visiting professors) exchanging visits of stuff have permitted exchanging of experiences in research (HPLC analysis of food components).

References: University of Vienna (Department of Chemistry) , Graz University of Technology (Institute for Food chemistry and technology), „Karl Frances“ University of Graz.

Contact person: Esma Velagić Habul

Telephone: +387 33 225 727

E-mail: esma.velagic.habul@lmail.com

Bioavailability and risk assessment of food colorant, additives and aromas (2010-2011) Bilateral Slovenia (University of Maribor) – BiH project (FAFS)

The exchanged visit assure work on availability of pelargidin and carotens (compounds with antioxidative effect), food colorants. SLO-side will work on biological (availability) aspects, B&H on chemistry aspects.

References:

University of Maribor, Faculty of Medicine

Contact person: Esma Velagić Habul

Telephone: +387 33 225 727

E-mail: esma.velagic.habul@lmail.com

Content determination of volatile low molecular compounds in model system and samples subjected to Maillard reaction (2010 – 2011).

Studding of contribution of water originated from Maillard reaction to total water content in food.

References: University of Hohenheim, Stuttgart

Contact person: Josip Jurković

Telephone: +387 33 225 727

E-mail: josssjurkovic@yahoo.com

Manufacture of Traditional B&H Cheeses with Selected Indigenous Bacterial Cultures and Technological Parameters as Basis for Industrial Production

Institutional collaboration between academic institutions in Agriculture, Forestry and Veterinary Medicine in Norway, Bosnia & Herzegovina, Croatia, Serbia and Montenegro in period 2010-2013.

Program supported under the program: Norwegian SEE Programme in Agriculture, Forestry and Veterinary medicine.

References: UMB, Aas, Norway, Faculty of Agriculture, Zagreb, Croatia; Biotechnical Faculty, Domžale, Slovenia; Faculty of Agriculture, Novi Sad, Serbia

Contact person: Zlatan Sarić, Ph.D., Associate Professor

Telephone: +387 33 225 727

E-mail: zsaric@ppf.unsa.ba

Evaluation of fruit genetic resources in Bosnia-Herzegovina with the aim of sustainable, commercial utilization

Programme in Higher Education, Research and Development in the Western Balkans 2010-2014 the Agriculture Sector (HERD/Agriculture)

The goals of the project are following:

- To assess the genetic diversity and genetic relationships of autochthonous cultivars of apple, pear and plum using SSR markers.
- To evaluate important commercial, agronomic traits within the analysed groups of genotypes and to put the information in a database,
- To evaluate the sensory characteristics and characteristics important for food processing industry of the fruit collected from the analysed cultivars.
- To evaluate sensory characteristics and characteristics important for food processing industry of the distillates, juices and jams obtained by processing the autochthonous fruits.
- To make the data gathered through the above mentioned analyses available to the local food processing industry.

Contact person: Dr. Fuad Gaši

Telephone: +387 61 348 106

E-mail: fudo01@yahoo.com

Conservation and utilization of Plant Genetic Resources in South- East Europe area (SEEDNet)

The main objective of SEEDNet is long-term conservation and sustainable utilization of the diversity of PGR within the region through a well-coordinated network of functional national programs. The

network activities comprise ex and in situ conservation, utilization of PGR, and institution and capacity building. (read more on http://www.seednet.nu/)

Project period 2004-2011 is financed by SIDA (Swedish International Development Agency)

Contact person: Dr. Fuad Gaši

Telephone: +387 61 348 106

E-mail: fudo01@yahoo.com

In addition to above described projects Faculty of Agriculture and Food science in Sarajevo cooperate:

- in implementation of the sector projects at national level; cooperation in the implementation of international projects aimed to improvement of high education (e.g. TEMPUS) with Faculty of Agriculture and Food Technology, University of Mostar;
- in implementation of the sector projects at national level with Agro-Mediterranean Faculty, University "Dzemal Bijedic" Mostar;
- in realization of undergraduate study programs with Biotechnical faculty, University of Bihac
- in implementation of international projects aimed to improvement of high education (e.g. TEMPUS) with Faculty of Agriculture, University of Banja Luka;

There is no cooperation with Faculty of Agriculture, University of East Sarajevo.

Conferences, Scientific Meetings and Seminars

Scientific-expert conference on agriculture and food industry

The scientific-expert conference with international participation (Western Balkan countries, Slovenia, Albania, Turkey...). The conference basic aim is transfer of knowledge and technologies to agriculture and food industry. The conference works through 4 sections: Plant production, animal production, Food technology, and Agro-economics, resources, and rural development.

Date of event: End of September – Beginning of October, yearly, 3 days

Organiser: Faculty of Agriculture and Food Sciences, University of Sarajevo

Telephone: +387 33 22 57 27

E-mail: podrska@ppf.unsa.ba

Co-organisers: From 2011 Faculty of Agriculture, Ege University, Turkey

CROATIA

UNIVERSITY OF JOSIP JURJ STROSSMAYER IN OSIJEK, FACULTY OF AGRICULTURE

Research Groups and Their Key Projects in the Last Two Years

Department of Agroecology

Key projects since 2008 onwards:

Projects:

Physiological mechanisms of plant tolerance to abiotic stress (079-0559_leader: prof. dr. Tihana Teklic);

Soil conditioning impact on nutrients and heavy metals in soil-plant continuum (079-0450_lader:. Zdenko Loncaric)

Sugar beet nutrition by nitrogen depending on the soil traits genotype (079-1933_leader:. Suzana Kristek)

Bilateral Projects:

Soil Chemical Properties Impact on Heavy Metals Availability and Concentrations in Field Crops; Heavy metals from farm to fork (protection of food chain), leader:. Zdenko Loncaric and. Imre Kadar.

Articles:

Lisjak, Miroslav; Srivastava, Nupur; Teklić, Tihana; Civale, Leon; Lewandowski, Kuiama; Wilson, Ian; Wood, Mark E.; Whiteman, Matt; Hancock, John T.: A novel hydrogen sulfide donor causes stomatal opening and reduces nitric oxide accumulation. Plant Physiology and Biochemistry. 48 (2010) 12; 931-935.

Parađiković, N., Teklić, T., Vinković, T., Kanižai, G., Lisjak, M., Mustapić-Karlić, J., Bućan, L. (2010.): The incidence of BER-aff ected tomato fruits under influence of the form of N fertilizer. Journal of Food, Agriculture & Environment. 8(1): 201-205.

Teklić, T., Špoljarević, M., Stanisavljević, A. Lisjak, M., Vinković, T., Parađiković, N., Andrić, L., Hancock, J. (2010.): Assessment of the influence of different sample processing and cold storage duration on plant freeproline content analyses. Phytochemical analysis 21(6): 561-565.

Teklić, Tihana; Vratarić, Marija; Sudarić, Aleksandra; Kovačević, Vlado; Vukadinović, Vladimir; Bertić, Blaženka: Relationships among Chloroplast Pigments Concentration and Chlorophyllmeter Readings in Soybean under Influence of Foliar Magnesium Application. Communications in Soil Science and Plant Analysis. 40 (2009) , 1; 706-725

Lončarić, Zdenko; Popović, Brigita; Engler, Meri; Karalić, Krunoslav; Rastija, Domagoj; Teodorović, Bojana: Four-year dynamic of potassium on two sites interpreted by different soil tests. Communications in Soil Science and Plant Analysis. 40 (2009) , 1/6 S.I.; 854-870

Teklić, Tihana; Vukadinović, Vladimir; Bertić, Blaženka; Lončarić, Zdenko: Comparability of Electroultrafiltration and Ammonium Acetate-Lactate Extraction Data for Phosphorus and Potassium in Pseudogley Soils. Communications in Soil Science and Plant Analysis. 40 (2009) , 1; 599-609

Đurđević, Boris; Lisjak, Miroslav; Stošić, Miro; Engler, Meri; Popović, Brigita: Influence of Pb and Cu toxicity on lettuce photosynthetic pigments and dry matter accumulation. Cereal Research Communications. 36 (2008) , Suppl. 5 Part 3; 1951-1954.

Lisjak, Miroslav; Stanisavljević, Aleksandar; Špoljarević, Marija; Đurđević, Boris: Potassium rate and accompanying anions impact on potassium, calcium and magnesium uptake by strawberries in soilless culture. Cereal Research Communications. 36 (2008) , 1 (S5); 483-486

Department of Agroeconomics

Key projects since 2008 onwards:

Projects:

The development of a multispectral model of family farming in rural areas (079-3573_leader:. Krunoslav Zmajic)

Market and Economic Aspects of Animal Products of Improved Quality (079-3582_leader:. Zdravko Tolusic)

Identification of economic activities in rural development function (079-2073_leader:. Bozidar Petrac).

Bilateral projects:

Regional universities as a generator of development in Croatian and Hungarian border regions (IPA 2007-2013, UNIREG IMPULSE_leaders:. Krunoslav Zmaic, doc. dr. Tihana Sudaric,. Snjezana Tolic)

Articles:

Tolić, Snježana; Zmaić, Krunoslav; Gluhak, Irena; Požega, Željko: Stress Identifiers of Disease in Croatian Rural Economy. Cereal research communications. 37 (2009) ; 605-608

Zmaić, Krunoslav; Sudarić, Tihana; Arežina, Marko: The Aspects of Agricultural Production serving as a function of Sustainable Development of the Vukovar-Srijem County. Cereal research communications. 36 (2008) , 5; 1763-1767;

Lončarić, Ružica; Deže, Jadranka; Ranogajec, Ljubica: Economic aspects of organic agriculture in east Croatia. *Cereal Research Communications*. 36 (2008) ; 335-338

Department of Plant Production

Key projects since 2008 onwards:

Projects:

Wheat germplasm identification using SSR markers (079-0268_leader:. Sonja Maric)

Genotype and stress conditions in production of quality wheat and barley seeds (079-0259_leader:. Vlado Guberac)

Selection of red clover for nodulation, yield and quality improvement (079-0272_leader:. Gordana Bukvic)

Overcoming limits for maize growing on acid soil by fertilization and breeding (079-0447_leader:. Vlado Kovacevic

Increase in sugar content in beet choosing genotype and agricultural operations (079-3534_ leader:. Andrija Kristek)

Cover/catch crops in organic crop production (079-2199_leader:. Bojan Stipesevic)

Obtaining high-yield and high-quality field pea (Pisum sativum L.) cultivars (079-0275_leader:. Mirko Stjepanovic)

Water Resource Management of Irrigation in Eastern Croatia (079-0191_leader:. Jasna Sostaric)

Reduced tillage and fertilization for wheat and soybeans in North East Croatia (079-0575_leader:prof.dr. Ivan Zugec).

Bilateral projects:

Microsatellite markers in wheat breeding (leaders: prof. dr. Sonja Maric and. Hermann Buerstmayer)

Assessing genetic and phenotypic diversity in wheat breeding materials adapted to the environmental conditions of the Carpathian Basin (leaders:. Sonja Maric and dr. Ildiko Karsai)

The alternative crop nutrient sources for organic crop production and soil properties improvement (leaders:. Bojan Stipesevic and Laszlo Levai)

Overcoming of some environmental limitation for field crops growing under conditions of Hungary and Croatia (leaders:. Vlado Kovacevic and. Márton Jolánkai)

Sustainability of summer second crops for bioenergy needs (leaders:. Bojan Stipesevic and dr. Snezana Mladenovic-Drinic)

Adaption of soil management practice and cultivar of field crops to global climatic change (leaders:. Vlado Kovacevic and. Aleksandar Paunovic)

Education, Research and Training for Global Environmental Change and Sustainable Management of Natural Resources in Western Balkans (NORAGIC; leader:. Mirko Stjepanovic)

Network for the development of plant genetic resources in South-eastern Europe (SEEDNet; vegetable working group leader:. Nada Parađikovic)

Articles:

Irena Jug, Danijel Jug, Mirjana Sabo, Bojan Stipešević; Miro Stošić: Winter wheat yield and yield components as affected by soil tillage systems. Turkish journal of agriculture and forestry. 35 (2011); 1-7

Jug, Danijel; Stipešević, Bojan; Jug, Irena; Stošić, Miro; Teodorović, Bojana: Influence of weather conditions and soil tillage treatments on weed infestation in winter wheat-soybean crop rotation. Cereal Research Communications. 37 (2009) , Suppl. 1; 375-378

Stipešević, Bojan; Jug, Danijel; Jug, Irena; Tolimir, Miodrag; Cvijović, Milica: Winter wheat and soybean zinc uptake in different soil tillage systems. Cereal Research Communications. 37 (2009) , 2; 305-310

Bertić, Blaženka; Jug, Irena; Jug, Danijel; Vukadinović, Vesna; Engler, Meri: The effect of year, genetic and morphologic specificity at the kernel mass, chemical composition and vigour of the maize seed. Cereal Research Communications. 36 (2008) , 2; 927-930

Jug, Danijel; Brmež, Mirjana; Ivezić, Marija; Stipešević, Bojan; Stošić, Miro: Effect of Different Tillage Systems on Populations of Common Voles (Microtus arvalis Pallas, 1778). Cereal Research Communications. 36 (2008) 2(S5); 923-926

Jug, Irena; Jug, Danijel; Vukadinović, Vladimir; Stipešević, Bojan; Vukadinović, Vesna: The influence of the temperature and hybrid on accumulation of dry matter and N, P, K content in maize seedlings in controlled conditions. Cereal Research Communications. 36 (2008) , 2 (S5); 931-934

Čupić, Tihomir; Popović, Svetislav; Tucak, Marijana; Stjepanović, Mirko: AMMI analysis of grain yield of dry pea genotypes in the varying rainfall conditions. Cereal Research Communications. 36 (2008) , Suppl. 5 Part 1; 647-650

Gantner, Ranko; Stjepanović, Mirko; Gantner, Vesna: Precipitation and Temperature Effects upon Grain Yield of Field Pea. Cereal Research Communications. 36 (2008) ; 1503-1506

Eđed, Andrijana; Horvat, Dražen; Petrović, Sonja: Methods of Multivariate Statistics for Interpretation Genotype-Environment Interaction. Cereal Research Communications. 36 (2008) , 1(S5); 259-262

Kovačević, Vlado; Rastija, Mirta; Šimić, Branimir; Andrić, Luka; Kaučić, Dražen: Phosphorus and potassium fertilization impacts on yield and nutritional status of maize. Cereal Research Communications. 36 (2008) , Part 1 Suppl. 5; 43-46

Lalić, Alojzije; Kovačević, Josip; Šimić, Gordana; Guberac, Vlado; Novoselović, Dario: Spring Barley Genotypes Traits Regarding Genotype : Environment Interaction to Croatian Environments. Cereal Research Communications. 36 (2008) , S5, Part 3; 1487-1490

Marić, Sonja; Guberac, Vlado; Petrović, Sonja; Drezner, Georg; Dvojković, Krešimir: Effects of Testing Environments and Crop Density on Winter Wheat Hectolitre Weight. Cereal Research Communications. 36 (2008) , 2 (S1); 1391-1394

Petrović, Sonja; Marić, Sonja; Guberac, Vlado; Drezner, Georg; Eđed, Andrijana: Influence of Environmental Conditions and Sowing Rates on WInter Wheat Yield. Cereal Research Communications. 36 (2008) , 2 (S1); 1307-1310

Kovačević, Vlado; Stojić, Biserka; Rastija, Mirta; Brkić, Ivan; Drezner, Georg: Response of maize, wheat and barley to phosphorus and potassium fertilization. Cereal Research Communications. 37 (2009) , S1; 129-132

Šimić, Domagoj; Kovačević, Vlado; Šimić, Branimir; Rengel, Zed: Genotypic Differences among Maize Inbred Lines in Phosphorus Fertilizer Responsiveness on Soils Differing in Acidity. Communications in Soil Science and Plant Analysis. 40 (2009) ; 816-825

Šimić, Domagoj; Sudar, Rezica; Ledenčan, Tatjana; Jambrović, Antun; Zdunić, Zvonimir; Brkić, Ivan; Kovačević, Vlado: Genetic variation of bioavailable iron and zinc in grain of a maize population. Journal of Cereal Science. 50 (2009) , 3; 392-397

Rozman, V., Bukvic, G., Liska, A., Balicevic, R., Eđed, A., Petrovic, S. (2010): Differences in traits of seeds and seedlings of perennial rygrass cultivars after nine months of storage at different temperatures. Not. Bot. Hort. Agrobot. Cluj 38(1): 155-158

Parađiković, Nada; Teklić, Tihana; Vinković, Tomislav; Kanižai, Gabriella; Lisjak, Miroslav; Mustapić-Karlić, Jadranka; Bućan, Lovre: The incidence of BER-affected tomato fruits under influence of the form of N fertilizer. Journal of food agriculture & environment. 8 (2010) , 1; 201-205

Teklić, Tihana; Špoljarević, Marija; Stanisavljević, Aleksandar; Lisjak, Miroslav; Vinković, Tomislav; Parađiković, Nada; Andrić, Luka; Hancock, John: Assessment of the Influence of Different Sample Processing and Cold Storage Duration on Plant Free Proline Content Analyses. Phytochemical analysis. 21 (2010) , 6; 561-565

Baličević, Renata; Parađiković, Nada; Ćosić, Jasenka; Jurković, Draženka; Šamota, Davor: Influence of Substrate in Biological Control of Tomato Seedlings against Rhizoctonia Solani and Pythium Debaryanum. Cereal Research Communications. 36 (2008) , S5; 1499-1502

Milaković, Zlata; Kanižai, Gabriella; Krstanović, Vinko; Parađiković, Nada; Šamota, Davor: Efficiency of earthworm humus-lumbripost on soil biogenity in production (Helianthus annuus L.). Cereal Research Communications. 36 (2008) , 1 (S5); 583-586

Parađiković, Nada; Teklić, Tihana; Vinković, Tomislav; Baličević, Renata; Lepeduš, Hrvoje: Influence of K excessive soil and plant supply on Ca deficiency in pepper fruits (Capsicum annuum L.). Cereal research communications. 36 (2008) , 3 (S5); 1563-1566

Teklić, Tihana; Engler, Meri; Cesar, Vera; Lepeduš, Hrvoje; Parađiković, Nada; Lončarić, Zdenko; Štolfa, Ivna; Marotti, Tatjana; Mikac, Nevenka; Žarković, Neven: Influence of excess copper on lettuce (Lactuca sativa L.) grown in soil and nutrient solution. Journal of Food Agriculture and Environment. 6 (2008) , 3-4; 439-444

Teklić, Tihana; Hancock, John T.; Engler, Meri; Parađiković, Nada; Cesar, Vera; Lepeduš, Hrvoje; Štolfa, Ivna; Bešlo, Drago: Antioxidative responses in radish (Raphanus sativus L.) plants stressed by copper and lead in nutrient solution and soil. Acta Biologica Cracoviensia series Botanica. 50 (2008) , 2; 79-86

Vinković, Tomislav; Parađiković, Nada; Lepeduš, Hrvoje; Štolfa, Ivna; Teklić, Tihana: Oxidative stress in radish plants grown on soils with different Cu and Pb level. Cereal Research Communications. 36 (2008) , Supplement 5 Part 3; 1519-1522

Department of Chemistry

Key projects since 2008 onwards:

Projects:

Structure-activity relationship of flavonoids (079-3211_leader:. Dragan Amic)

Articles:

Amić, Dragan; Lučić, Bono: Reliability of bond dissociation enthalpy calculated by the PM6 method and experimental TEAC values in antiradical QSAR of flavonoids. Bioorganic & medicinal chemistry. 18 (2010) , 1; 28-35

Tanabe, Kazutoshi; Lučić, Bono; Amić, Dragan; Kurita, Takio; Kaihara, Mikio; Onodera, Natsuo; Suzuki, Takahiro: Prediction of carcinogenicity for diverse chemicals based on substructure grouping and SVM modelling. Molecular diversity. 14 (2010) ; 789-802

Amić, Dragan; Lučić, Bono; Kovačević, Goran; Trinajstić, Nenad: Bond dissociation enthalpies calculated by the PM3 method confirm activity cliffs in radical scavenging of flavonoids. Molecular diversity. 13 (2009) , 1; 27-36

Lučić, Bono; Trinajstić, Nenad; Zhou, Bo: Comparison between the sum-connectivity index and product-connectivity index for benzenoid hydrocarbons. Chemical physics letters. 475 (2009) , 1-3; 146-148

Rastija, Vesna; Medić-Šarić, Marica: QSAR study of antioxidant activity of wine polyphenols. European Journal of Medicinal Chemistry. 44 (2009) , 1; 400-408

Rastija, Vesna; Medić-Šarić, Marica: QSAR modelling of anthocyanins, anthocyanidins and catechins as inhibitors of lipid peroxidation using 3-dimensional descriptors. Medicinal Chemistry Research. 18 (2009) , 7; 579-588

Rastija, Vesna; Nikolić, Sonja; Medić-Šarić, Marica. Molecular modelling of wine polyphenols. Journal of Mathematical Chemistry. 46 (2009) , 3; 820-833

Rastija, Vesna; Srečnik, Goran; Medić-Šarić, Marica: Polyphenolic composition of Croatian wines with different geographical origins. Food Chemistry. 115 (2009) , 1; 54-60

Department of Soil Chemistry, Biology and Physics

Key projects since 2008 onwards:

Projects:

Model for assessing the land suitability for permanent plantations (079-2770_leader:. Vladimir Vukadinovic)

Cultivation of Galega orientalis – new fodder leguminous plant in Croatia (079-0332_leader:. Zlata Milakovic).

