

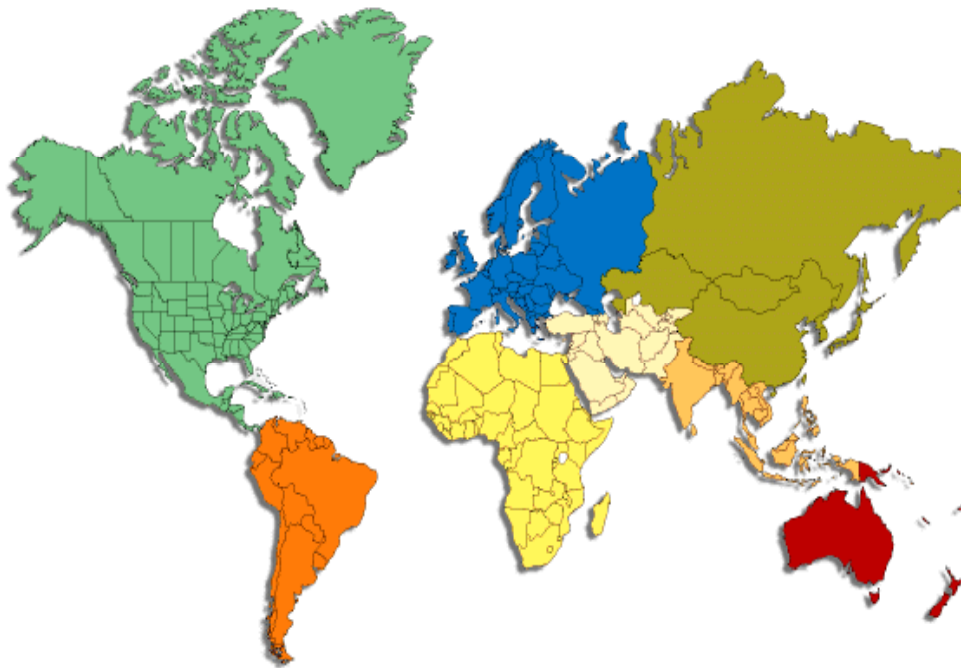
EU Legislation Relating to Honey



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Honey is the most important primary product of beekeeping both from a quantitative and an economic point of view.

- World honey production is about 1.3 million tons
- Asia is the main producing continent, followed by America and Europe in the third place.



**Honey production per continent
- 2004**

Continent	% Tons
Africa	11,2
Central America	1,2
South America	10,0
North America	13,2
Asia	38,3
Europe	23,3
Oceania	2,7

Source: FAO

Production, export, import and consumption of honey in the 20 major producing countries

<i>Country</i>	<i>Produc. t/year</i>	<i>Export t/year</i>	<i>Import t/year</i>	<i>Consump. t/year</i>	<i>Consump. kg/cap</i>
China	254,000	103,000	0	151,000	0,1
USA	84,000	5,000	79,000	185,000	0,6
Argentina	80,000	88,000	0	2,000	<0,1
Turkey	60,000	18,000	0	42,000	0,7
Ukraine	60,000	15,000	0	45,000	0,8
Mexico	59,000	31,000	0	28,000	0,3
India	52,000	3,000	0	49,000	<0,1
Germany	35,000	13,000	105,000	127,000	1,5
Greece	33,000	18,000	3,000	18,000	1,8
Canada	32,000	15,000	3,000	20,000	0,7
Spain	32,000	9,500	7,500	30,000	0,8
France	30,000	3,000	8,000	35,000	0,6
Iran	27,000	5,000	0	22,000	0,3
Hungary	24,000	15,000	100	8,900	0,9
Italy	24,000	11,000	10,000	34,000	0,6
Egypt	20,000	5,000	0	15,000	0,2
Brazil	20,000	0	0	20,000	0,1
Australia	19,000	11,000	34	8,000	0,4
Israel	5,400	160	210	5,450	0,9
Japan	3,000	0	40,000	43,000	0,3

Production, export, import and consumption of honey in the EU

<i>Country</i>	<i>Produc. t/year</i>	<i>Export t/year</i>	<i>Import t/year</i>	<i>Consump. t/year</i>
EU total	123,399	48,362	190,330	265,367
Germany	23,691	21,161	93,532	96,062
Spain	35,279	11,633	11,375	35,021
France	15,000	2,368	15,165	27,797
United Kingdom	7,000	954	21,867	27,913
Italy	7,000	2,537	14,449	18,912
Greece	15,146	687	1,609	16,068
Austria	9,000	763	4,425	12,662
Netherlands	0	552	8,783	8,231
Belgium-Luxemburg	0	0	6,800	6,800
Portugal	4,386	1,721	1,949	4,614
Sweden	3,400	27	2,644	6,017
Denmark	0	3,268	5,436	2,168
Finland	1,700	0	1,002	2,702
Ireland	197	197	1,296	1,296

-The European Union is the largest import market for honey in the world - 47 per cent of internationally traded honey is imported by the European Union.