Bilateral projects:

Plant production systems in function of winter wheat yield stability and environment protection (leaders:. Irena Jug and. Dragisa Milosev)

Articles:

Irena Jug; , Danijel Jug; , Mirjana Sabo; , Bojan Stipešević; Miro Stošić: Winter wheat yield and yield components as affected by soil tillage systems. Turkish journal of agriculture and forestry. 35 (2011) ; 1-7

Stipešević, Bojan; Jug, Danijel; Jug, Irena; Tolimir, Miodrag; Cvijović, Milica: Winter wheat and soybean zinc uptake in different soil tillage systems. Cereal Research Communications. 37 (2009) , 2; 305-310

Teklić, Tihana; Vukadinović, Vladimir; Bertić, Blaženka; Lončarić, Zdenko: Comparability of Electroultrafiltration and Ammonium Acetate-Lactate Extraction Data for Phosphorus and Potassium in Pseudogley Soils. Communications in Soil Science and Plant Analysis. 40 (2009) , 1; 599-609

Bertić, Blaženka; Jug, Irena; Jug, Danijel; Vukadinović, Vesna; Engler, Meri: The effect of year, genetic and morphologic specificity at the kernel mass, chemical composition and vigour of the maize seed. Cereal Research Communications. 36 (2008) , 2; 927-930

Jug, Irena; Jug, Danijel; Vukadinović, Vladimir; Stipešević, Bojan; Vukadinović, Vesna: The influence of the temperature and hybrid on accumulation of dry matter and N, P, K content in maize seedlings in controlled conditions. Cereal Research Communications. 36 (2008) , 2 (S5); 931-934

Vukadinović, Vladimir; Vukadinović, Vesna; Stipešević, Bojan; Jug, Irena; Kraljičak, Željko: Determination of land suitability for plant production. Cereal Research Communications. 36 (2008) , 2; 935-938

Parađiković, Nada; Teklić, Tihana; Vinković, Tomislav; Kanižai, Gabriella; Lisjak, Miroslav; Mustapić-Karlić, Jadranka; Bućan, Lovre: The incidence of BER-affected tomato fruits under influence of the form of N fertilizer. Journal of food agriculture & environment. 8 (2010) , 1; 201-205

Bukvić, Željko; Kralik, Davor; Milaković, Zlata; Bogut, Ivan; Miloš, Sanja: Employment of Sugar Beet Head for Biogas Production. Cereal research communications. 36 (2008) , 1(S); 575-578

Kanižai, Gabriella; Milaković, Zlata; Krstanović, Vinko; Šeput, Miranda; Kralik, Davor: Ecologically acceptable use of manure in silage corn production. Cereal Research Communications. 36 (2008) , 1 (S5); 587-590

Milaković, Zlata; Kanižai, Gabriella; Krstanović, Vinko; Parađiković, Nada; Šamota, Davor: Efficiency of earthworm humus-lumbripost on soil biogenity in production (Helianthus annuus L.). Cereal Research Communications. 36 (2008) , 1 (S5); 583-586

Lončarić, Zdenko; Karalić, Krunoslav; Popović, Brigita; Rastija, Domagoj; Vukobratović, Marija: Total and plant available micronutrients in acidic and calcareous soils in Croatia. Cereal Research Communications. 36 (2008) , 1 (S5); 331-334

Rastija, Mirta; Šimić, Domagoj; Bukvić, Gordana; Rastija, Domagoj; Đurđević, Boris: Phosphorus, calcium and magnesium status in maize genotypes grown on acid soil. Cereal Research Communications. 36 (2008) , S; 1303-1306

Department of Wildlife, Fishery and Beekeeping

Key projects since 2008 onwards:

Projects:

Epizootiological researches of parasitic diseases of wildlife in eastern Croatia (079-3590_leader:. Tihomir Florijancic);

Articles:

Beck, Relja; Beck, Ana; Lučinger, Snježana; Florijančić, Tihomir; Bošković, Ivica; Marinculić Albert: Trichinella pseudospiralis in pig from Croatia. Veterinary Parasitology. 159 (2009) , 3-4; 304-307

Florijančić, Tihomir; Opačak, Anđelko; Bošković, Ivica; Jelkić, Dinko; Ozimec, Siniša; Bogdanović, Tanja; Listeš, Irena; Škrivanko, Mario; Puškadija, Zlatko: Heavy metal concentrations in the liver of two wild duck species : influence of species and gender. Italian Journal of Animal Science. 8 (2009) , S3; 222-224

Puškadija, Zlatko; Mijić, Anto; Florijančić, Tihomir; Ozimec, Siniša; Opačak, Anđelko: Influence of biotic and abiotic environmental conditions on sunflower (Helianthus annuus L.) grain yield. Cereal Research Communications. 37 (2009) , Suppl 1; 105-108

Antunović, Boris; Mancuso, Alberto; Capak, Krunoslav; Poljak, Vedran; Florijančić, Tihomir: Background to the preparation of the Croatian Food Safety Strategy. Food Control. 19 (2008) , 11; 1017-1022

Đidara, Mislav; Šperanda, Marcela; Florijančić, Tihomir; Bošković, Ivica; Šperanda, Tomislav: Blood characteristics of Red Deer hinds (Cervus elaphus) from confined area. Cereal Research Communications. 36 (2008) , 3 (S5); 1407-1410

Florijančić, Tihomir; Opačak, Anđelko; Janicki, Zdravko; Marinculić, Albert; Puškadija, Zlatko: The impact of habitat on distribution of Giant liver fluke (Fascioloides magna) in eastern Croatia. Ceraeal research communications. 36 (2008) , S5; 1543-1546

Škrivanko, Mario; Hadžiosmanović, Mirza; Cvrtila, Željka; Zdolec, Nevijo; Filipović, Ivana; Kozačinski, Lidija; Florijančić, Tihomir; Bošković, Ivica: The hygiene and quality of hare meat (Lepus europaeus Pallas) from Eastern Croatia. Archiv für Lebensmittelhygiene. 59 (2008) , 5; 180-184

Šperanda, Marcela; Florijančić, Tihomir; Bošković, Ivica; Bogut, Ivan; Gutzmirtl, Hrvoje; Grgurić, Dražen; Senčić, Đuro; Antunović, Zvonko: The effects of organic selenium and mannan oligosaccharides on the productivity and health of pheasant chicken (Phasianus colchicus). Acta Veterinaria-Beograd. 58 (2008) , 1; 63-73

Department of Mechanization

Key projects since 2008 onwards:

Projects:

An innovative and environmentally friendly spray application techniqes (079-1936_leader:. Đuro Banaj)

GIS technology application in crop science - digital thematic maps (079-3588_leader:. Mladen Jurisic)

Ecological, economic and technical aspects of cultivation and storage of silage corn (079-3571_leader:. Robert Zimmer)

Articles:

Banaj, Đuro; Tadić, Vjekoslav; Plaščak, Ivan; Stojčević, Z: Damage of seminal maize hybrid in harvesting and husking. Cereal Research Communications. 36 (2008) , Part 3 Suppl. 5; 1895-1898

Kraljević, Drago; Šumanovac, Luka; Plaščak, Ivan: Wheat and Barley Yiels Affected by the Rotation of Oilseed Rape as the Preceding Crop. Cereal research communications. 36 (2008) ; 1511-1514

Plaščak, Ivan; Puvača, Vladimir; Jurišić, Mladen; Rapčan, Irena; Duvnjak, Vinko: Influence of Mineral and Organic Fertilizer on Primary Contamination of the Ground Waters in Eastern Croatia. Cereal Research Communications. 36 (2008) , S1; 151-154

Šumanovac, Luka; Spajić, I.; Kiš, Darko; Kraljević, Drago: Dynamics and deposit of spray droplets disintegrated by the nozzles of a tractor-mounted sprayer. Cereal Research Communications. 36 (2008) , S5; 791-794

Voća, N., Krička, T., Januić, V., Jukić, Ž., Matin, A., Kiš, D.: Fuel properties of biodiesel produced from different raw materials in Croatia. Strojniški vestnik-journal of mechanical engineering, Vol. 54(3): 232-244.

Department of Agriculture Technique

Key projects since 2008 onwards:

Projects:

The Efficiency of Technical Systems and Environmental Preservation (079-2071_leader:. Tomislav Juric)

Articles:

Plaščak, Ivan; Jurić, Tomislav; Emert, Rudolf: Application of Ferrography in Condition Based Maintenance. Strojarstvo : časopis za teoriju i praksu u strojarstvu. 52 (2010) 2; 233-240

Kraljević, Drago; Šumanovac, Luka; Plaščak, Ivan: Wheat and Barley Yiels Affected by the Rotation of Oilseed Rape as the Preceding Crop. Cereal research communications. 36 (2008) ; 1511-1514

Šumanovac, Luka; Spajić, I.; Kiš, Darko; Kraljević, Drago: Dynamics and deposit of spray droplets disintegrated by the nozzles of a tractor-mounted sprayer. Cereal Research Communications. 36 (2008) , S5; 791-794

Department of Special Zootechnique

Key projects since 2008 onwards:

Projects:

Analysis and genetic evaluation of longevity in dairy cattle (079-3565_leader:. Sonja Jovanovac)

Pig and Poultry Growth Characteristics and Quality of Products (079-0567_leader:. Gordana Kralik)

Early prediction of pig carcass and meat quality (079-0184_leader:. Goran Kušec)

Shortening of Breeding Period of Carp (Cyprinus carpio) and Improvement of Meat (079-3542_leader:. Ivan Bogut)

Bilateral projects:

Reorientation of Academic education in Agriculture in SE Europe-Curriculum-Development in Animal Breeding and Animal Husbandry (Norwegian project 7_leader:. Gordana Kralik)

Articles:

Kralik, Gordana; Vladimir, Margeta; Suchy, Pavel; Strakova, Eva: Effects of dietary supplementation with rapeseed and linseed oil on the composition of fatty acids in porcine muscle tissue. Acta veterinaria (Brno). 79 (2010) , 3; 363-367

Gajčević, Zlata; Kralik, Gordana; Has-Schön, Elizabeta; Pavić, Valentina: Effects of organic selenium supplemented to layer diet on table egg freshness and selenium content. Italian Journal of Animal Science. 8 (2009) , 2; 189-199

Kralik, Gordana; Gajčević, Zlata; Suchý, Pavel; Straková, Eva; Hanžek, Danica: Effects of Dietary Selenium Source and Storage on Internal Quality of Eggs. Acta Veterinaria (Brno). 78 (2009) , 2; 219-222

Margeta; Vladimir; Kralik, Gordana; Dovč, Peter; Jakšić, Damir; Margeta, Polona: A simple DNA based method for determination of pure Black Slavonian pigs. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 92-94

Suchy, Pavel; Strakova, E.; Herzig, Ivan; Steinhauser, Ladislav; Kralik, Gordana; Zapletal, David: Chemical composition of bone tissue in broiler chickens intended for slaughter. Czech Journal of Animal Science. 54 (2009) , 7; 324-330

Wellbrock, Wiebke; Oosting, Simon Jenne; Bock, Bettina Barbara; Antunović, Boris; Kralik, Gordana: Harmonization of welfare standards for the protection of pigs with the EU rules: the case of Croatia. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 21-38

Has-Schön, Elizabeta; Škrtić, Zoran; Kralik, Gordana: Beneficial effects of different dietary oils on cholesterol level and fatty acids profile of turkey pectoral muscle. Italian Journal of Animal Science. 7 (2008) , 2; 161-171

Kralik, Gordana; Gajčević, Zlata; Škrtić, Zoran: The effect of different oil supplementations on laying performance and fatty acid composition of egg yolk. Italian Journal of Animal Science. 7 (2008) , 2; 173-183

Kralik, Gordana; Škrtić, Zoran; Suchy, Pavel; Strahova, Eva; Gajčević, Zlata: Feeding fish oil and linseed oil to laying hens to increase the n-3 PUFA of egg yolk. Acta veterinaria (Brno). 77 (2008) , 4; 561-568

Kušec, Goran; Đurkin, Ivona; Petričević, Antun; Kralik, Gordana; Maltar, Zlata; Margeta, Vladimir: Carcass leanness of pigs in Croatia estimated by EU referent method. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 249-251

Kušec, Goran; Kralik Gordana; Djurkin Ivona; Baulain Urlich; Kallweit Erhardt: Optimal slaughter weight of pigs' assesed by means of asymmetric S-curve. Czech Journal of Animal Science. 53 (2008) , 3; 98-105

Department of Animal Husbandry

Key projects since 2008 onwards:

Projects:

Nutrition aspects of modelling of sheep productivity and metabolic profile (079-0255_ leader:. Zvonko Antunovic)

Analysis and genetic improvement of sport horse breed in Croatia (079-0601_leader:. Mirjana Baban)

The Pure Nutritive Substances in the Portion Optimising of the Monogastric Anima (079-3598_leader:. Matija Domacinovic)

Utilization of manure and leguminous plants in generation of energy (079-3579_leader:. Davor Kralik)

Characteristics of milk flow at machine milking of cows (079-3572_leader:. Pero Mijić)

Natural Immuno Modulators and Antioxidants in Optimizing of Pigs Breeding (079-3438_leader:. Marcela Speranda)

Bilateral projects:

Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) Countries (leader: prof. dr. Zdenko Steiner)

Conservation, improvement and utilisation of animal genetic resources in Serbia and Croatia (leaders:. Pero Mijic and. Vladan Bogdanovic)

Imunomodulatirs in swine meat Production (Leaders:. Marcela Speranda and. Dragan Sefer).

Articles:

Antunović, Zvonko; Grbavac, Jozo; Bogut, Ivan; Senčić, Đuro; Mioč, Boro; Baban, Mirjana; Pintar, Jasna: Schlachtkörpereigenschaften bei der Schafrasse Pramenka nach Alter und Geschlecht. Tierärztliche Umschau. 65 (2010) 3; 104-110

Antunović, Zvonko; Steiner, Zdenko; Vegara, Mensur; Šperanda, Marcela; Steiner, Zvonimir; Novoselec, Josip: Concentration of selenium in soil, pasture, blood and wool of sheep. Acta veterinaria (Beograd). 60 (2010) , 2-3; 263-271

Antunović, Zvonko; Domaćinović, Matija; Šperanda, Marcela; Liker, Branko; Mioč, Boro; Šerić, Vatroslav; Šperanda, Tomislav: Effect of roasted cereals and soybean in feed mixtures on fattening and slaughter traits as well as blood composition in fattening lambs.Archiv fur Tierzucht - Archives of Animal Breeding. 52 (2009) , 5; 512-526

Mioč, Boro; Vnučec, Ivan; Prpić, Zvonimir; Pavić, Vesna; Antunović, Zvonko; Barać, Zdravko: Effect of breed on mineral composition of meat from light lambs. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 273-275

Novoselec, Josip; Antunović, Zvonko; Šperanda, Marcela; Steiner, Zvonimir; Šperanda, Tomislav: Changes of thyroid hormones concentration in blood of sheep depending on age and reproductive status. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 208-210

Šperanda, Marcela; Domaćinović, Matija; Šerić, Vatroslav; Šperanda, Tomislav; Antunović, Zvonko; Liker, Branko; Đidara, Mislav; Popović, Iva; Popović, Maja: Blutchemie bei den von Direkt-Gefütterten Mikroben (dfm) Betroffenen Broilern. Tierarztliche Umschau. 64 (2009) , 1; 36-39

Popović, Iva; Tominac, Mirna; Popović, Maja; Muljačić, Ante; Valpotić, Hrvoje; Šperanda, Marcela; Vlahović, Ksenija; Kezić, Dubravko; Špoljarić, Daniel; Valpotić, Ivica: Zuchtung von schweinischer Haut für Transplantation. Tierärztliche Umschau. 64 (2009) , 1; 29-35

Popović, Maja; Tominac, Mirna; Vlahović, Ksenija; Kezić, Dubravko; Šperanda, Marcela; Grabarević, Željko; Popović, Iva; Pirkić, Boris; Šeol, Branka; Valpotić, Ivica: In vitro cultivation of porcine limbal stem cells. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 125-127

Valpotić, Hrvoje; Šuran, Jelena; Prevendar Crnić, Andreja; Šperanda, Marcela; Đidara, Mislav; Valpotić, Ivica; Božić, Frane: Stimulation by levamisole of cell-mediated immunity in weaned pigs. Italian journal of animal science. 8 (2009) , Suppl. 3; 122-124

Šperanda, Marcela; Florijančić, Tihomir; Bošković, Ivica; Bogut, Ivan; Gutzmirtl, Hrvoje; Grgurić, Dražen; Senčić, Đuro; Antunović, Zvonko: The effects of organic selenium and mannan oligosaccharides on the productivity and health of pheasant chicken (Phasianus colchicus). Acta Veterinaria-Beograd. 58 (2008) , 1; 63-73

Šperanda, Marcela; Šperanda, Tomislav; Đidara, Mislav; Antunović, Zvonko; Rastija, Vesna: The effects of differently prepared natural zeolite clinoptilolite on weaned piglets. Cereal research communications. 36 (2008) , 3 Suppl S; 1547-1550

Kapš, Miroslav; Čurik, Ino; Baban, Mirjana: Modeling variance structure of body shape traits of Lipizzan horses. Journal of animal science. 88 (2010) , 9; 2868-2882

Antunović, Boris; Baban, Mirjana; Dobranić, Vesna; Margeta, Vladimir; Mijić, Pero; Njari, Bela; Pavičić, Željko; Poljak, Vedran; Steiner, Zvonimir; Wellbrock, Wiebke: Influence of housing systems on stillbirth and mortality rate in preweaning pigs farrowed by different gilt breeds. Italian Journal of Animal Science. 8 (2009) , Suppl. 3; 193-195.

Baban, Mirjana; Čurik, Ino; Antunović, Boris; Čačić, Mato; Korabi, Nidal; Mijić, Pero: Phenotypic Correlations of Stride Traits and Body Measurements in Lipizzaner Stallions and Mares. Journal of equine veterinary science. 29 (2009) , 6; 513-518

Bošnir, Jasna; Puntarić, Dinko; Novosel, Vlasta; Klarić, Ivana; Miškulin, Maja: Organochlorine pesticide residues in cows' milk from Karlovac county, Croatia. *Acta alimentaria*. 39 (2010) , 3; 317-326

Spajic, Robert; Burns, T. Robert; Moody, B. Lara; Kralik, Davor; Poznic, Vladimir; Bishop G: Engleski. Transactions of the asabe. 53 (2010) , 4; 1245-1250

Bukvić, Željko; Kralik, Davor; Milaković, Zlata; Bogut, Ivan; Miloš, Sanja: Employment of Sugar Beet Head for Biogas Production. Cereal research communications. 36 (2008) , 1(S); 575-578

Kanižai, Gabriella; Milaković, Zlata; Krstanović, Vinko; Šeput, Miranda; Kralik, Davor: Ecologically acceptable use of manure in silage corn production. Cereal Research Communications. 36 (2008) , 1 (S5); 587-590

Kralik, Davor; Bukvić, Željko; Kukić, Srećko, Uranjek, Nataša; Vukšić, Marko: Sudanska trava kao energetska biljka za proizvodnju bioplina. Cereal research communications. 36 (2008) , 1(S); 579-582

Department of Plant Protection

Key projects since 2008 onwards:

Projects:

Nematodes as bioindicators of the ecological health of soils (079-0265_leader:. Mirjana Brmez)

Fusarium head blight and DON content in grains and meal (079-0578_leader:. Jasenka Cosic)

Corn hybrid tolerance to western corn rootworm larval feeding (079-2708_leader:. Marija Ivezic)

Role of weeds in diseases epidemiology of arable crops (079-2995_leader:. Drazenka Jurkovic)

Control of stored grains by physical measures (079-0427_leader:. Irma Kalinovic)

Integrated Arable Crop Protection From Weeds (079-2716_leader:. Mira Knezevic)

Biological control of European corn borer (Ostrinia nubilalis Hübner) (079-2208_leader:. Emilija Raspudic)

Bioactivities of essential oils compounds in stored product protection (079-0430_leader:. Vlatka Rozman)

Monitoring of aeroallergens and model for suppression of allergenic plants (079-0261_leader:. Edita Stefanic)

Bilateral projects:

Market study for biologically grown fruit and vegetables, and medicinal herbs (Institut GTZ-Germany_ leader:. Davor Samota)

System of organic production and labelling procedures and certification of various food products (FAO_TOP/CRO_2092 _leader:. Davor Samota)

TEMPUS-International Joint Master Degree in Plant Medicine (158875_TEMPUS-IT-JCPR Joint Project-Curricular Reform_leader:. Edita Stefanic)

Articles:

Ivezić, Marija; Raspudić, Emilija; Brmež, Mirjana; Majić, Ivana; Brkić, Ivan; Tollefson, Jon J.; Bohn, Martin; Hibbard, Bruce E.; Šimić, Domagoj: A review of resistance breeding options targeting western corn rootworm (Diabrotica virgifera virgifera LeConte). Agricultural and Forest Entomology. 11 (2009); 307-311

Raspudić, Emilija; Ivezić, Marija; Brmež, Mirjana; Majić, Ivana: Susceptibility of Croatian maize hybrids to European corn borer. Cereal Research Communications. 37 (2009) , Suppl. 1; 177-180

Brmež, Mirjana; Ivezić, Marija; Raspudić, Emilija; Rozman, Vlatka; Sudarić, Tihana: Effect of Chemical Treatments on Soil Nematode Community in Winter Wheat Field. Cereal Research Communications. 36 (2008) , 1(S1); 223-226

Ivezić, Marija; Majić, Ivana; Raspudić, Emilija; Brmež, Mirjana: Occurrence of Soil and Plant Nematodes in Soybean under Cereal Rotation. Cereal Research Communications. 36 (2008) , 1 (S5); 431-434

Majić, Ivana; Ivezić, Marija; Raspudić, Emilija; Gantner, Vesna: Effect of Soybean Cultivar on Endoparasitic Nematodes and Arbuscular Mycorrhizal Fungi Relationship. Cereal Research Communications. 36 (2008) , 3 (S); 1823-1826

Purar, Božana; Bekavac, G.; Jocković, D.; Toth E. T.; Kalman, L.; Raspudić, Emilija; Dimitrijević, M: Corn Reddening: Occurrence, Symptoms and Field Observations. Cereal Research Communications. 37 (2009) , 1; 121-129

Ćosić, Jasenka; Drezner, Georg; Vrandečić, Karolina; Španić, Valentina; Poštić, Jelena: Effect of Fusarium culmorum head blight on yield and DON accumulation. Cereal Research Communications. 36 (2008) , Suppl. B; 481-482

Ćosić, Jasenka; Jajić, Igor; Vrandečić, Karolina; Jurković, Draženka; Poštić, Jelena: Fusarium graminearum Schw. – pathogenicity to wheat seedlings and ears and ability to produce DON. Cereal Research Communications. 36 (2008) , Suppl. B; 483-484

Ćosić, Jasenka; Vrandečić, Karolina; Šimić, Branimir; Poštić, Jelena; Baličević, Renata: Fusarium species isolated from plant debris in eastern Croatia. Cereal Research Communications. 36 (2008) , 1(S5); 55-58

Svitlica, Brankica; Ćosić, Jasenka; Šimić, Branimir; Jurković, Draženka; Vrandečić, Karolina; Purar, Božana; Telic, Tamara: Pathogenicity of Fusarium species to maize ears. Cereal Research Communications. 36 (2008) , Suppl. B; 543-544

Španić, Valentina; Ćosić, Jasenka; Dvojković, Krešimir; Marić, Sonja; Guberac, Vlado; Drezner, Georg: Effect of fungicide and Fusarium head blight treatment on grain yield of winter wheat. Cereal Research Communications. 36 (2008) , Suppl. B; 299-300

Vrandečić, Karolina; Jurković, Draženka; Latković, Rajka; Poštić, Jelena: Pathogenicity of Diaporthe/Phomopsis species for soybean. Cereal Research Communications. 36 (2008.) ; 63-66

Baličević, Renata; Parađiković, Nada; Ćosić, Jasenka; Jurković, Draženka; Šamota, Davor: Influence of Substrate in Biological Control of Tomato Seedlings against Rhizoctonia Solani and Pythium Debaryanum. Cereal Research Communications. 36 (2008) S5; 1499-1502

Knežević, Mira; Ranogajec, Ljubica; Šamota Davor: Effects of soil tillage and herbicides on weeds and winter wheat yields. // Cereal Research Communications. 36 (2008) Part 3 Suppl. 5; 1403-1406

Parađiković, Nada; Teklić, Tihana; Vinković, Tomislav; Baličević, Renata; Lepeduš, Hrvoje: Influence of K excessive soil and plant supply on Ca deficiency in pepper fruits (Capsicum annuum L.). Cereal research communications. 36 (2008) , 3 (S5); 1563-1566

Vayias, Bill, J.; Athanassiou, Christos, G.; Korunić, Zlatko; Rozman, Vlatka: Evaluation of natural diatomaceous earth deposits from South Eastern Europe for stored-grain protection: The effect of particle size. Pest management science. 65 (2009) , 10; 1118-1123

Kalinović, Irma; Korunić, Zlatko; Rozman, Vlatka; Liška, Anita; Hamel, Darka: Effect of Cineole Fumigation of Space Differently Occupied with Stored Pest Infested Wheat. Cereal research communications. 36 (2008) , 2(S5); 963-966

Rozman, Vlatka; Korunić, Zlatko; Kalinović, Irma; Liška, Anita; Hamel, Darka: Bioactivity of Cineole against Rice Weevil (Sitophilus Oryzae L.) on Stored Wheat. Cereal research communications. 36 (2008) , 2(S5); 959-962

Rašić, Sanda; Štefanić, Edita; Štefanić, Ivan: Plants for bees Slyibum marianum. Journal of apicultural research. 48 (2009) , 4; 296-299

Štefanić, Edita; Rasić, Sanda; Merdić, Sanja; Čolaković, Krunoslav: Annual variation of airborne pollen in the city of Vinkovci, northeastern Croatia. Annals of Agricultural and Environmental Medicine. 14 (2007) , 1; 97-101

Current Cooperation Projects

Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) countries

Project with Norway (SEE/WB program), University of Life Science, As.

Contact person: prof.dr.sc. Zdenko Steiner

E-mail: zdenko.steiner@pfos.hr

Education, Research and Training for Global Environmental Change and Sustainable Management of Natural Resources in Western Balkans

Project with Norway (SEE/WB program), University of Life Science, As.

Contact person:. sc. Vlado Kovačević

E-mail: vlado.kovacevic@pfos.hr

Reorientation of Academic Education in Agriculture in SE Europe - Curriculum Development in Animal Breeding and Animal Husbandry

Project with Norway (SEE/WB program), University of Life Science, As.

Contact person:. sc. Gordana Kralik

E-mail: gkralik@pfos.hr

International joint master degree in Plant Medicine

158875-Tempus-IT-Tempus-JPCR; project leader Faculty of Agriculture, University of Bari, Italy.

Contact person: prof.dr.sc. Edita Štefanić

E-mail: estefanic@pfos.hr

Sustainable preservation of indigenous South East European legumes and their traditional food and feed products

SEE-ERA NET; project leader University of Novi Sad, Faculty of Agriculture

Contact person: prof.dr.sc. Mirko Stjepanović

E-mail: mstjepanovic@pfos.hr

Other important forms of cooperation:
Currently at Faculty we have four bilateral projects with partners from Hungary and six with partners from Serbia.

Conferences, Scientific Meetings and Seminars

International Symposium of Agriculture

Participants: University Josip Juraj Strossmayer in Osijek, Faculty of Agriculture, Croatia, University of Zagreb, Faculty of Agriculture, Croatia, Balkan Environmental Association (B.EN.A), European Irrigation Association (EIA), European Society of Agricultural Engineers (EurAgEng), International Society of Food, Agriculture and Environment (ISFAE), International Soil Tillage Research Organisation (ISTRO).

Countries: Bosnia and Herzegovina, Slovenia and Romania

Date of event: Each year ever since 1965

Organiser: University Josip Juraj Strossmayer in Osijek, Faculty of Agriculture, Croatia and University of Zagreb, Faculty of Agriculture, Croatia

Co-organisers:

Ministry of Science, Education and Sports of the Republic of Croatia, Ministry of Agriculture, Forestry and Water Management of the Republic of Croatia, Ministry of Regional Development, Forestry and Water Management of the Republic of Croatia, Balkan Environmental Association (B.EN.A)

European Irrigation Association (EIA), European Society of Agricultural Engineers (EurAgEng), International Society of Food, Agriculture and Environment (ISFAE), International Soil Tillage Research Organisation (ISTRO), Faculty of Agriculture and Food Technology, University of Mostar, BIH, Biotechnical Faculty, University of Ljubljana, Slovenia, Faculty of Agriculture and Life Sciences, University of Maribor, Slovenia, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania.

International Symposium KRMIVA

Participants: Krmiva d.o.o. Zagreb, Faculty of Agriculture in Zagreb, Faculty of Agriculture in Osijek

Countries: Slovenia, Hungary, Poland, Czech Republic, Macedonia and Bosnia and Herzegovina

Date of event: Each year since 1993

Organiser: Krmiva d.o.o. Zagreb and Croatian Feed producers, technologists and nutritionists association University Josip Juraj Strossmayer in Osijek, Faculty of Agriculture, Croatia

Co-organisers:

Faculty of Veterinary Medicine in Zagreb, Faculty of Biotechnology in Domžale, Slovenia, Faculty of Animal, Science University of Kaposvar, Kaposvar – Hungary, Faculty of Biology and Animal Science of Wroclaw, University of Environmental and Life sciences, Wroclaw – Poland, University of Veterinary and Pharmaceutical Sciences, Brno - Czech Republic, Faculty of Agriculture in Sarajevo, Bosnia and Herzegovina, Faculty of Agriculture, Skopje, Macedonia and Faculty of Veterinary Medicine, Sarajevo, Bosnia and Herzegovina.

Animal Science Days

Participants: University of Zagreb, Faculty of Agriculture, Department of Animal Science, Zagreb

University of J. J. Strossmayer, Faculty of Agriculture, Osijek, Croatia

Countries: Hungary, Italy and Slovenia

Date of event: Each year since 1992

Organiser: University of Zagreb, Faculty of Agriculture, Department of Animal Science, Zagreb and University of J. J. Strossmayer, Faculty of Agriculture, Osijek, Croatia

Co-organisers:

Kaposvár University, Faculty of Animal Science, Kaposvár, Hungary, University of Padova, Department of Animal Science, Padova, Italy and University of Ljubljana, Biotechnical Faculty, Zootechnical Department, Domžale, Slovenia

UNIVERSITY OF ZAGREB, FACULTY OF AGRICULTURE

Research Groups and Their Key Projects in the Last Two Years

The research work, as well as its monitoring and reporting at the FAZ is not organized through research groups but individual projects. Very good insight in the FAZ research profile can be obtained from its numerous research projects funded by the Croatian Ministry of Science, Education and Sports.

The list of 93 active research projects including name of pricnipal researcher, topic and abstract is available on: (http://www.agr.hr/cro/istrazivanja/projekti.htm).

Contact details of each researcher are available on: (http://www.agr.hr/cro/imenik/index.htm).

Current Cooperation Projects

TEMPUS JEP 41143_2006 "Support Network for Improvement of the Strategic Planning" (SuNISP)

Introduction to strategic planning (education and experience exchange) - case study: "Research Strategic Plan".

References: http://www.agroedu.net/sunisp/

Contact person: prof. dr. sc. Ivan Pejić

Telephone: +385 1 239 3936

E-mail: ipejic@agr.hr

JERP project "Characterisation and tracking the origin of specific features of traditional cheeses in Western Balkans Region (RegTraC)"

Reference number: ERA 133/01; within Joint Call of SEE-ERA.NET PLUS

Contact person: Prof. dr. sc. Jasmina Havranek

Telephone: +385 1 239 3848

E-mail: jasmina.havranek@azvo.hr

JERP project "Impact of Oilseed rape (OSR) production on functional biodiversity of predators and decomposers – development of management strategies for conservation and improvement in Croatia, Germany and Serbia"

Reference number: ERA 51/01; within Joint Call of SEE-ERA.NET PLUS

Contact person: doc. dr. sc. Tanja Gotlin Čuljak

Telephone: +385 239 3968

E-mail: tgotlin@agr.hr

JERP project "Preservation and establishment of true-to-type and virus free material of endangered grapevine cultivars in Croatia and Montenegro"

Reference number: ERA 91/01; within Joint Call of SEE-ERA.NET PLUS

Contact person: prof. dr. sc. Ivan Pejić

Telephone: +385 1 239 3936

E-mail: ipejic@agr.hr

JERP project "Conservation and Sustainable Exploitation of indigenous Medicinal and Aromatic plants traditionally used in the SEE, WB countries. A model approach for Sideritis spp. (Mountain tea)"

Reference number: ERA 135/01; within Joint Call of SEE-ERA.NET PLUS

Contact person: Prof. dr. sc. Zlatko Šatović

Telephone: +385 (0)1 239 3935

E-mail: zsatovic@agr.hr

Conferences, Scientific Meetings and Seminars

46th Croatian and 6th International symposium of Agriculture

The main goal of the Symposium is to present to the agronomists and the general public the results of scientific and professional work of Croatian and international specialists and in this way enable a better transfer of scientific and professional achievements into agricultural production. We also wish to establish better collaboration between scientists from the universities, research institutions and specialists from industry, trade and other related activities, that is, producers from Croatia, Europe and the rest of the World in their common field of interest in science and agricultural practice.

In last 46 years Symposium was attended by participants from over 20 countries.

Date of event: February; 5 days event; annually, since 1965

Organiser: Prof. Milan Pospišil, Ph.D.; Department of Field Crops, Forage and Grassland

Telephone: + 385 1 239 3701

E-mail: mpospisil@agr.hr

Co-organisers: Faculty of Agriculture, University "Josip Juraj Strossmayer" in Osijek, Balkan Environmental Association (B.EN.A), European Society of Agricultural Engineers (EurAgEng), International Soil Tillage Research Organisation (ISTRO), Faculty of Agriculture and Food Technology, University of Mostar, Bosnia and Herzegovina, Biotechnical Faculty, University of Ljubljana, Slovenia, Faculty of Agriculture and Life Sciences, University of Maribor, Slovenia and University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania

International symposium: "Actual Tasks on Agricultural Engineering"

The aim of the Symposium is to present the latest scientific results on all aspects of research, design and development work in the various disciplines of agricultural engineering.