-Honey production in the European Union can not satisfy domestic demand. Honey producers in the European Union can supply only 46 per cent of the honey for domestic consumption.

-EU countries have to import most of their honey, partly from countries within the EU (23 per cent of total imports), but mainly from countries outside the European Union (77 per cent).



The honey from non-EU country may be exported to the European Union only the exporting country is on the list of selected countries so called “third countries”. This list is laid down in Commission Decision 2004/432/EC.

List of Third Countries from which the import of honey is allowed only:

Argentina
Australia
Brazil
Belize
Canada
Switzerland
Chile
Cameroon
China
Cuba
Ethiopia
Guatemala
Croatia

Israel
India
Jamaica
Kyrgyzstan
Montenegro
Mexico
New Caledonia
Nicaragua
New Zealand
French Polynesia
Pitcairn Islands
Serbia
Russia

San Marino
El Salvador
Thailand
Turkey
Taiwan
Tanzania
Ukraine
Uganda
United States
Uruguay
Zambia

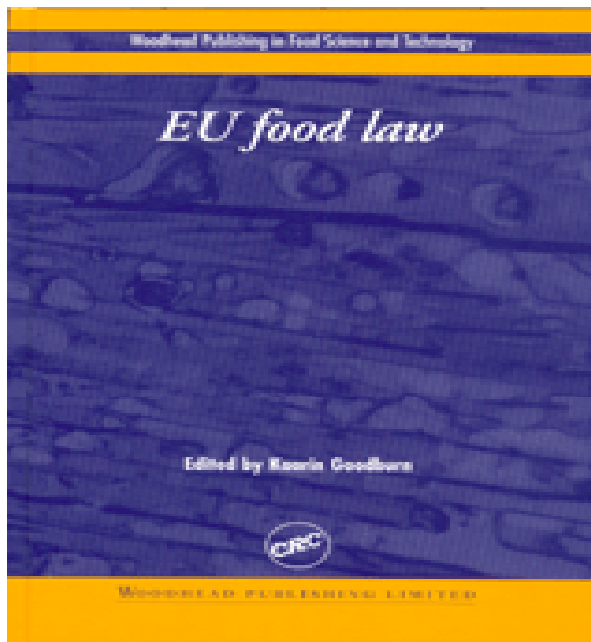
The European Union as largest honey importer to protect the consumers has created restrictions for honey importation – All honey intended to be sold in the EU market needs to adhere EU LEGISLATION



- Honey is subject to both horizontal and vertical product legislation.

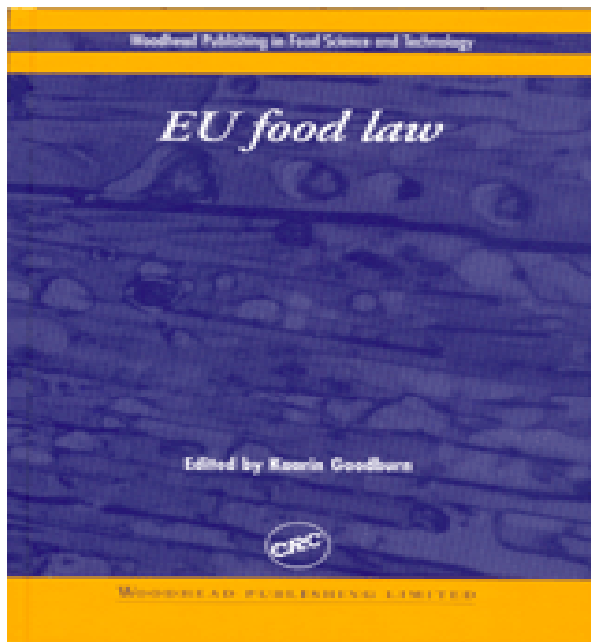
Horizontal EU legislation

- Horizontal legislation includes all legislation regarding animal products. Important laws regarding horizontal legislation are the following:



- Council and Parliament Regulation 178/2002/EC, also known as the General Food Law – contains general provisions for traceability, which concern all food business operators in the food chain except primary producers. This traceability means that the origin of the food has to be known at all stages in the food chain. Importers are also affected, because they will be required to identify from whom the product was bought in the country of origin. This regulation should facilitate the recall of unsafe products from the market.