During last years the Symposium achieved more international meaning thanks to co-sponsoring of EurAgEng, CIGR, AAAE and AAESEE. Papers from Symposium's proceedings are indexed into world's

famous databases as ISI Proceedings (part of the ISI's Web of Knowledge), ISI - Index to Scientific & Technical Proceedings, CABI Agricultural Engineering Abstracts, InterDok and Cambridge Scientific Abstracts - Conference Papers Index.

Date of event: February; 5 days event; Annually since 1972

Organiser: Prof. Silvio Košutić, Ph.D.; Department of Agricultural Engineering

Telephone: + 385 1 239 3714

E-mail: skosutic@agr.hr

Co-organisers: Faculty of Agriculture, University J. J. Strossmayer, Osijek, Croatia, Faculty of Agriculture and life sciences, University of Maribor, Slovenia, Agricultural Institute of Slovenia, Hungarian Institute of Agricultural Engineering, Gödöllö and Croatian Agricultural Engineering Society

ICA Week of Conferences 2010

The Week of Conferences brings together IROICA, AGRIMBA and SILVA as ICA's Standing Committees for their annual meetings and the ICA-ECHAE Conference "Bologna Declaration 10 years on – Promising and delivering quality in Life Science education". Conferences were attended by 120 participants from 25 countries.

Date of event: June; 7 days; Each year in different ICA members country

Organiser: Prof. Milan Mesić, Ph.D.; Vice-dean for International Cooperation

Telephone: +385 1 239 3956

E-mail: mmesic@agr.hr

Co-organisers: ICA (Association for European Life Science Universities)

Croatian and International Congress of Technologists for Post-harvest Technology "Zrnko"

Congress is being held since 1985, and it is a Congress of scientists and experts from the field of post-harvest technology of cereals and oil seed plants, horticultural products as well as scientists and experts dealing with energy production from renewable sources. Congress aims to create a multidisciplinary forum from the field of post-harvest technology, human nutrition and feed technology.

Date of event: November; 3 days event; Annually from 1985

Organiser: Sandra Voća, Ph. D. ; Department of Agricultural Technology, Storage and Transport

Telephone: + 385 1 239 3843

E-mail: svoca@agr.hr

Co-organisers: Faculty of Food Technology and Biotechnology University of Zagreb, Zagreb, Croatia, Faculty of Food Technology, J.J. Strossmayer University, Osijek, Croatia, Faculty of Agriculture and Food Technology University of Mostar, Mostar, Bosnia and Herzegovina, Faculty of Technology, University of Tuzla, Bosnia and Herzegovina and European Society of Agricultural Engineers (EurAgEng)

19th international symposium Animal Science Days (ASD)

The ASD Symposium as the annual meeting point for interchange of experiences and achievements of scientist, researchers and stakeholders in animal production, is dating from the year 1993 with the goal of improvement of animal production in the partner countries of Italy, Hungary, Slovenia and Croatia.

For the third time since the start of quadrilateral collaboration, the 2011 ASD edition is organized by The Department of Animal Science, Faculty of Agronomy, University of Zagreb.

Date of event: 19th-23rd 2011; Annually from 1985

Organiser: Prof. Ino Čurik, Ph. D.; Department of Animal Science I

Telephone: +385 1 239 4010

E-mail: icurik@agr.hr

Co-organisers: University of Zagreb, Faculty of Agriculture, Department of Animal Science, Zagreb, Croatia, University of J. J. Strossmayer, Faculty of Agriculture, Osijek, Croatia, Kaposvár University, Faculty of Animal Science, Kaposvár, Hungary, University of Padova, Department of Animal Science, Padova, Italy and University of Ljubljana, Biotechnical Faculty, Zootechnical Department, Domžale, Slovenia

KOSOVO UNDER UNSCR 1244/99

UNIVERSITY OF PRISHTINA, FACULTY OF AGRICULTURE AND VETERINARY STUDIES

Research Groups and Their Key Projects in the Last Two Years

Plant genetic selection

Collecting local of Medicago sp. and Dactylis glomerata in South Eastern Europe. Regional "SEEDN - et" project WG Fodder Crops. Support by "SIDA" Sweden, CBM network "SEEDNet". Gene Bank of Kosovo – Plant resources". (2010).

Period of group's activity: 2008 onward

Key projects since 2008 onwards:

Collecting local of Medicago sp. and Collecting Dactylis glomerata.

Head of the research group: Prof. Shukri Fetahu

Telephone: +381 38 603 846

E-mail: shfetahu@hotmail.com

Animal Breeding

Breeding Programmes for sheep farmers in Kosovo: Proper breeding schemes and selection of best animals in the flock will assist farmers in increasing the feeding efficiency, reproduction and productive traits (i.e., milk meat and wool) and thus profit. Currently, not one sheep farm in Kosovo has a breeding scheme in place. The aim of the study was to provide the necessary information to Kosovo

sheep farmers for the setting up of sheep breeding schemes and provide farmers with relevant information regarding the economic weight for different traits in sheep. Including four breeds (Sharri, Kosova, Bardhoka and Balusha sheep), for a period of one year September 2009 – August 2010 the study was concentrated in 8 sheep farms in different regions of Kosovo. The results show that in the reference scenario, the probabilities for voluntary disposal of ewes happen at lactation 4^{th} and 5^{th}, mostly. Considering a standard yield at lactation 1^{st} specific to the breeds, the highest production is assumed to be reached at lactation 3^{rd} for about 16 %, 20%, 21% and 5% for Bardhoka, Balusha, Sharri and Kosovo sheep, respectively. Returns to rams sold for breeding can provide relatively good profit for farmers ranging from 152.00 – 233.00 € /ram.

The highest revenue rate was achieved for Bardhoka sheep, about 61.83 €/ewe, followed by Balusha 46.03 €/ewe, Shari and Kosova sheep, about 26.37 and 27.22 €/ewe, respectively. The programme used to get a first insight into the actual economic situation of sheep farms in Kosovo will contribute to make a first decision on future breeding goals. The establishment of an effective data recording system has been a challenge for all sheep keepers and sheep farmers should continue to develop further this recording system that meets their current demands.

Period of group's activity: 2009 onward

Key projects since 2008 onwards:

Projects in the field of Sheep breeding, Economic weights, Economic traits and Revenue rate.

Head of the research group: Dr.sc Hysen Bytyqi

Telephone: +381 38 603 846

E-mail: Hysen.bytyqi@uni-pr.edu

Vegetable Production

The influence of the location on the Nitrates and Nitrites content in vegetable under Kosovo conditions" 2010, Coordinator.

Period of group's activity: 2009 onward

Key projects since 2008 onwards:

Chemical contect of Nitrates and Nitrites in vegetable under Kosovo conditions

Head of the research group: Dr.sc. Skender Kaçiu,

Telephone: +381 38 603 846

E-mail: Skender.kaciu@uni-pr.edu

Plant Genetics

Project Title: "Broadening the genetic basis of winter wheat germplasm of Kosovo", Project duration: 1^{st} June 2009 – 31 January 2010. Project supported: Austrian Sciences and Research Liaison Offices (ASO- Ljubljana. Sofia). (2010).

Period of group's activity: 2009 onward

Key projects since 2008 onwards:

Genetic basis of winter wheat and Plant genetic resources

Head of the research group: Dr.sc Sali Aliu

Telephone: +381 38 603 846

E-mail: sali.aliu@uni-pr.edu

Current Cooperation Projects

Improvement and Establishment of Biotechnology in Higher Education (TEMPUS IV)

References: ETF–JP–00295–2008

Contact person: Skender Muji

Telephone: +81 38 603 700

E-mail: Skender.muji@uni-pr.edu

International joint Master degree in Plant Medicine (IPM), "Tempus IV", 2009

References: 158875-TEMPUS-1-2009-1-IT-TEMPUS-JPCR

Contact person: Adem Demaj

Telephone: +38138603846

E-mail: ardemaj@hotmail.com

Kosovo Interdisciplinary Knowledge Triangle Centre - PhD based Education, Research and Training for Medical and Natural Sciences

References: 159034-Tempus-2009-1-XK-TEMPUS-JPHES

Contact person: Bajram Berisha

Telephone: +381 38 603 846

E-mail: Bajram.berisha@uni-pr.edu

PhD in Food Science and Technology and Creating Capacities for PhD Reform at the University of Prishtina/Kosovo (PhD@UP)

Creating PhD in Food Science and Technology and establishment of capacities for PhD Reform at the University of Prishtina/ Kosovo.

References: Tempus-2010-2013

Contact person: Bajram Berisha

Telephone: +381 38 603 846

E-mail: Bajram.berisha@uni-pr.edu

Balkan-HERD program 2010-2013; Cooperation in education and research on mineral improved crop production for human and animal health in Balkan Countries

The project deals with higher education and applied research, both contributing to competence and capacity building and institutional development as laid out in the Balkan-HERD program document. The high priority given to the capacity building through training of students at master and PhD levels and exchange of staff in the project has greater relevance to the strategic direction of HERD. The project thus meets the objective 1 (institutional development) and objective 2 (applied research and development) of the HERD program. The project will focus on nutritional quality of food crops in relation to animal and human health. In the past decades, European crop production including

Western Balkan countries has largely focussed on securing food and feed production and maximising yield in terms of biomass production per hectare. To meet the growing food demand due to ever increasing population, food policy was focused toward the consumption of food rich in calories and proteins.

Contact person: Dr.sc Hysen Bytyqi

Telephone: +381 38 603 846

E-mail: Hysen.bytyqi@uni-pr.edu

MACEDONIA

UNIVERSITY OF SKOPJE, FACULTY OF AGRICULTURAL SCIENCES AND FOOD

Research Groups, Their Key Projects in the Last Two Years and Current Cooperation Projects

Use of Liquid fertilizers for Fertigation and Foliar Application

The group is working on promotion and development of liquid fertilizers in cooperation with company Alkaloid-Skopje.

Period of group's activity: 2008 onwards

Key projects since 2008 onwards: Applied project with Alkaloid - Skopje

Head of the research group: Prof. Vjekoslav Tanaskovik

Telephone: +389 70 386 383

E-mail: vjekoslavtanaskovic@yahoo.com

Vulnerability assessment and adaptation measures of Macedonian Agricultural Sector to Climate Change

The group is working on various issues related with effects on climate change on crop production as well as on adaptation techniques and options.

Period of group's activity: 2003 onwards

Key projects since 2008 onwards:

UNDP Implications of Climate Change on the Macedonian Agriculture: A first glance and WB Reducing Vulnerability to Climate Variability and Change in Macedonian Agricultural Systems.

Head of the research group: Prof. Ordan Chukaliev

Telephone: +389 70 328 863

E-mail: ocukaliev@yahoo.com

Marker assisted selection in animal science

Application of molecular markers in selection of domestic animals.

Period of group's activity: 2002 onwards

Key projects since 2008 onwards: k- casein, Porcine stress syndrome, BLAD factor and Screpie resistance.

Head of the research group: Prof. Zoran T. Popovski PhD

Telephone: + 389 70 252 731

E-mail: zpopovski@zf.ukim.edu.mk

Genetically modified organisms

Control of GM food, and production of recombinant proteins.

Period of group's activity: 1999 onwards

Key projects since 2008 onwards: GMO control in food and feed sector in Macedonia and production of recombinant Taq polymerase and gama interferon.

Head of the research group: Ass. Prof. Blagica Dimitrievska PhD

Telephone: +389 75 44 08 08

E-mail: btanaskovska@zf.ukim.edu.mk

Determination of genetic distance using DNA methods

Application of DNA microsatelites in determination of genetic distance among domestic animals and crops.

Period of group's activity: 2005 onwards

Key projects since 2008 onwards: Autochthonic breeds of sheep in Macedonia and Autochthonic lines of tomato in Macedonia.

Head of the research group: Ass. Prof. Elizabeta Miskoska – Milevska

Telephone: +389 75 447 492

E-mail: miskoska@zf.ukim.edu.mk

Advanced irrigation and other agricultural techniques for increasing of Water Use Efficiency (WUE) and Fertilizer use efficiency (FUE)

The group is working on effects on modern irrigation on crop yield as well as on water use efficiency, fertilizer use efficiency and water productivity. The group is using very advanced nuclear and traditional techniques.

Period of group's activity: 1999 onwards

Key projects since 2008 onwards: UNDP Improvement of apple irrigation in Resen area

Head of the research group: Prof. Ordan Chukaliev and Prof. Vjekodslav Tanaskovik

Telephone: +389 70 328863; +389 70 386383

E-mail: ocukaliev@yahoo.com; vjekoslavtanaskovic@yahoo.com

Conferences, Scientific Meetings and Seminars

Relation of Macedonian agrar with Farmers, Economy, EU atc.

Participants form: Macedonia, Slovenia, Bulgaria, Serbia, Croatia, Monte Negro, Bosnia and Herzegovina

Date of event: December, every year since 1976, Skopje, Macedonia

Organiser: Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje

Scientific Meeting for Plant Protection

Participants from: Macedonia, Slovenia, Bulgaria, Serbia, Croatia, Monte Negro, Bosnia and Herzegovina, Albania etc.

Date of event: 3 days, October or November, every year, Ohrid, Macedonia this year was held 34-nd meeting for plant protection

Organiser: Plant Protection Society of the Republic of Macedonia

Co-organisers: Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje

First Symposium on Horticulture

Participants: Macedonia, Slovenia, Bulgaria, Serbia, Croatia, Monte Negro, Bosnia and Herzegovina, Albania, Israel, Netherland, etc.

Date of event: 16-20 October, 2002, Ohrid, Macedonia

Organiser: Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje

Scientific meeting of students

Presentation of scientific papers of students from the field of Agriculture.

Date of event: December, every year, Skopje, Macedonia

Organiser: Faculty for Agricultural Sciences and Food at Ss. Cyril and Methodius University in Skopje

MONTENEGRO

UNIVERSITY OF MONTENEGRO, BIOTECHNICAL FACULT

Research Groups and Their Key Projects in the Last Two Years

Veterinary

Key projects since 2008 onwards: Isolation and characterization of indigenous lactic acid bacteria to produce specific cheeses in Montenegro

Head of the research group: Dr. Mirjana Bojanić-Rašović

E-mail: bojanic.m@t-com.me

Agroeconomy

Key projects since 2008 onwards: Farm management in terms of development organic agriculture

Head of the research group: Dr. Miomir Jovanovic

Plant Virology

Working on diagnosis, identification and characterisation of plant viruses using different biological, serological and molecular methods

Key projects since 2008 onwards:

Molecular characterisation of *Tomato spotted wilt virus*

Moniring of Pepino mosaic virus and Potato spindle tuber viroid

Head of the research group: Dr Jelena Zindovic

E-mail: jelenazindovic@yahoo.com

Vegetable and crop production

Key projects since 2008 onwards: Intensification of potato production in the rural areas of Montenegro in terms of sustainable development

Head of the research group: Dr. Zoran Jovovic

Fruit production

Key projects since 2008 onwards: Testing of biological and technological features of newer varieties of plums in northern Montenegro for recommendations of plum variaeties

Head of the research group: Dr. Djina Bozovic

Pedology

Key projects since 2008 onwards: Investigation of the effect of foliar polyphenolic compounds contents during ripening of table grape varieties in Podgorica region vineyards

Head of the research group: Dr. Natalija Perovic

E-mail: btf@ac.me

Vine growing

Key projects since 2008 onwards: Testing of new grape varieties in Podgorica vineyards

Head of the research group: Dr. Slavko Mijovic

Enology

Key projects since 2008 onwards: The effect of different methods of winification on polyphenolic composition and quality of red wine „Vranac“

Head of the research group: Dr. Vesna Maras

Forestry

Key projects since 2008 onwards: The basis of valuation of natural forests in the National Park „Biogradska Gora“

Head of the research group: Prof. dr. Milan Medarevic

Plant Micology

Key projects since 2008 onwards: Study of ESCA diseases in Montenegro

Head of the research group: Dr. Zora Vucinic

E-mail: plantprotection@ac.me

Nematology

Key projects since 2008 onwards: Nematodes in greenhouses at Zeta-Bjelopavlici Region

Head of the research group: Dr. Igor Pajovic

E-mail: pajovicigor@yahoo.com

Entomology

Key projects since 2008 onwards: New methods of monitoring and forecasting of fruit flies

Head of the research group: Dr. Snjezana Hrncic

E-mail: hrncic@t-com.me

Subtropical cultures

Key projects since 2008 onwards: Positive clon selection "unshiu" fruit and olives cv. "Zutica"

Head of the research group: Dr. Momcilo Radulovic

Current Cooperation Projects

Support Network for Improvement of the Strategic Planning

SuNISP Tempus Cards Projects

Contact person: Dr. Biljana Lazovic

E-mail: biljanal@t-com.me

Improvement and Establishment of Biotechnology in Higher Education

Tempus Joint Project

Contact person: Dr. Biljana Lazovic

E-mail: biljanal@t-com.me

South East European Development Network on PGR

SEEDNet

Contact person: Dr. Zoran Jovović

E-mail: jovovic@t-com.me

Organic agriculture in Montenegro: concerted support for small-scale growers in organic agriculture

Background assessment study on demonstration.

References: Project: TCP/MNE/3201

Contact person: Dr. Miomir Jovaovic

Agri-economic policy analysis of the accession and the candidate states and the Western Balkan countries

References: FP7 project

Contact person: Dr. Milan Markovic

E-mail: mmarkoni@t-com.me

Inventory of autochthony genotypes of apple (Malus sylvestris Mill.) at the area of South-East Europe

Contact person: Dr. Igor Pajovic

E-mail: pajovicigor@yahoo.com

Survey of autochthonous Prunus domestica populations in the South-East Europe countries with regard on inventory, collecting, identification and description

Contact person: Dr. Igor Pajovic

E-mail: pajovicigor@yahoo.com

Fostering a Science-based Development of a Sustainable Montenegrin Agriculture

FP7-REGPOT-2010-5 project

Contact person: Dr. Milan Markovic

E-mail: mmarkoni@t-com.me

Organic production in Montenegro, supporting small producers

References: FAO and Ministry of Agriculture, Forestry and Water management of Montenegro

Contact person: Dr. Natasa Mirecki

E-mail: mirecki@t-com.me

Development of organic agriculture in Montenegro

References: DANIDA

Contact person: Dr. Natasa Mirecki

E-mail: mirecki@t-com.me

Viruses, viroids and nematodes of vegetables and potatoes

Science-technological cooperation between Montenegro and Slovenia

References: ZAMTES, Ministry of science and technology of Montenegro

Contact person: Dr. Jelka Tiodorovic

E-mail: jelkatiodorovic@yahoo.com

Conferences, Scientific Meetings and Seminars

IV Interchair Meeting of Agricultural Economists

Thematic proceedings contain Agroeconomical issues

Participants from: Montenegro, Serbia, Bosnia, Bulgaria and Macedonia

Date of event: 3 days event; September 15-17, 2010

Organiser: Local Organizing Committee: Dr Natalija Perovic, Dr. Bogdan Bulatovic, Dr. Miomir Jovanovic and Dr. Aleksandra Despotovic

Telephone: +382 20 268 437

E-mail: btf@ac.me

Seminar in Organic production

National Seminar

Date of event: 3 days event; April 12-14, 2011

Organiser: Biotechnical Faculty

Telephone: +382 20 268 437

E-mail: btf@ac.me, mirecki@t-com.me

SERBIA

UNIVERSITY OF BELGRADE, FACULTY OF AGRICULTURE

Research Groups and Their Key Projects in the Last Two Years

Technological development

The team of technological development allows the development of new technologies, development of industrial products and improvement of the production and business processes. A prerequisite for this is a strict selection of technological projects, financed in accordance with the strategic priorities of the Republic of Serbia. This team has a great number of sub-teams that implement these projects at the faculty.

Period of group's activity: 2008-2010

Key projects since 2008 onwards:

- The application and development of modern technical and technological system of accommodation, nutrition, manure and cows milking for the purpose of increasing milk production
- Management of wildlife populations for the purpose of reducing the loss of wildlife and damage caused by wildlife
- A multidisciplinary approach to water management for the purpose of healthy and safe food production and mitigation of the effects of drought in agriculture
- The application of temperature in hard cheese production for the purpose of grater use ofmilk protein compared with the traditional way of production with the addition of herbal and aromatic plants
- Improving the semi-intensive carp production (Cyprinus carpio) in sustainable aquaculture
- Development of new food and dietary products with medical mushrooms and medicinal herbs
- Improving the competitiveness of small-scale farmers through the creation of brand names and brands
- Biological protection as an alternative to chemical herbicides
- Possibility of using hilly and mountainous areas of Serbia for organic crop production
- Improvement and preservation of agricultural resources in the function of the rational use of energy and quality of agricultural production
- Development and application of new biotechnologies for the purpose of increasing the production of high quality pork
- Effects of the implementation and optimisation of new technologies, equipment and machinery for planning and cultivation of land in plant production
- Organic production of grapes and wine and all vine products

- Selection of honey bees, determining the quality and geographical origin of honey in Serbia
- New varieties, selections and technologies as factors of intensifying fruit production
- Biodegradation of specific agro-industrial and utility waste and the quality of environment
- Development and implementation of welfare and biosecurity standards for the purpose of improving the technology of cattle and pigs
- Standardization of technological procedures for traditional 'golijski' cheese production using indigenous lactic acid bacteria for the purpose of geographical origin sign protection
- The application of modern ampelotechnological measures aimed at improved quality grapes production
- Improving management system of safety and quality in production processes of traditional meat products with the achieved protection of geographical origin
- The development of new technological procedures of sand reclamation of Kostolac power plant for the purpose of increasing their productive capacity and reducing the harmful influence on the environment
- Research into the opportunities for the production of biomass for energy from short rotation plantations within the electric power system of Serbia
- The development of heating and cooling systems for greenhouses / glasshouses with geothermal energy
- Improvement of production properties and meat quality of goats and kids in the ecological farming system
- Functional fermented dairy beverage-new technology
- Identification of drought tolerance in maize gene bank
- Development and application of products based on mineral resources in the production of safe food
- New technological procedures in accordance with poultry welfare and environmental protection for the purpose of obtaining poultry products of guaranteed and special quality
- Development of production technology of red wine with a high content of biologically active substances
- Plant products in the prevention and treatment of chronic noncommunicable diseases in humans
- Development and improvement of bioeconomic methods of plant protection from diseases and pests
- Biological, chemical, toxicological and ecotoxicological studies of herbicides and their application
- Development of sustainable systems of livestock production for the purpose of obtaining milk and meat with functional food properties
- Improving the genetic potential of forage crops and production technology and utilisation of animal feed in the function of livestock production
- The optimisation of application of current and research into new fungicides and zoocides in function of their efficacy and safety of food
- The development of new technologies for improving the production of small grains
- Sustainability of mass food production chain
- Research in vegetable species for the purpose of improving the biological and health value of fresh vegetables and its products enhancing the content of biovalid oxidants
- Optimisation of parameters of soil quality and the substrate for the production of high-quality vegetables in greenhouses
- Development of cultivars and hybrids of vegetable for the production in greenhouses
- Development and use of vegetable cultivars and hybrids for open field
- Development of genotypes of oilseed rape (Brassica napus L.) for nutrition and industrial processing
- Improvement of cultivation technology of forage plants in the function of the production of safe animal feed
- Improvement of assortment, production technology and primary processing of pumpkin 'golica' and marigold
- A multidisciplinary approach to breeding in the forage crop seed production for conventional and new scientific use
- Improvement and development of breeding and soya bean production technology

- The study of small grains genotypes and breeding for improved yield, quality and adaptive capacity
- Conservation, repair and rational use of agricultural soil in Serbia for the purpose of increasing food production and environmental protection
- Improvement of technologies for sustainable animal feed production
- Wild and cultivated herbs of biozones of Serbia in the function of sustainable development of hilly and mountainous regions-the first part
- Sustainable ways of marshmallow cultivation technology (Althaea officinalis L.) for the purpose of ensuring stable production and conservation of natural resources
- Agrochemical, physiological and agrotechnical studies of grown small grains on acid soils of Serbia
- Technological and protective properties of indigenous strains of lactic acid bacteria isolated from traditional fermented sausages
- Modern technologies and innovations in fruit science and viticulture
- Increase of genetic and production potential for small grains using classical and modern biotechnology
- The study of new production concept for the purpose of obtaining healthy and safe vegetable for fresh consumption and storage, by saving energy
- Bioeconomic use and ecoremediation of the soil by growing plants for industrial processing
- The study of extreme hydrological conditions-floods and droughts in Serbia
- Technical and economic measures for increasing the efficiency of irrigation and drainage

Head of the research group: Dragan Nikolić,

Telephone: +381 63 1085 929

E-mail: nikolicd@agrif.bg.ac.rs

Basic research Brief presentation

The team of basic research works on the realisation of fundamental projects, important for the improvement of all branches of agriculture and food industry. Along with a number of sub-teams it allows target integration of various areas on a long-term basis for the purpose of solving current problems of development of the Republic of Serbia.

Period of group's activity: 2008-2010

Key projects since 2008 onwards:

- Agriculture and rural development of Serbia in international integration process
- Improving the quality and effectiveness of teaching / learning at university
- Synthesis, characterisation and activity of organic and coordinating compounds and their application in (bio) nanotechnology
- The study of interdependence in the triad "synthesis-structure-properties" for functional materials
- Synthesis and characterisation of polymers and polymer (nano) composites of defined molecular and supramolecular structure
- New methods and techniques for the separation and chemical speciation of trace elements, organic substances and identification of radionuclides and their sources
- Structural modifications and reactions of microporous and mesoporous materials
- Synthesis, analysis and activity of new organic polydentate ligands and their complexes with d-metals
- New synthetic approaches, molecular modelling, and pharmacological evaluation of heterocyclic systems with nitrogen
- The interaction of immobilized cells, tissues, and biologically active molecules in bioreactor systems
- Aphids, parasitic wasps and eriophyid mites: biodiversity and phylogenetic relationships
- Regulation of antioxidant metabolism during plant growth, pathogen infection and abiotic stress effects: mechanisms of transport, signalling and resistance

- New methods in cryptology and information processing
- Geochemical investigations in the function of finding new deposits of fossil fuels and environmental protection
- Serbian mineral species: composition, genesis structure, implementation and impact on the environment
- Maximizing investments in agriculture of Serbia in the function of accession to the European Union

Head of the research group: Dragan Nikolić,

Telephone: +381 63 1085 929

E-mail: nikolicd@agrif.bg.ac.rs

Conferences, Scientific Meetings and Seminars

AQUACULTURE AND FISHERY

Area of aquaculture and fishery; interdisciplinary: all aspects of freshwater and marine aquaculture and fisheries; 24 countries: Serbia, Belgie, Hungary, Israel, Bosna and Hercegovina, Croatia,Norway, Poland, Macedonia, Germany, Bulgaria, Czech Republic, Iran, Romania, France, Spain, Greece, Turkey, Nigeria, Azerbaijan, USA, Montenegro, Georgia.

Date of event: June, 3 days, every second year

Organiser: Head: Zoran Marković, Institute of Zootechnics, Department of Growing and Reproduction of Domestic and Raised Animals

E-mail: zoranmm@agrif.bg.ac.rs

INNOVATIONS IN FRUIT GROWING

National conference with international participation (Slovenia, Croatia, Italy, Hungary, Bulgaria, USA, etc.).

The topics of the conference are practical aspects of fruit growing. A large number of fruit growers participate.

Date of event: 1-2 days; Every second year since 2007

Organiser: Head: Dragan Milatovic; Institute of Fruit Science and Viticulture, Department of Fruit Growing

Telephone: +381 63 1085 009

E-mail: mdragan@agrif.bg.ac.rs

UNIVERSITY OF NOVI SAD, FACULTY OF AGRICULTURE

Research Groups and Their Key Projects in the Last Two Years

Research group in plant production

The research groups dealing with both national and international projects, consist out of more researchers with expertise in various fields in plant production

Period of group's activity: 2000 onwards

Key projects since 2008 onwards:

Wireless Sensors Networks and remote Sensing, FP7 REGPOT

Local coordinator: Prof. Dr Branko Marinković

Improving nutritional quality and safety of food and fodder crops in South Eastern Europe (SEE) countries", Norwegian SEE program, 2006/2009.

Local coordinator: Prof. Dr Maja Manojlović

Search for new genetic variability on pea (*Pisum sativum*) and faba bean (*Vicia faba*) ECONET, Program, supported by French Ministry of Science, 2008/2009.

Local coordinator: Prof. Dr Branko Ćupina

Education, Research and Training for Global Environmental Change and Sustainable Management of Natural Resources in the Western Balkans", Norwegian SEE Program, supported by Norwegian Ministry of Science, 2006/2010.

Local coordinator Prf. Dr Maja Manojlović

Winter-sown legumes for enhanced sustainability of diverse agroecosystems *Acronym:* LEG-HIVER, Serbian-French technology co-operation for 2010-2011,

Project coordinator: Prof. Dr Branko Ćupina

Sustainable preservation of indigenous South East European legumes and their traditional food and feed products. SEELEGUMES,SEE-ERA.NET Plus Joint Call, 2010-2012.

Projet coordinator: Prof. Dr Branko Ćupina

Development and evaluation of innovative tools to estimate the ECOtoxicological impact of low dose pesticide application in agriculture on soil functional microbial biodiversity. SEE-ERA.NET Plus Joint Call, 2010-2012.

Local coordinator: Dr Simonida Djurić

Head of the research group: Director of Department of field and Vegetable Crops: Prof. Dr Mihal Djurovka

Telephone: +381 21 485 3282

E-mail: djurovka@polj.uns.ac.rs

Research Group in Meteorology

The research groups dealing with both national and International projects, consist out of more researchers with expertise in various fields in Meteorology

Period of group's activity: 1990 onwards

Key projects since 2008 onwards:

FP6-RRP-CMEP" (Reinforcement of the Research Potential in Centre for Meteorology and Environmental Predictions) No. 043670 (2007-2009)

FP6-ADAGIO (Adaptation of Agriculture in European Regions at Environmental Risk under Climate Change) No. SSPE-CT-2006-044210 (2007-2009)

Head of the research group: Prof. Dr Dragutin Mihailović

Telephone: +381 21 485 3203

E-mail: guto@polj.uns.ac.rs

Research group in Plant protection

The research groups dealing with both national and International projects, consist out of more researchers with expertise in various fields in Plant protection (phytopharmacy, entomology, phytopathology, herbology).

Period of group's activity: 1995 onwards

Key projects since 2008 onwards:

IPA (HU-SRB/0901/2.2/045-SHAPE)

2.2.1 Educational co-operation

Serbian-Hungarian Co-operation on Agrochemistry and Pest-control Education

Head of the research group: Prof. dr. Branko Konstantinovic

Telephone: +381 21 485 3210

E-mail: brankok@polj.uns.ac.rs

Research group in Curricula development

Teaching staff: Project leaders or Faculty contact persons: Prof. Dr. Bojan Srdjevic, Prof. Dr. Branko Cupina, Prof. Dr. Dusan Petrić, Prof. Dr. Nebojsa Novkovic, Prof. Dr. Radovan Pejanovic, Prof. Dr. Miroslav Plavsic and Mr Aleksandra Ignjatovic-Cupina.

Period of group's activity: 2001 onwards

Key projects since 2008 onwards:

International joint Master degree in Plant Medicine (IPM) – 158875- TEMPUS -2009– JPCR

Balkan Agribusiness Sector Initiative for Capacity Building, TEMPUS

Improving Academia – Industry Links in Food Safety and Quality TEMPUS

Head of the research group: Vice Dean for teaching activities: Prof. Dr Pero Erić

Telephone: +381 21 485 3210

E-mail: pero@polj.uns.ac.rs

Current Cooperation Projects

National projects

Development and standardization of immune – diagnostic tests (ELISA AND WESTERN BLOT) for diagnosis of infection of animals and humans with Haemotrophic mycoplasmas. (No.20124)

Sustainable development of meliorations in Vojvodina. (No.2006)

Study of new production concept with the aim of getting sanitary healthy vegetable for consummation and fresh keeping, with energy saving. (No.2017)

Development of new technologies in production of vegetables in conditions of sustainable agriculture, with energy saving and environmental protection. (No.20088)

Development of products and methods of protection from harmful agens with the aim of sustainable pesticide use and environmental protection. (No.20135)

Influence of regular correction and disinfection of the hoof on acropodium diseases, production and reproductive traits of cows in farm conditions. (No.20091)

Improvement of technologies of fodder plant growing in function of safe animal food. (No.20083)

The quality of production of dried fruit. (No.20065)

Contemporary technologies and innovations in fruit growing and viticulture. (No.30134)

Reintroduction and repopulation of *Tinca tinca* in fish pond systems and open water. (No.20107)

References for all listed projects: http://www.nauka.gov.rs/

Contact person for all listed projects: Dean, Prof. Dr Milan Krajinović

Telephone: +381 21 485 3210

E-mail: dean@polj.uns.ac.rs

Improvement of technology of artificial insemination of pigs.

Comparative analysis of the health status of animals in zoos and wild nature and potential risk of spreading parasitic diseases to humans.

Improvement of forage production on the grasslands of Vojvodina and Romania (on the territory of Banat).

Influence of probiotics and prebiotics on production performance and morphofunctional characteristics of small bowel of broilers.

Monitoring of deoxynivalenol in cereals and feed in Vojvodina.

Soybean grain with reduced content of trypsin inhibitors in pigs feeding during fattening.

Environmental and energy aspects of different technologies of soil tillage.

Contemporary approach to technology of growth of some herbs in regard to the most important pathogens in Vojvodina and Romanian part of Banat.

Development of integral cucumber protection from causal agent of downy mildew of cucurbit with the aim of getting healthy product for processing and export

Genetic, morphological and production characteristics of sheep of Safolk and cattle of Podolska races in Vojvodina.

Clonal selection of original vine grape varieties.

Selection of *Conus mas* L. in Vojvodina for organic fruit production

Long-term stationary experiments in function of environmental preservation and achievement of optimum yield of the most important field crops in Vojvodina.

PFID technologies in supply chains (the use of automated systems in logistics).

The development of complex technical and legal regulations for the use of biomass as a fuel, especially biogas.

References for all listed projects: http://apv-nauka.ns.ac.rs/vece/index.jsp

Contact person for all listed projects: Dean, Prof. Dr Milan Krajinović

Telephone: +381 21 485 3210

E-mail:dean@polj.uns.ac.rs

FP6 - Participation in the Broadband Society

References: EU project – European Scientific Foundation (ESF)

Contact person: Dean, Prof. Milan Krajinovic, PhD,

Telephone: +381 21 485 3210

E-mail:dean@polj.uns.ac.rs

Strategy for European Integration of CARDS Universities (Tempus)

References:

Contact person: Dean, Prof. Milan Krajinovic, PhD,

Telephone: +381 21 485 3210

E-mail:dean@polj.uns.ac.rs

Conferences, Scientific Meetings and Seminars

Scientific-expert conference on agriculture and food industry - 36th Symposium ''Agricultural engineering''

International participants: Hungary, Romania, Bulgaria, Croatia, Bosnia and Herzegovina, Macedonia, Montenegro, Slovenia

Date of event: 23-30 January, 2010; 7 days event; each year since 1975

Organiser:	**Telephone:**
Dr. Nikola Đukić	+381 63 835 86 32
MSc Aleksandar Sedlar	+381 21 4853363; +381 63 507571
MSc Ondrej Ponjičan	+381 63 109 7477
Dr. Jan Turan	+381 21 475 0468; +381 62 250468

Co-organisers:

Society for Agricultural Engineering of Vojvodina, Ministry of Science and Technological Development of the Republic of Serbia and Secretariat for Science and Technological Development of the Autonomous Province of Vojvodina.

Scientific-expert conference on agriculture and food industry - Processing and Energy in Agriculture, PTEP 2010

Advanced post-harvest technologies of agricultural materials:

- Energetic efficiency and renewable energy sources,
- Advanced technologies of seed processing,
- New food processing technologies,
- Sustainability of food processing technologies (efficiency, quality , energy, social aspects, organic production, etc.),
- Technical and technological aspects of fodder safety,
- Innovations in food processing technologies and aspects of food chain quality,
- Physical properties of biomaterials and food,
- Trends in development of agriculture,
- Management and control of the processes and
- Heating and air conditioning.

International participation: Hungary, Romania, Bulgaria, Croatia, Bosnia and Herzegovina, Macedonia, Montenegro, Slovenia and Austria.

Date of event: 18 -23 April, 2010; 5 days event; each year since 1989

Organiser: Dr. Mirko Babic, Department for Agricultural Technique

Telephone: +381 21 459 958

E-mail: mbab@polj.uns.ac.rs

Co-organisers:

National Society for Processing and Energy in Agriculture, ISEKI / Food Association, Vienna

Faculty of Technology, Novi Sad, Maize Research Institute ''Zemun polje'', Zemun and Institute of Field and Vegetable Crops Novi Sad.

Scientific-expert conference on agriculture and food industry - 9th Counselling ''Contemporary Vegetable Production''

International participation (sectorial): Hungary, Romania, Bulgaria, Croatia, Bosnia and Herzegovina, Macedonia, Montenegro and Slovenia.

Date of event: October; 1 day event; each year since 1989

Organiser: Dr. Mihal Djurovka, Department for Field and Vegetable Crops

Telephone: +381 21 459 716; +381 21 485 3257;

Co-organisers: Vegetable Society of Vojvodina Province

SLOVENIA

UNIVERSITY OF LJUBLJANA, BIOTECHNICAL FACULTY

Research Groups and Their Key Projects in the Last Two Years

Information on selected Research Groups and their key projects is presented below.