Horizontal EU legislation



- Council and Parliament Regulation 853/2004/EC, defines certain specific hygiene requirements for food of animal origin
- Council Regulation 1990/2377/EEC, specifying the maximum residue level of veterinary medicines in products of animal origin
- Council Directive 86/363/EEC, on the fixing of maximum levels for pesticide residues in and on foodstuffs of animal origin

Vertical EU legislation



-Vertical legislation includes one specific legislation for honey, which called The Honey Standard.

- The Honey Standard is laid down in Council Directive 2001/110/EC, defines the characteristics of honey and the requirements for placing it on the EU market.

- This Directive shall apply to the products defined in Annex I.
- These products shall meet the requirements set out in Annex II.

Annex I, NAMES, PRODUCT DESCRIPTIONS AND DEFINITIONS

1. Definition

Honey is the natural sweet substance produced by *Apis mellifera* bees from the nectar of plants or from secretions of living parts of plants or excretions of plant-sucking insects on the living parts of plants, which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in honeycombs to ripen and mature.



2. The main types of honey are as follows:

(a) according to origin: (i) blossom honey or nectar honey and (ii) honeydew honey

(b) according to mode of production and/or presentation:

(iii) comb honey



(iv) chunk honey or cut comb in honey



(v) drained honey



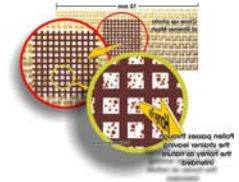
(vi) extracted honey



(vii) pressed honey



(viii) filtered honey



3. Baker's honey

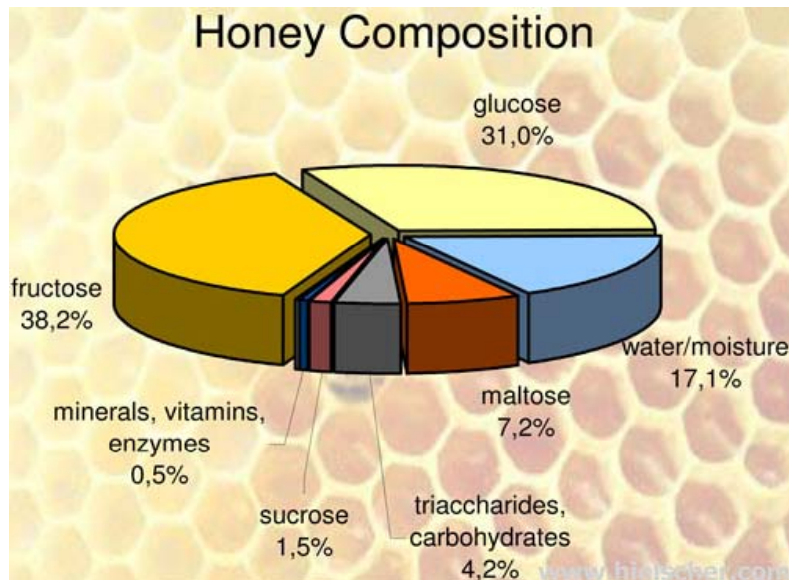
-Honey which is (a) suitable for industrial uses or as an ingredient in other foodstuffs which are then processed and (b) may:

- have a foreign taste or odour, or
- have begun to ferment or have fermented, or
- have been overheated



ANNEX II, COMPOSITION CRITERIA FOR HONEY

-Honey consists essentially of different sugars, predominantly fructose and glucose as well as other substances such as organic acids, enzymes and solid particles derived from honey collection. The colour of honey varies from nearly colourless to dark brown. The consistency can be fluid, viscous or partly to entirely crystallised. The flavour and aroma vary, but are derived from the plant origin.