Chair for agricultural economics, policy and law, Department for Animal science, Biotechnical faculty

Chair is working within the national research program "Competiveness of agro-food sector" including the majority of agricultural economists from the country (together with the Department for Agronomy, Agricultural Institute of Slovenia, Institut for Hops Growing and Beer Brewing ".

The research has been addressing some basic aspects of agricultural economics, mostly in developing quantitative and qualitative models and economic and socio-economic analysis in the fields of agricultural policy, rural development, farm management and food economics. By participating in particularly European Union research projects, the extent and quality of which may indeed be seen as one of the group's advantages, the group obtained high quality knowledge about a research topics. The group is focusing actually on the following issues from general interest: Mathematical programing models at the level of agricultural household – multi-criterial modelling and risk management, the spatial econometric analysis in agriculture and rural development, Agricultural sector modelling, Quantitative assessment and evaluation of rural development policy, Analysis of the agro-food chain and consumer studies, Discourses and policy model analysis in agricultural policy (political-economy approach) and Monitoring agriculture and the agricultural policy.

Chair has four professors, 2 assistants and 2 permanent PhD students.

Period of group's activity: 2009 onwards as research programe, 1995 onwards as chair

Key projects since 2008 onwards:

FP 7 EU Projects: Assessing the Impact of Rural Development Policies RUDI (01.02.2008-31.07.2010), Enlargement Network for Agripolicy Analysis AGRIPOLICY (01.06.2008-31.05.2010), Common agricultural policy regionalised impact – the rural development dimension CAPRI-RD (01.03.2009-28.02.2013) and Spatial Analysis of Rural Development Measures SAPARD (01.04.2010-31.3.2013).

Different national Target research projects in the fields of: Quantitative assessment of rural development, Mathematical optimisation in agriculture, Assessment of quality policy in agriculture, Sector modelling in agriculture, GMO socio-economic factors and Agro-food chain competition.

Head of the research group: Assist. Prof. dr. Luka Juvančič (head of the chair), Prof. dr. Emil Erjavec (head of the research programe)

Telephone: +386 1 3203 925, +386 1 3203 852

E-mail: luka.juvancic@bf.uni-lj.s; emil.erjavec@bf.uni-lj.si

Center of expert work in livestock production, Department for Animal science, Biotechnical faculty

Center is working on BREEDING PROGRAMS in livestock production, working on national breeding evaluation for each species (cattle, horse, pig, sheep&goat, poultry, rabbit). Working on herdbook keeping for some species (pigs, sheep&goat, collaborate with breeders associations and breeders.

Working on test station for rams (performance test)

Working on preservation on animal genetic resources and protection local breeds.

In the research is oriented on genomic selection and research of biodiversity by breeds, sustainable production

On education is working on Sheep and Goat production,

Biodiversity of Livestock, Rearing of high production cows, Cultural heritage in livestock production+

Key projects since 2008 onwards:

ERFP Project: Current Status of the Brachycerous Cattle Populations in the South Eastern European Countries and Strategies for their Sustainable Conservation. (Project leader: Drago Kompan)

Interreg III B: Alpine Network for sheep and goat promotion for a sustainable territory development. (Project leader: Italy, partner: Drago Kompan)

EU project Agri Gen- Res 040- Heritagesheep (project leader Ph.D. Diana Bowles, UK, partner: Drago Kompan)

EU project Agri Gen Res 020 – EFABISnet (Project leader Andrea Rosati: partner: Drago Kompan)

Cooperation in various Bilateral scientific-technological projects between Austria, Croatia, Bosnia and Herzegovina, China, Hungary

Organization of different workshop and congress in the field of animal science (ICAR in 2000 with 500 participants; EAAP in 2004 with 1000 participants)

Organization symposia “Animal Science Days” 2008

Head of the research group: Prof. dr. Drago Kompan

Telephone: +386 1 3203 865

E-mail: drago.kompan@bf.uni-lj.si

Comparative genomics and genomic biodiversity

The group is working on comparative genomics in farm animals, development of animal models and preservation genetics. Functional genomics and development of molecular markers for marker assisted selection are our central goals.

Period of group’s activity: 2009-2015

Key projects since 2008 onwards: EADGENE network of Excellence, EUREKA Hemiron project, PigNet COST action, Mammary gland development and neoplasia Cost action

Head of the research group: Prof. dr. Peter Dovč

Telephone: +386 1 3203 836

E-mail: peter.dovc@bf.uni-lj.si

Current Cooperation Projects

International cooperation project in year 2010 of selected departments are listed below. More detail information can be found on faculty web page.

Department of Agronomy

Interstates projects:

- Genotipizacija albanskih avtohtonih kultivarjev oljk (Olea europea L.) z uporabo molekulskih markerjev (Dr. Branka Javornik)
- Planning of soil use in polluted regions (Dr. Helena Grčman)
- Improvement of irrigation management by decision making supporting systems (Dr. Marina Pintar)
- Conservation of natural genetic resources of medicinal and aromatic plants and wild relatives of horticultural plants (Dr. Dea Baričevič)
- Use of water from cleaning plants for irrigation (Dr. Marina Pintar)
- Zbiranje genetskih podatkov avtohtonih sort vinske trte (Vitis vinifera L.)kot podpora nacionalni zbirki vinskih trt (Dr. Branka Javornik)
- Development of remediation technologies for sustainable soil use (Dr. Domen Leštan)
- Okoljsko sprejemljiva in gospodarsko donosna tehnologija gojenja vrtnin (Dr. Stanislav Trdan)
- Assessment of negative impacts of tropospheric ozone on agricultural plants and natural vegetation (Dr. Franc Batič)
- Naravna odpornost zelja na napad tobakovega resarja (Dr. Stanislav Trdan)
- Implementacija entomopatogenih ogorčic v programe biotičnega zatiranja škodljivih žuželk v Sloveniji in na Madžarskem (Dr. Stanislav Trdan)
- Genetska variabilnost klonov sorte vinske trte Afus Ali (Vitis vinifera cv. Afus Ali) (Dr. Branka Javornik)
- Polyphenolic compounds in traditional alternative plant species in Slovakia and Slovenia and their significance for production of functional food (Dr. Ivan Kreft)
- Raziskave biološko aktivnih komponent kot izvor antioksidativne aktivnosti v plodovih jabolk in črnega ribeza (Dr. Franci Štampar)
- Genska transformacija modelne rastline Mimulus aurantiacus za preverjanje kandidatnih genov, vključenih v biosintezo flavonoidov (Dr. Borut Bohanec) PREVOD V ANGLEŠČINO!

Projects COST:

- Combining traditional and advanced strategies for plant protection in pome fruit growing (Dr. Franci Štampar)
- Control and exploitation of enzymes for added – value (Dr. Denis Rusjan)
- Impact of climate change and variability on European agriculture (Dr. Lučka Kajfež Bogataj)
- Green care in agriculture (Dr. Katja Vadnal)
- Plant proteomics in Europe (Dr. Branka Javornik)

Other international projects:

- European Development Opportunities in Rural Areas – EDORA (Dr. Majda Černič Istenič)
- The climate change mitigation potential of an EU farm: towards a farm-based integrated assessment – IMPACCT (Dr. Rok Mihelič)
- Program čezmejnega sodelovanja Slovenija – Italija; Čezmejna mreža za sonaravno upravljanje okolja in biotske raznovrstnosti SIGMA2 (Dr. Stanislav Trdan)
- Operativni program IPA Slovenija – Hrvaška; Pollution abatements and conservation of biotic diversity in agriculture with emphasis on olive growth – ZOOB (Dr. Marina Pintar)
- See Era Net project; Towards the preservation of autochthonous grapevine (Vitis vinifera L.) varieties in WBC (Dr. Branka Javornik)

6th Framework Program:

- Peri-urban land use relationships strategies tools for urban-rural linkages: PLUREL (Dr. Marina Pintar)

7th Framework Program:

- European approach to GEOSS – EUROGEOSS (Dr. Lučka Kajfež Bogataj)

Department of Animal Science

Interstates projects:

- Genotipizacija in primerjava travničke (BiH) in belokranjske pramenke (SLO) (Dr. Peter Dovč)
- Filogenetska analiza cipljev v Jadranskem morju (Dr. Simona Sušnik Bajec)
- Vpliv enkapsulacije mlečnokislinskih bakterij na njihovo preživetje in delovanje v hrani in pogojih prebavil (Dr. Bojana Bogovič Matijašić)
- Preučevanje vloge izničenja gena Cyp51 v Leydigovih celicah na razvoj spolnih celic in steroidogenezo (Dr. Simon Horvat)
- Molekularna karakterizacija matičnih celic v mlečni žlezi (Dr. Peter Dovč)
- Analiza prepisovanja genov v neimunskih celicah po okužbi z aviarnimi mikoplazmami in virusi (Dr. Mojca Narat)

Projects COST:

- Feed for Health (Dr. Janez Salobir)

Other international projects:

- Probiotic properties of Lactobacillus gasseri K7 (Dr. Irena Rogelj)
- Marie Curie Host Fellowships for the transfer of Knowledge (ToK) EU (Dr. Marija Klopčič)
- An integrated network of decentrelized country biodiversity and gene bank databases - EFABIS Net (Dr. Dragomir Kompan)
- Research and development of blood derived Hemoglobin for animal usage – HEMIRON (Dr. Peter Dovč)

6th Framework Program:

- European Animal Disease Genomics Network of Excellence for Animal Health and Food Safety: EADGENE (Dr. Peter Dovč)

7th Framework Program:

- Assessing the Impact of Rural Development Policies – RUDI (Dr. Luka Juvančič)
- Food Consumer Science in the Balkans: Frameworks, Protocols and Networks for a better knowledge of food behaviours - FOCUS-BALKANS (Dr. Marija Klopčič)
- Enlargement Network for Agripolicy Analysis – AGRIPOLICY; (Dr. Emil Erjavec)
- Common agricultural policy regionalised impact – the rural development dimension - CAPRI-RD (Dr. Emil Erjavec)
- Development of integrated livestock breeding and management strategies to improve animal health, product quality and performance in European organic and low input milk, meat and egg production – LOWINPUTBREEDS (Dr. Milena Kovač)
- Spatial Analysis of Rural Development Measures – SPARD (Dr. Luka Juvančič)

Department of Food Science and Technology

Interstates projects:

- Primernost naravnih konzervansov za zamenjavo sintetičnih aditivov v živilski industriji (Dr. Veronika Abram)
- Naravni, biološko aktivni dodatki za zdrava in obstojna živila (Dr. Sonja Smole Možina)
- Vpliv interakcij med kvasovkami na izražanje genov odgovornih za aromo vina (Dr. Peter Raspor)
- Uporaba PCR pri zagotavljanju varnosti živil (Dr. Sonja Smole Možina)
- Analiza mikrobiološkega tveganja (Campylobacter) v proizvodnji perutninskega mesa (Dr. Peter Raspor)

- Izkoriščanje odpadnega rastlinskega materiala po destilaciji eteričnega olja (Dr. Sonja Smole Možina)

Projects COST:

- Mitigation options for nutrient reduction in surface water and groundwaters (Dr. Janez Hacin)

Other international projects:

- Safe transportation of marine bioactive's from source to active site – BIOTRANSPORT (Dr. Polona Jamnik)
- Tuning and Upgrading the Food Safety education Curricule for BSc - TO BE SAFE (Dr. Peter Raspor)
- See Era Net project - Conservation and standardisation of traditional technologies of fermented milk products based on autochthonous lactic acid bacteria (Dr. Peter Raspor)

6th Framework Program:

- Improved bio-traceability of unintended microorganisms and their substances in food and feed chains – BIOTRACER (Dr. Peter Raspor)

7th Framework Program:

- Integrated monitoring and controll of foodborne viruses in European food supply chains – VITAL (Dr. Peter Raspor)
- Design and development of realistic food models with well-characterised micro- and macro-structure and composition – DREAM (Dr. Peter Raspor)
- Metagenomics for bioexploration – tools and application – METAEXPLORE (Dr. Ines Mandić Mulec)
- Training requirements and careers for knowledge-based food science and technology in Europe - TRACK_FAST (Dr. Sonja Smole Možina)

Conferences, Scientific Meetings and Seminars

118. EAAE Seminar "Rural development: governance, policy design and delivery"

The 118th EAAE (European Association of Agricultural Economists) seminar focused on the following topics: rural governance models and approaches, paradigm shift and new approaches in rural development policy design and delivery, rural livelihoods and structural change – socio-economic aspects and methods applicable to rural areas and tools for evaluating rural development policies.

About 120 participants attended the Seminar. Participants were coming from 22 countries from all over the world

Date of event: The seminar took place from August 25th to 27th 2010

Organiser: Dr. Luka Juvančič, Dr. Aleš Kuhar, Dr. Emil Erjavec, Chair for agricultural economics, policy and law, Department for Animal Science, Biotechnical faculty University of Ljubljana

Telephone: +386 1 3203 925

E-mail: luka.juvancic@bf.uni-lj.si

Co-organisers: Seminar was organised jointly by the University of Ljubljana, Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO), and the Slovene Association of Agricultural Economists (DAES).

Conference of the Slovene Association of Agricultural Economists (DAES).

Different topics of agricultural economics. Participants from Slovenia and other countries (mostly neighbour countries and Western Balkan countries).

Date of event: 2 day event, once per 3 year. The last in 2010. Next in 2012 or 2013.

Organiser: Dr. Emil Erjavec, actual president of DAES; The Slovene Association of Agricultural Economists (DAES) and Chair for agricultural economics, policy and law, Department for Animal Science, Biotechnical faculty University of Ljubljana

Telephone: +386 1 3203 852

E-mail: emil.erjavec@bf.uni-lj.si

Co-organisers: Academic institutions from Slovenia

EAAE Congress, Ljubljana 2014

3-annual congress with around 800 participants from all over the world (50-60 countries). Key relevant topics for different fields of agricultural economics research.

Date of event: August 2014 (date will be defined at the end of 2011), 5 days event.

Organiser: Dr. Aleš Kuhar (chair of Local organising committee); Chair for agricultural economics, policy and law, Department for Animal Science, Biotechnical faculty University of Ljubljana

Telephone: +386 1 3203 925

E-mail: ales.kuhar@bf.uni-lj.si

Co-organisers: EAAE Board

Animal Science Days Symposia

100 participants, 4 countries (Quadrilateral with Croatia, Hungary, Italy and Slovenia)

References: ICAR Session, 2000 (500 participant, 44 countries) and EAAP Congress, 2004 (1.000 participants, 67 countries

Date of event: September, 4 days event; Each year in other of four countries;

Organiser: Drago KOMPAN, Department of Animal Science, Biotechnical faculty University of Ljubljana (chair)

Telephone: +386 1 320 3865

E-mail: drago.kompan@bf.uni-lj.si

Co-organisers: UNI-Padova -Italy, UNI –Zagreb - Croatia, UNI Osijek – Croatia, Research institute Debrecen - Hungary

New challenges in agriculture

Date of event: 2.-3. 12. 2010

Organiser: Biotechnical faculty, Department for Agronomy

50th anniversary of Slovene microbiological society

Date of event: 24.11.2010

Organiser: Biotechnical faculty, Department for Animal science

UNIVERSITY OF MARIBOR, FACULTY OF AGRICULTURE AND LIFE SCIENCES

Research Groups and Their Key Projects in the Last Two Years

Research group for biology and plant physiology

Bioavailability and risk assessment of polycyclic aromatic hydrocarbons (PAHs) and toxic elements (As, Cd, Hg and Pb) using intestinal cell models

Risk assessment of probiotics in functional foods. Bacillus cereus strains – risk assessment of their use as probiotics

Key projects since 2008 onwards: RISKFOODCONT (EU-SAFEFOODERA) and PROBIOSAFE (EU-SAFEFOODERA)

Head of the research group: Prof. Dr. Avrelija Cencič

Telephone: +386 2 3209028

E-mail: avrelija.cencic@uni-mb.si

Research group for livestock production and processing

The aims of the study are to determine which concentrations of chestnut and oak tannins have effects on growth performance, feed conversion efficiency, fattening and meat and carcass quality. In addition, different characteristics of blood using hematological and serological analysis of hormones that affect appetite as well as microbiological analysis of gut contents will be determined. Also, the content of hydrolysable and condensed tannins will be determined.

Key projects since 2008 onwards: EFFECT OF TANNINE IN FEED ON GROWTH, CARCASS AND MEET QUALITY, HEALTH AND ECONOMY OF PIGS REARING

Head of the research group: Prof. Dr. Dejan Škorjanc
Telephone: +386 2 3209025

E-mail: dejan.skorjanc@uni-mb.si

Current Cooperation Projects

EuropeAID Taro Project

The project involves: Burkina Faso, Costa Rica, Cuba, France, Fiji, Germany, Ghana, India, Indonesia, Kenya, Nigeria, Madagascar, Nicaragua, the Philippines, Papua New Guinea, Portugal, Samoa, Slovenia, South Africa, Trinidad and Tobago, Vanuatu. Total duration is 60 months. The main objective is to produce plants adapted to new environments -climate change, pest and disease outbreaks, market needs. It is necessary to broaden the genetic base. The Project is multidisciplinary and involves developed and developing country scientists from various disciplines: agronomy, breeding, chemistry, social sciences, genetics, modern biotechnologies and virology. The Project uses taro (Colocasia esculenta) and cocoyam (Xanthosoma sagittifolium) to construct the climatic adaptation model. The overall objectives are: 1. to assemble and share genetic resources of taro from diverse genepools, 2. to promote international collaboration among breeders and farmers,

3. to produce, by conventional and participatory breeding, new varieties of an underexploited crops with high agronomic and commercial potential.

References:

QUERO-GARCÍA, J., LETOURMY, Pierre., IVANČIČ, Anton, FELDMANN, Ph., COURTOIS, B., NOYER, J.L., LEBOT, V. Hybrid performance in taro (Colocasia esculenta) in relation to genetic dissimilarity of parents. *Theor. Appl. Genet.*. [Print ed.], 2009, year. 119, No. 2, str. 213-221. [COBISS.SI-ID 2807084]

Contact person:	Telephone:	E-mail:
Prof. Dr. Anton Ivančič	+386 23209027	anton.ivancic@uni-mb.si
Dr. Janja Kristl	+386 23209042	janja.kristl@uni-mb.si

New agricultural practices for quality production of red fruits enriched in healthy compound

For characterization of raspberry genotypes, both phenotypic and genotypic evaluations will be carried out. Different molecular approaches like SSRs and ISSRs will be tested in order to obtain the most reliable and pragmatic technique for differentiating raspberry genotypes.

References:

ŠUŠEK, Andrej. Morphological descriptors of Christmas rose (Helleborus niger L.). Agricultura. [Print ed.], 2008, Year. 5, No. 2, str. 27-32. [COBISS.SI-ID 2643756]

ŠUŠEK, Andrej, GUILLEMIN, Jean-Philippe, LEMOINE, Marie-Claude, GOLLOTTE, A., IVANČIČ, Anton, CANEILL, Jacques, GIANINAZZI, Silvio. Effect of rhizosphere bacteria and endomycorrhizal fungi on the growth of Christmas rose (Helleborus niger L.). European journal of horticultural science, 2010, Year. 75, No. 2, str. 85-88. [COBISS.SI-ID 2932268]

Contact person:	Telephone:	E-mail:
Prof. Dr. Anton Ivančič	+386 23209027	anton.ivancic@uni-mb.si
Dr. Janja Kristl	+386 23209042	janja.kristl@uni-mb.si

Conferences, Scientific Meetings and Seminars

Eufrin – WG Sustainable fruit production to minimize residues Studies, trials and practices to reduce pesticides on fruits

Participants: Slovenia, Austria, Italy, Germany, Switzerland, Romania, France, Spain

Date of event: February 1-2, 2010

Organiser: Prof. Dr. Mario Lešnik, Chair of Phytomedicine

Telephone: +386 2 320 9020

E-mail: mario.lesnik@uni-mb.si

Co-organisers: Chair of Fruit production and Fruit Processing

13th Alpe Jadran Biosymposium - News on organic farming 2010 , »RESEARCH AND KNOWLEDGE TRANSFER IN ORGANIC AGRICULTURE«

Participants: Slovenia, Austria, and Italy

Date of event: January 27-29, 2010

Organiser: Chair of Organic Farming, Crops, Vegetables and Ornamental Plants, Institute for Organic Farming UM, FALS

Telephone: +386 2 320 9049

E-mail: martina.bavec@uni-mb.si

Co-organisers: Union of Slovenian Organic Farmers Association - USOFA

Ekonomika pridelave manj razširjenih poljščin v kolobarju

Participants: Slovenia, Croatia, Bosnia and Herzegovina

Date of event: 28.09.2010 (one day)

Organiser: Dr. Karmen Pažek, Prof. Dr. Črt Rozman, Chair of Agricultural Economics and Rural Development

Telephone: +386 2 6130865

E-mail: karmen.pazek@uni-mb.si

Annex 1: Faculties Proposals for Cooperation in the Future

The aim of this project and document is an overview of current situation as regards the faculties of agriculture in the Region, as well as an enhancement of cooperation in the future. Faculties proposed over 40 proposals for cooperation which are divided in three sections: cooperation on research, international exchanges and cooperation on strategic issues.

1. Proposals for Cooperation on Research

Proposals for Cooperation on research are classified into four segments: research on agronomy and horticulture science area, research on animal scientific area, food science area and agriculture economics.

1.1. Proposals for research on agronomy and horticulture science area

Certification of plant material

As we don't have a producer of healthy certificated plant material of vine grape and some others fruits plants we would like to make this possible. Controlling production of vine grape transplants could bring to a healthier vine yard with high quality of wine. This worth and for some others fruits transplants. This is not easy to obtain, so the knowledge transfer and practical advice could provide a better production of healthy transplants.

Proposed by: Faculty of agriculture and Food Technology, Mostar

Contact person: Ms. Viktor Lasić

Telephone: +387 36 337 120

E-mail: Viktor.lasic@sve-mo.ba

Preservation of autochthon variety of potato

We have one autochthon variety of potato on the area of Herzegovina, named Poluranka. The origin of this potato is unknown, but from the preliminary research indicated that lot of domicile people remembers it from the generations. Our mission is to preserve this cultivar, clean him from the viruses and put a brand name. These operations could provide renewing a seed cultivar and production of one culinary good and edible potato. As we don't have a laboratory for providing a virus free microtubules, same other research faculty could provide us such service through transferring knowledge and learning a practical skill in making virus free materials.

Proposed by: Faculty of agriculture and Food Technology, Mostar

Contact person: PhD Adrijana Filipović

Telephone: +387 36 337 107

E-mail: adrijana.majic@sve.mo.ba

Alternative field crops, production systems

Alternative field crops, their cultivation - depending on production systems, postharvest technology, processing and marketing (incl. knowledge about health and nutritional value) are the most important key for creating new niche products and increasing biodiversity.

References: See Sicris.si

Proposed by: University of Maribor, Faculty of Agriculture and Life Sciences

Contact person: Prof. Dr. Franci Bavec

Telephone: +386 2 320 9030

E-mail: franci.bavec@uni-mb.si

Rayonization of wine-growing regions in Bosnia and Herzegovina and Republike Srpska

Bosnia and Herzegovina is rich in old grapevine cultivars and has long tradition in wine making and consumption. As approaching to the joining EU it is necessary to adopt suitable standards to implement proper rayonization.

References:

Jovanović Cvetković Tatjana (2008) Prinos grožđa kao pokazatelj kvaliteta interspecies sorti vinove loze. Agroznanje, Vol.9 (1):43-53

Jovanović-Cvetković Tatjana, Mijatović D., Ivana Radojević., Vesna Ranković (2008) Uticaj sorte vinove loze na kvalitet grožđa i vina, Agroznanje, Vol.9(2)11-17

Jovanović Cvetković Tatjana, Mijatović, D. (2008) Zavisnost krupnoće grozda od položaja koljenceta po dužini lastara sorti liza, lela i zlata. Letopis naučnih radova, 1:50-58

Mijatović, D., Jovanović Cvetković Tatjana (2008) Ovisnost krupnoće grozda o položaju nodusa na rodnoj mladici. Zbornik radova 43 Croatian and 3 International Symposium on Agriculture. Opatija, pp.928-931

Jovanović Cvetković Tatjana, Mijatović, D. (2008) Privredno-tehnološke karakteristike interspecies hibrida u uslovima kutinskog vinogorja. Zbornik naučnih radova Beograd, Vol.14 (5):97-104

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Tatjana Jovanović Cvetković

Telephone: +387 51 330 937

E-mail: tatjanajc@yahoo.com

Improvement of methods for diagnosis of vegetable viruses

Establishing of cooperation with the reference laboratory

References: Gutiérrez-Aguirre I., Mehle, N., Delic, D., Gruden K., Mumford R, Ravnikar, M. 2009. Real-time quantitative PCR based sensitive detection and genotype discrimination of Pepino mosaic virus. Journal of Virological Methods, 106:46-55.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Dr. Duska Delić, Assistant professor

Telephone: +387 51 330 978

E-mail: duskadelic@hotmail.com

Improvement of methods for diagnosis of fruit fungi

Establishing of cooperation with the reference laboratory

References: Lolic, B., Bulajic, A., Djekic, I., Vucurovic, A., Djuric, G., Krstic, B., (2009): The presence of Phytophthora spp. of raspberries in Republic of Srpska, Agro-knowledge Journal, ISSN 1512-6412.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Biljana Lolić, MSc

Telephone: +387 51 330 978

E-mail: b_lolic@yahoo.com

Plant-parasitic nematodes

Cooperation in research in fields of identification, control, life cycle and interactions with host plants of plant-parasitic nematodes

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Branimir Nježić

Telephone: +387 51 990 332

E-mail: branimir.njezic@agrofabl.org

Gathering of maize local populations and development of maize inbred lines in agroecological conditions of Kosovo

The white maize landraces is characterised with a long history and the higher value for different purpose. There are plants genetic resources is a number of landraces. Before 1955, maize landraces were cultivated about 100 % of the areas. However now in Kosovo accounts approximately with maize landraces only less 5%, while with hybrid are planted more 95%. The rapid decrease of landraces has caused maximum genetic erosion of maize landraces. Maize landraces as well are linked to specific adaptations to farming system and specific different agro ecological condition. Diversity and variability of maize landraces due to is favourable geographic location and agro ecological climatic conditions, because in such areas for landraces are grown representing an important cultural heritage. The level and propagation of genetic variation in local white maize cultivars is still unknown but with higher interest in the future of plant breeding program to created inbreed line and after to develop new hybrid formula for agricultural conditions of Kosovo. Farmers across different regions in Kosovo have performed mass selection of maize landraces was based on their practical experience level and knowledge. The introduction of maize hybrids in Kosovo from USA started in 1955.

Proposed by: University of Pristina, Faculty of Agriculture and Veterinary Studies

Contact person: Dr.sc. Sali Aliu prof. ass.

Telephone: +377 044 195 990

E-mail: salialiu02@gmail.com

GMO – control and usage

GMO food is reality and it will be important to establish efficient system for control of such food using acquired experience. Also, GMO are useful tools in production of recombinant proteins and it should be of great importance to share experience in that sense.

References:

B. Dimitrievska, Z.T. Popovski, K. Porcu: Merging procedures for detection of soy DNA and presence of GM soy in food samples. Foodinova 2010, Valencia, Spain (2010), p.146

Tanaskovska, B. (Dimitrievska), Porcu, K., Popovski, Z.T.: Development of a System for GMO Testing of Food, Seed and Feed Samples in the Republic of Macedonia, XI Savetovanje o Biotehnologiji, Vol. 11, book II, p. 665-669, 2006. ISBN 86-82107-79-1.

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person: Ass. Prof. Blagica Dimitrievska PhD

Telephone: +389 75 440 808

E-mail: btanaskovska@zf.ukim.edu.mk

Conservation and utilization of Autochthonous Plant Genetic Resources in Western Balkan

Identification, collection, conservation, analysis and estimation of autochthonous plant genetic resources in Western Balkan countries

References: The FAFS experienced research team and gene bank premises.

Proposed by: University of Sarajevo, Faculty of Agriculture and Food Sciences

Contact person: Prof. Dr. Mirsad Kurtović (Fuad Gaši)

Telephone: +387 33 225 727

E-mail: fudo01@yahoo.com

Increased water productivity for drought alleviation and improved food security

Water productivity in irrigated agriculture is very low due to inefficient use of water. There are possibilities to increase water productivity through water saving techniques as well as through proper irrigation scheduling. The more food will be produced with same amount of water and agrochemicals. The negative effect of drought as well as expected climate change expressed as water deficit and heath stress can be alleviated and crop yield can be maintained on same level for longer period.

References:

Ivan Blinkov, Katarina Donevska, Dusko Mukaetov, Vladimir Stavric, OrdanCukaliev (2008) Unsustainable practice in the management with natural resources as factor which generate desertification, land degradation and droughts in the Republic of Macedonia Conference on Water Observation and Information System for Decision Support BALWOIS, Ohrid

Katarina Donevska, Dusko Mukaetov, Vladimir Stavric, Ordan Cukaliev, Ivan Blinkov (2008) Human socio-economic activities as factors which generate desertification, land degradation and droughts in the Republic of Macedonia , Conference on Water Observation and Information System for Decision Support BALWOIS, Ohrid

Dusko Mukaetov, Vladimir Stavric, Ordan Cukaliev, Ivan Blinkov, Katarina Donevska (2008) National strategy for combating desertification, land degradation and droughts in the Republic of Macedonia , Conference on Water Observation and Information System for Decision Support BALWOIS, Ohrid

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person: Prof. Ordan Chukaliev

Telephone: +389 70 328863

E-mail: ocukaliev@yahoo.com

Fertigation for improved water use efficiency, fertilizer use efficiency, higher yield and environment protection

Fertigation is irrigation technique that can supply water and fertilizer according the crop needs by time and amount. This proper timing and amounting of water and fertilizer results with increased water and fertilizer use efficiency. In same time it is protecting environment with less fertilizer leaching in the ground water what is important to fulfil EU obligation from Water Frame for Directive, Nitrate directive and Ground Water Directive. The research of capacity for increasing water and fertilizer use efficiency and decreasing pollution from agricultural source should be done in order to assess benefits from this technique.

References: Cukaliev, O., Tanaskovik, V., Kanwar, R. S., Heng Kheng Lee., Mukaetov, D., (2008). Irrigation and fertigation effects on nitrogen use efficiency & tomato yield. International Agricultural Engineering Journal 17 (1-4): pp. 19-26

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person: Prof. Vjekoslav Tanaskovik

Telephone: +389 70 386 383

E-mail: vjekoslavtanaskovic@yahoo.com

Effect of climate change on crop yield and crop water requirement

The climate change is highest risk agriculture is facing with. Expected temperature rising combined with decreased rainfalls, especially in the growing season, will cause severe negative effect on crop yield. In order to estimate these effects crop yield modelling and crop water requirement modelling will be done. The obtained results will be used to propose appropriate adaptation techniques and to find methods how to provide sustainability of agricultural production in forthcoming period.

References:

Group of Authors ...Chukaliev O. (2008) Climate Change Mitigation Analysis in the Republic of Macedonia, ICEIM-MANU, pp 57

Group of Authors- Chukaliev O. (2008) Second national communication on climate change, Ministry for environment and physical planning, UNDP, pp 128, Skopje

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person: Prof. Ordan Chukaliev

Telephone: +389 70 328 863

E-mail: ocukaliev@yahoo.com

Devastation and Re-Cultivation of Arable Land in Western Balkan Countries

Analysis of levels of devastation and loss of arable lands, transfer of good practices in land management and re-cultivation

References: FAFS research teams and highly interested international organizations and local institutions.

Proposed by: University of Sarajevo, Faculty of Agriculture and Food Sciences

Contact person: Prof. Dr. Hamid Ćustović

Telephone: +387 33 225 727

E-mail: h.custovic@ppf.unsa.ba; custovic.hamid@gmail.com

1.2. Proposals for research on animal scientific area

Improving of animal production and production of different animal products by applying scientific and professional knowledge

Members of our Institute, in cooperation with other professional institutions, are working on improving of production of meat, milk, eggs, honey, and breeding animals. This activity will also be done in future, and will be developed by application of specific projects.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Dragutin Matarugić, Professor

Telephone: +387 51 330 952

E-mail: matarugicd@yahoo.com

Breeding and morphological characteristic of autochthon “Busha” cattle in Kosovo

Cattle including different breeds are the main source of milk and meat, and their products in Kosovo. Mainly, this industry consists of two sectors: small farms (80%), which produce mainly for home consumption and in different periods their products find place in the local market, and commercial farmers (about 20%) who produce exclusively for the market. Nowadays native cattle breeds are hardly found in modern industrial dairy and meat production. Commercial breeding focuses on high output of milk or rapid growing of the cattle to minimize costs of holding animals and maximize efforts. Economically, it is useful to produce as much as possible with the smallest possible effort. But how reasonable and useful can this be for a region that cannot afford raising or feeding these high productive cattle in an issue that should be addressed and studied deeply. The Busha cattle (Bos Brachyceros Europaeus) are a very original cattle breed in Kosovo and in the Balkan Peninsula. Named as “Illyrian Cattle”, these animals for centuries are being managed in this region.

Proposed by: University of Pristina, Faculty of Agriculture and Veterinary Studies

Contact person: Dr.sc. Hysen Bytyqi Prof. ass.

Telephone: +381 38 603 846

E-mail: Hbytyqi@hotmail.com

Livestock production

Animal genetic resources, breeding value evaluation, genomic selection, biodiversity in livestock.

References:

Leading projects, collaboration in international bodies (ICAR, EAAP, ERFP)

National coordinator for Slovenia –on Animal Genetic Resources –FAO

Proposed by: University of Ljubljana, Biotechnical faculty

Contact person: Dr. Drago KOMPAN, Chair of Centre of expert work

Telephone: +386 1 320 3865

E-mail: drago.kompan@bf.uni-lj.si

Molecular analysis of genetic relatedness and evaluation of cultivars identity of old, traditional and domesticated agricultural species

Cooperation with the Biotechnical Faculty Centre for Genetics (Prof. Dr. Branka Javornik) already is established through the work on M.Sc. and PhD Thesis. This is express of interest to continue with the cooperation regard to the transfer of technologies related to the analysis of genetic relatedness and evaluation of cultivars identity of old, traditional and domesticated agricultural species.

References: Tomić Lidija (2009) Genetic characterization of the grapevine variety Žilavka (Vitis vinifera L.) with DNA markers. M.Sc. Thesis. Ljubljana, University of Ljubljana, Biotechnical Faculty

Lidija Tomić, Nataša Štajner, Branka Javornik, Mario Leko and Nikola Mićić (2008) Characterization of Vitis vinifera L. cv. Žilavka with SSR markers. 18thEUCARPIA General Congress, 9-12 September 2008, Valencia, Spain. Proceedings, pp. 252

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Mr Lidija Tomić

Telephone: +387 51 330 941

E-mail: lidija.tomic@agrofabl.org

Marker assisted selection in development of breeding programs in SEE

There are lot of molecular markers associated with productive and reproductive traits of domestic animals. It will be important to use previous experience and to expand that in the countries that are still not able systematically to start MAS in livestock production.

References:

Tanaskovska, B., Porcu, K., Trifunovic, S., Cinkulov, M., Antov, A., Antov, G., Popovski, T. Z. Determination of Polymorphisms of κ-casein in Red-white Friesian Cattle Using RFLP on DNA from Different Sources. Contemporary Agriculture, p.: 307-310, Vol. 3-4, 2003, Novi Sad.

Popovski, Z.T., Tanaskovska, B., Porcu, K., Vukovic, V., Palashevski, B.: Porcine Stress Syndrome in the Republic of Macedonia. Proceeding of papers "Faculty economy", p.: 33-46, 2003, Skopje.

Tanaskovska B., Popovski Z.T., Srbinovska, S., Porcu, K., Palashevski B., Dubrova-Mateva, N.: Correlation Between the Polymorphisms of □-casein and Some Milk Features of Holstein-frisien Cows in Macedonia. Symposia of livestock production with international participation. Ohrid, 2005. p. 37

Popovski, Z., Vukovic, V., Andonov S., Porchu K., Tanaskovska B.: Correlation Between the Genotype for Porcine Stress Syndrome and Some Productive and Reproductive Traits of Pigs. Symposia of livestock production with international participation. Ohrid, 2005. p.42

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person: Prof. Zoran T. Popovski PhD

Telephone: + 389 70 252 731

E-mail: zpopovski@zf.ukim.edu.mk

Determination of genetic distance among Busha cattle and Sharplanina Shepard dog in SEE using DNA microsatellites

Busha cattle and Sharplanina Shepard dog as an autochthonic breeds are present in some varieties in most of the Balkan countries. It will be interesting to assess the genetic distance and evolution of the mentioned breeds using modern DNA approach.

References:

M. Cinkulov, Z. Popovski, K. Porcu, B. Tanaskovska, A. Hodzic, H. Bytyqi, H. Mehmeti, V. Margeta, R. Djedovic, A. Hoda, R. Trailovic, M. Brka, B. Markovic, B. Vazic, M. Vegara, I. Olsaker, J. Kantanen: Genetic diversity and structure of the West Balkan Pramenka sheep types as revealed by microsatellite and mitochondrial DNA analysis. J. Anim. Breed. Genet. 125 (2008) 417–426

Popovski, Z., Porcu, K., Dzabirski, V., Tanaskovska, B. (Dimitrievska), Andonov, S., Kocevski, D., Vukovic, V.: Application of DNA Microsatellites in Characterisation of Animal Biodiversity. II Congress of ecologists of the Republic of Macedonia with international participation. Proceeding of papers 25-29.10.2003. p.: 398-403, 2003, Ohrid, Macedonia.