When placed on the market as honey or used in any product intended for human consumption, honey must meet the following composition criteria:

1. Sugar content

1.1. Fructose and glucose content (sum of both)

- blossom honey not less than 60 g/100 g
- honeydew honey, blends of honeydew honey with blossom honey not less than 45 g/100 g

1.2. Sucrose content

- in general not more than 5 g/100 g
- false acacia (*Robinia pseudoacacia*), alfalfa (*Medicago sativa*), Menzies Banksia (*Banksia menziesii*), French honeysuckle (*Hedysarum*), red gum (*Eucalyptus camadulensis*), leatherwood (*Eucryphia lucida*, *Eucryphiamilliganii*), *Citrus* spp. not more than 10 g/100 g
- lavender (*Lavandula* spp.), borage (*Borago officinalis*) not more than 15 g/100 g

2. Moisture content

- in general not more than 20 %
- heather (*Calluna*) and baker's honey in general not more than 23 %
- baker's honey from heather (*Calluna*) not more than 25 %

3. Water-insoluble content

- in general not more than 0,1 g/100 g
- pressed honey not more than 0,5 g/100 g

4. Electrical conductivity

- honey not listed below, and blends of these honeys not more than 0,8 mS/cm
- honeydew and chestnut honey and blends of these except with those listed below not more than 0,8 mS/cm
- exceptions: strawberry tree (*Arbutus unedo*), bell heather (*Erica*), eucalyptus, lime (*Tilia* spp.), ling heather (*Calluna vulgaris*), manuka or jelly bush (*Leptospermum*), tea tree (*Melaleuca* spp.)

5. Free acid

- in general not more than 50 milli-equivalents acid per 1 000 grammes
- baker's honey not more than 80 milli-equivalents acid per 1 000 grammes

6. Diastase activity and hydroxymethylfurfural content (HMF) determined after processing and blending

(a) Diastase activity (Schade scale)

- in general, except baker's honey not less than 8
- honeys with low natural enzyme content (e.g. citrus honeys) and an HMF content of not more than 15 mg/kg not less than 3

(b) HMF

- in general, except baker's honey not more than 40 mg/kg (subject to the provisions of (a), second indent
- honeys of declared origin from regions with tropical climate and blends of

Other Bee products quality criteria

There are no International standards for the other bee products, only some standards on the national level.

The International Honey Commission works at present on the standardisation of other bee products, excepting bee venom.

BEESWAX

Beeswax is the most important bee product besides honey and apart from its use in beekeeping it is predominately used in cosmetic industry. As this product has a relatively high price, the authenticity issue is an important one. It can be adulterated with synthetic products (e.g. paraffin wax) or with plant waxes (e.g. carnauba wax).



Composition criteria for routine authenticity testing of beeswax
according to the Ceralyse laboratory, Bremen, Germany

Quality Criteria	Value
<i>Water content</i>	< 1%
Refractive index, 75o C	0.4398-1.4451
Melting point	61-65 C
Acid Number	17-22
Ester Number	70-90
Ester/Acid ratio	3.3-4.3
Saponification Number	87-102
Mechanical impurities, additives	absent
Glycerols, polyols, fatty acids fats	absent
Hydrocarbons	max. 14.5 %*

Royal Jelly

The analysis of royal jelly is generally based on the quantitative determination of the three principal categories of compounds (lipids, sugars and proteins), its water content and of other significant indices such as pH and total acidity. Lipids are the most important compounds in determining the authenticity or adulteration of royal jelly, since several of them are not found in any other natural products.



	Fresh (*)	Lyophilized
Water g /100 g	60 – 70	< 5
Lipids g /100 g	3 – 8 (4-8)	8 – 19
10-Hydroxy-2-decenoic acid g /100 g	> 1,4 (1.4-6)	> 3,5
Protein	9 – 18	27 – 41
Fructose + glucose+ sucrose g /100 g	7 – 18 (11-23)	-
Fructose g /100 g	3 – 13	-
Glucose g /100 g	4-8	-
Sucrose g /100 g	0,5 – 2,0	-
Ash g /100 g	0,8 - 3,0	2 – 5
pH	3,4 - 4,5 (3.5-4.1)	3,4 – 4,5
Acidity (ml 0.1N NaOH/g)	3,0 - 6,0	

Suggestion for composition criteria of royal jelly (according to Sabatini et al. 2007)

Propolis

The authenticity of propolis is the most complex of all bee products. Botanical authenticity is more important than the geographical one, as there are different types of propolis, depending on the plant from which propolis is produced.

The different types of propolis have a specific composition which can be determined. From commercial point of view the poplar and the Brazilian green propolis are most important. All other propolis types are of local importance only.