Proposed by: University of Skopje, Faculty of Agricultural Science and Food

Contact person:	Telephone:	E-mail:
Ass. Prof. Elizabeta Miskoska – Milevska	+389 75 447 492	miskoska@zf.ukim.edu.mk
Koco Porcu MSc	+389 70 33 47 37	kporcu@zf.ukim.edu.mk

1.3. Food science area

Processing a fruit products

This is a new idea for future cooperation for interesting parties. As we have a new orchard, soon it will come to fruit harvest and we would like to research our option in processing these fruits from field to table (pomegranates, figs, olives, plums, apricot, cherry, sour cherry, rubbery etc. We would also like to compare quality of our fruits with same fruits growing in other area or region. Cooperation of same physiological and morphological traits would be also interesting to us.

Proposed by: Faculty of agriculture and Food Technology, Mostar

Contact person: PhD Dijana Vego

Telephone: +387 36 337 113

E-mail: dijana.vego@sve-mo.ba

Study on harvest and postharvest fruit treatments and other horticultural crops

Multidisciplinary approach to the harvest and postharvest treatments within horticultural crops. In Bosnia and Herzegovina very low attention is dedicated to the fruit and crop harvest and postharvest treatment. In Bosnia 40% of marketed crops are failed due to the wrong treatment. Due to the circumstance we would like to share knowledge that Biotechnical Faculty is advanced in regarding postharvest technologies.

References:

Pašalić Boris, Stolić Relja (2011) Dinamika promjene biohemijsko-fiziološkog statusa plodova klonova Gala Galaksi i Gala Mast u zadnjem periodu dozrijevanja i tokom skladištenja. XVI Međunarodno naučno-stručno savjetovanje agronoma Republike Srpske, p.71

Pašalić, B (2009) Tehnologija skladištenja jabučastog voća. Zbornik radova II savjetovanja "Inovacije u voćarstvu", Univerzitet u Beogradu, Poljoprivredni fakultet, pp.79-93

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Boris Pašalić

Telephone: +387 51 330 9936

E-mail: boris.pasalic@agrofabl.org

Organic vegetable production – quality and health aspects

Increasing demand and premium prices could be driving forces for development of organic vegetable production in the region. Beside technological improvements (fertilizing, plant protection) also aspect of quality, health and environment impact are important research topics where we would like to extend our collaboration.

References:

BAVEC, Martina, TURINEK, Matjaž, GROBELNIK MLAKAR, Silva, SLATNAR, Ana, BAVEC, Franc. Influence of industrial and alternative farming systems on contents of sugars, organic acids, total phenolic content, and the antioxidant activity of red beet (Beta vulgaris L. ssp. vulgaris Rote Kugel). J. agric. food chem., 2010, in print, doi: 10.1021/jf103085p. [COBISS.SI-ID 3023916], [JCR]

ŠTRAUS, Saša, BAVEC, Franc, GROBELNIK MLAKAR, Silva, TURINEK, Matjaž, BAVEC, Martina. Sensory evaluation of beetroot juice from organic, integrated and conventional production systems. V: 2nd International conference on horticulture post-graduate study, Lednice, 30 - 31 August 2010. Conference proceedings. Brno: Mendel University, 2010, str. 107-110. [COBISS.SI-ID 3013420]

ŠTRAUS, Saša, BAVEC, Franc, GROBELNIK MLAKAR, Silva, TURINEK, Matjaž, BAVEC, Martina. Sensory evaluation of sauerkraut from organic, integrated and conventional production systems. V: WERY, Jacques (ur.). 11th ESA Congress, Montpelier, France, August 29th - 3rd September, 2010. Proceedings of the Agro 2010. Montpellier: Agropolis international editions, 2010, str. 653-654. [COBISS.SI-ID 2991404]

Proposed by: University of Maribor, Faculty of Agriculture and Life Sciences

Contact person: Assoc. Prof. Dr. Martina Bavec

Telephone: +386 2 320 9049

E-mail: martina.bavec@uni-mb.si

Application of Grape Phenol Maturation Concepts in Viti- and Viniculture in Western Balkan Winegrowing Regions

Identification of the optimal grape phenol composition in connections with sugar/acid maturation and potentials for wine maturation and ageing; with special attention to autochthonous wine grape varieties.

References: The FAFS research team and undiminished interest of winegrowers and wine producers.

Proposed by: University of Sarajevo, Faculty of Agriculture and Food Sciences

Contact person: Prof. Dr. Milenko Blesić

Telephone: +387 33 225 727

E-mail: m.blesic@ppf.unsa.ba

Study on consumers' attitudes and behaviours for fruits and fruit products

Multidisciplinary approach to the consumer study to food consumption of fruits and fruit products and assessment of fruit qualitative characteristics.

Methodology for cooperation is to implement qualitative consumer survey, focus groups and conjoint analysis.

References: FP 7: FOCUS-BALKANS, Food Consumer Science in the Balkans. Frameworks, Protocols and Networks for a better knowledge of food behaviours.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Dr. Miljan Cvetković, Assistant Professor

Telephone: +387 51 330 938

E-mail: miljan.cvetkovic@agrofabl.org

Nutritional and Biologically Valuable Compounds of Autochthonous Food Products

Analysis of the levels of preservation of biologically valuable compounds during processing in production of traditional food products

References: The FAFS researchers experienced in the fields of promotion of GIs for traditional food products and analysis of antioxidants, vitamins and other biologically valuable food compounds

Proposed by: University of Sarajevo, Faculty of Agriculture and Food Sciences

Contact person: Doc. Dr. Asima Begić-Akagić

Telephone: +387 33 225 727

E-mail: akagich@yahoo.com

1.4. Agriculture economics

LCA in agriculture

Agriculture provides food, non-food materials and also several services in the rural communities including energy. In the European Union, it is expected from agriculture to produce quality and healthy commodities with minimal negative environmental impact, where usually only direct impacts are measured. Several tools and methods have been developed to determine sustainable development, which became almost obligatory also in agriculture. One of the frameworks to apply evaluation methods of sustainability is life cycle assessment (LCA), which assesses the environmental burden caused by a product, a production process, or any activity to provide services. Research in the area of the ecological footprint and/or LCA in agriculture are still developing and there are several questions still open. Inter-disciplinary knowledge from the theory and practice concerning a broad range of possible applications of LCA in agriculture is now discussed. Our research will be focused on the organic farming sector in comparison to the other types of farming.

References:

BAVEC, Martina, GROBELNIK MLAKAR, Silva, ROZMAN, Črtomir, PAŽEK, Karmen, BAVEC, Franc. Sustainable agriculture based on integrated and organic guidelines: understanding terms: The case of Slovenian development and strategy. Outlook Agric., 2009, volume. 38, No. 1, str. 89-95. [COBISS.SI-ID 2762028], [JCR, WoS,)

TURINEK, Matjaž, TURINEK, Maja, GROBELNIK MLAKAR, Silva, BAVEC, Franc, BAVEC, Martina. Ecological footprint of beetroot and cabbage in different production systems. V: MARIĆ, Sonja (ur.), LONČARIĆ, Zdenko (ur.). 45th Croatian and 5th International Symposium on agriculture, Opatija, Croatia, 15th-19th February 2010. Zbornik radova. Osijek: Poljoprivredni fakultet Sveučilišta Jurja Strossmayera u Osijeku: =Faculty of Agriculture University of Josip Juraj Strossmayer in Osijek, 2010, str. 147-151. [COBISS.SI-ID 2907180]

BAVEC, Franc, BAVEC, Martina. Situation, experiences and expectation in agriculture and agri-environmental measures after acceptance of European common agricultural policy (CAP) in Slovenia. V: POSPIŠIL, Milan (ur.). 46th Croatian and 6th International Symposium on Agriculture, Opatija, Croatia, February 14-18, 2011. Proceedings. Zagreb: University of Zagreb, Faculty of Agriculture: = Sveučilište u Zagrebu, Agronomski fakultet, 2011, str. 19-29

Proposed by: University of Maribor, Faculty of Agriculture and Life Sciences

Contact person: Assoc. Prof. Dr. Martina Bavec

Telephone: +386 2 320 9049

E-mail: martina.bavec@uni-mb.si

Demarcation of the Bosnia and Herzegovina territory depended of production and development conditions.

B&H has a variety of natural, demographic and other conditions which make different possibilities for agriculture and other economic activities. Since the B&H does not have defined areas with difficult economic conditions such as LFA areas within the EU, this prevents the differentiation of economic and agricultural policy which would be particularly sensitive to less favourable areas. Scientists from universities in B&H would collect the necessary data and in collaboration with colleagues from universities from other SEE countries propose classification of LFA areas in B&H that the government has adopted and used in planning and managing future rural and economic development.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Stevo Mirjanić, Professor

Telephone: +387 51 330 930

E-mail: stevo.mirjanic@agrofabl.org

Research and definition of non-commercial farms in the function of determining support measures to their insufficient income Listen

The agrarian policy of the Balkan countries and support measures that are channelled into agriculture are not at all or not sufficiently adapted to the fact that farms don't have the same requirements for participation in the market. At the same time there are farms (rural households), which produced only for himself and specialized farms that produce mainly for the market. Some SEE countries have introduced the classification of farms in the commercial and non-commercial and propose measures to compensate non-sufficient income of non-commercial farms in a function of balanced regional and rural development. Starting from previous experiences and researches agricultural faculties and universities can continuo those research more precisely, justify division on commercial versus nom commercial farms and propose particular measures which should special target non-commercial farms. Conducting this research at the same time in several SEE countries would enable the exchange and use a different experience and improve common knowledge and treatment of that issue.

References: This idea may be nominated for funding from certain European and regional funds earmarked for support of scientific research.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Dr. Željko Vaško, Assistant Professor

Telephone: +387 51 330 929

E-mail: zeljko.vasko@agrofabl.org

Development of "knowledge networks" for rural development - Mobilisation of intangible intellectual assets and human capital for rural development

The project would aim to investigate the potential of universities in development of "knowledge networks" in the field of rural development. These networks would connect all the actors involved in the transfer of knowledge and skills to rural communities and rural stakeholders. Can universities become the coordinators of the development process in rural areas through the development of such networks? Can these networks have a transmitter role of research results into practice? Can universities become carriers of different regional and local development initiatives? The project would offer a model for the development of knowledge networks, and establish the framework for a needs assessment in the area of research, development of skills, transfer of knowledge into practice, etc. The main benefits of the project would be in bringing scientific and development process in closer relation to timely response on development problems, as well as in identifying of adequate development models. In this way, situation would have been avoided, of application of bed practices or non-adequate models from the side of different organizations and individuals that appear in the role of development agents in rural areas. All these agents would become a part of knowledge networks.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Gordana Roković, M.Sc.

Telephone: +387 51 330 928

E-mail: gordana.rokvic@rep-srpska.eu

Agriculture extension - simulation methods for transfer of extension skills

Agriculture extension exists as a module in first cycle of studies at the study program of Agro-business and Rural Development and at the II cycle at the Masters in Rural Development. Agriculture Faculty however could also offer separate specialisation program for Extension workers for the purpose of their licence education. Because of this ambitious program, we would welcome any possibility this exchange could offer for a visiting professor experienced in Agriculture extension methods.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person: Gordana Roković, M.Sc.

Telephone: +387 51 330 928

E-mail: gordana.rokvic@rep-srpska.eu

Research on selected topics in agricultural economics

- Multicriterial mathematical programming
- Agricultural sector modelling
- Rural development (econometric analysis, spatial econometric analysis, rural indicators assessments, policy evaluation),
- Food economics (consumer and sensory studies, quality policy, agro-food chain management, food retailing restructuring and market powers)

References: 7 FP EU projects, bibliography

Proposed by: University of Ljubljana, Biotechnical faculty

Contact person: Dr. Emil Erjavec, Chair for agricultural economics, policy and law, Department for Animal Science, Biotechnical Faculty University of Ljubljana

Telephone: +386 1 3203 852

E-mail: emil.erjavec@bf.uni-lj.si

2. International Exchange of lecturers, Researchers and Students, and the Organization of Other Activities for These Groups

Exchange of lectures, development of new curriculum for courses in organic agriculture and organization of summer schools for students from the region

Proposed by: University of Maribor, Faculty of Agriculture and Life Sciences

Exchange of professors, researchers, assistants and students

Proposed by: University of Novi Sad, Faculty of Agriculture

Contact person: Dean, Prof. Milan Krajinovic, PhD,

Telephone: +381 21 485 3210

E-mail: dean@polj.uns.ac.rs

The exchange of lecturers at the doctoral and master's studies

Most of the agricultural faculties and universities from SEE countries offer a variety of interdisciplinary studies at the second and third cycle of study for which there are not enough quality teachers at the particular university. Therefore, the exchange of lecturers has great importance for achieving and maintaining the quality of those studies.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person:	**Telephone:**	**E-mail:**
Ilija Komljenović, Professor	+387 51 330 959	ilija.komljenovic@agrofabl.org
Dragutin Matarugić, Professor	+387 51 330 952	matarugicd@yahoo.com
Dr. Aleksandar Ostojić, Assistant Professor	+387 51 330 972	aleksandar.ostojic@agrofabl.org

Cooperation in nomination of mentors and committee members for defences MSc and PhD thesis

Host University nominates mentors or members of committee for approval or defence MSc and PhD thesis for own MSc and PhD students from SEE universities.

Proposed by: University of Banja Luka, Faculty of Agriculture

Contact person:	**Telephone:**	**E-mail:**
Mile Dardić, Professor	+387 51 330 953	mile.dardic@agrofabl.org
Dragutin Matarugić, Professor	+387 51 330 952	matarugicd@yahoo.com
Dr. Aleksandar Ostojić, Assistant Professor	+387 51 330 972	aleksandar.ostojic@agrofabl.org

3. Proposals for Cooperation on Strategic Issues

Establishing SEE student network and helping students in organizing the conference about student's issues.

The focus of the conference would be to define the problems of the region and it would be open to students from all over Europe. They would be able to discuss problems of mobility, professional competence and employment after graduation, as well as many other issues that plague our students. The results would be beneficial for both students and teachers. Our experience from last Tempus project speaks strongly in favour of such an initiative and, as far as we know, there are no similar conferences in Europe and we could be the first to run something like this and attribute to comprehension of SEE as a region. Our faculty would be willing to accept the organization of the first conference.

Proposed by: University of Zagreb, Faculty of Agriculture

Contact person: Prof. Ivan Pejic

Telephone: +385 1 239 3936

E-mail: ipejic@agr.hr

Biennial gathering of the dean and vice dean (decision makers) of all the SEE agricultural faculties with the aim of discussing and defining development policies (every two years the gathering would be held in different place).

The mission of this gatherings would be defining of the region`s profile; detect links for cooperation and joint activities at EU level. This idea is also part of our experience with regional cooperation which is stressed at the meeting in Ljubljana : „There is no successful international co-operation without the will of institution`s leaders". Since we already have a certain individual (bilateral) cooperation in the field of teaching and research, the objective of these meetings is to remove administrative barriers. In our opinion, only Deans and Vice-Deans can remove them because they run the institutions. The reasons for forming the regional cooperation which are stressed in Ljubljana, remain the same - similar languages, similar economic infrastructure, transport connections, etc.

Proposed by: University of Zagreb, Faculty of Agriculture

Contact person: doc. dr. sc. Josip Juračak

Telephone: +385 1 239 3936

E-mail: jjuracak@agr.hr

Annex 2: List of Coordinators for International Cooperation of Faculties of Agriculture in South-East Europe

BOSNIA AND HERZEGOVINA

University of Banja Luka, Faculty of Agriculture

Contact person: Dr Miljan Cvetkovic, Assistant Professor

Telephone: +387 51 330 9038;

Mobile phone: +387 65 927 565

E-mail: miljan.cvetkovic@agrofabl.org

University of Mostar, Faculty of Agriculture and Food Technology

Contact person: Assistant PhD Adrijana Filipovic, vice-dean for International cooperation;

Telephone: +387 36 377 107

E-mail: adrijana.majic@sve-mo.ba

University of Sarajevo, Faculty of Agriculture and Food Science

Contact person: Hamid Čustović, Ph.D., V. Dean for International Cooperation

Telephone: +387 33 225 727

E-mail: h.custovic@ppf.unsa.ba; custovic.hamid@gmail.com

CROATIA

University of Josip Jurij Strossmayer in Osijek, Faculty of Agriculture

Contact person: Sonja Maric, Full professor, vice dean for International Affairs

Telephone: +385 31 224 278; +385 91 224 2007

E-mail: smaric@gmail.com

University of Zagreb, Faculty of Agriculture

Contact person: Prof. Ivan Pejic

Telephone: +385 1 239 3936

E-mail: ipejic@agr.hr

KOSOVO UNDER UNSCR 1244/99

University of Pristine, Faculty of Agriculture and Veterinary Studies

Contact person: Dr. sc. Skender Muji, Dean

Telephone: +381 38 603 700

E-mail: skendermuji@agr.uni-pr.edu

MACEDONIA

University of Skopje, Faculty of Agriculture Sciences and Food

Contact person: Prof. Elizabeta Angelova, PhD

Telephone: +389 70 760 873

E-mail: angelovaelizabeta@yahoo.com; eangelova@zf.ukim.edu.mk

MONTENEGRO

University of Montenegro, Biotechnical Faculty

Contact person: Dr. Slavko Mirecki

Telephone: +382 69 507 394

E-mail: slami@t-com.me

SERBIA

University of Belgrade, Faculty of Agriculture

Contact person: Dr. Nebojša Ralević

Telephone: +381 11 261 5315

E-mail: office@agrif.bg.ac.rs; nralevic@agrif.bg.ac.rs;

University of Novi Sad, Faculty of Agriculture

Contact person: Milan Krajinovic, Ph.D., V. Dean for Science and International Cooperation

Telephone: +381 21 485 3210

E-mail: dean@polj.uns.ac.rs

SLOVENIA

University of Ljubljana, Biotechnical Faculty

Contact person:	Telephone:	E-mail:
Prof. dr. Franc Štampar	+386 1 3203 144	franc.stampar@bf.uni-lj.si
Prof. dr. Emil Erjavec	+386 1 320 3852	emil.erjavec@bf.uni-lj.si

University of Maribor, Faculty of Agriculture and Life Sciences

Contact person: Janja Kristl, head of international relations

Telephone: +386 23 209 042

E-mail: janja.kristl@uni-mb.si