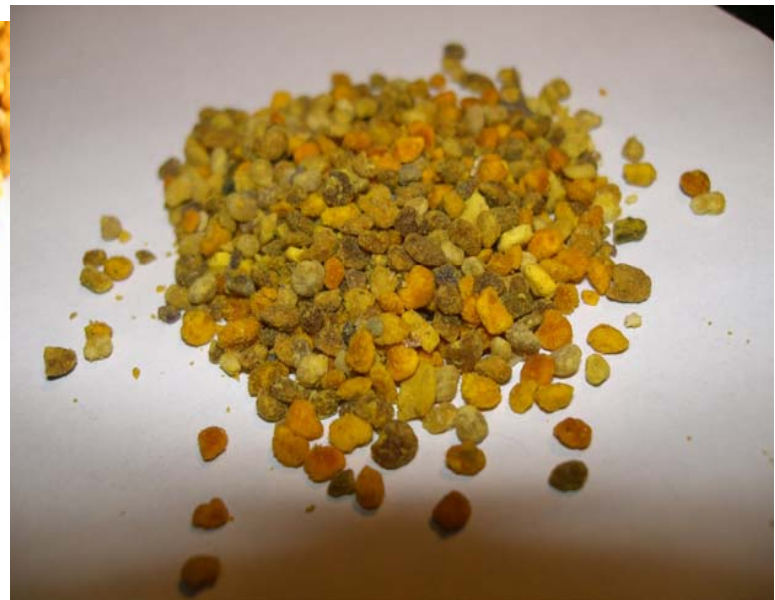
Proposed standards for raw poplar propolis (Popova et al., 2007) and Brazilian green propolis (Marchini et al., 2005).

Component	Poplar Propolis min Values, g/100 g	Green Propolis min Values , g/100 g
Balsam	45	35
Total phenolics	21	5
Total flavones and flavonols	5	-
Total flavanones and dihydroflavonols	4	-
Total flavonoids	9	0,5
Beeswax	Max. 40	
Insoluble matter	Max. 5	

Pollen

Pollen is produced in various countries as a feeding supplement for bees as well as food stuff or food supplement for human nutrition.

An IHC working group, has suggested a world standard of pollen. The limits for the different quality criteria vary within a broad range limits. This variation is due to the wide variety of pollen, gathered by the bees.



Proposition for a standard of dried pollen (according to Campos et al. 2007)

Main Components	Minimum – Maximum g/100g dry weight
Proteins	10-40
Total carbohydrate	13-55
Dietary fibre, pectin	0,3-20
Ash	2-6
Undetermined	2-5
T	1-13 (1-10)

EU legislation on monitoring of residues and contaminants in honey

There is specific EU legislation with regard to residues of veterinary medicines, and some pesticides and contaminants in food of animal origin. Honey is considered as an animal product.

Residue monitoring requirements are described in

Council Directive 96/23/EC.

Under this legislation **residue monitoring plans** are required from third countries for imports into the EU of all animals and products of animal origin.



Council Directive 96/23/EC

A principal objective of this Directive is to detect illegal use of substances in animal production as well as detecting the misuse of authorized veterinary medicinal products. The Directive lays down measures requiring European Member States to monitor the substances and groups of residues listed in Annex I to the Directive. The substance groups are classified in two main categories - Group A and Group B:

Group A lists substances having anabolic effect and unauthorized substances (i.e. most of the substances which are prohibited from use in food producing animals in the EU) and the Group is subdivided into 6 subgroups (A1-A6)

Group B contains a list of Veterinary drugs and contaminants i.e. residues of many pharmacologically active substances which may be authorized for use in food producing animals in the EU. It also comprises organochlorine and organophosphate pesticides and also chemical elements such as lead, cadmium and mercury.

Group A – Substances having anabolic effect and unauthorized substances

- (1) Stilbenes, stilbene derivatives, and their salts and esters
- (2) Antithyroid agents
- (3) Steroids
- (4) Resorcylic acid lactones including zeranol
- (5) Beta-agonists
- (6) Compounds included in Annex IV to Council Regulation (EEC) No 2377/90.

Group B - Veterinary drugs (1) and contaminants

- (1) Antibacterial substances, including sulphonamides, quinolones
- (2) Other veterinary drugs
 - (a) Anthelmintics
 - (b) Anticoccidials, including nitroimidazoles
 - (c) Carbamates and pyrethroids
 - (d) Sedatives
 - (e) Non-steroidal anti-inflammatory drugs (NSAIDs)
 - (f) Other pharmacologically active substances
- (3) Other substances and environmental contaminants
 - (a) Organochlorine compounds including PCBs
 - (b) Organophosphorus compounds
 - (c) Chemical elements
 - (d) Mycotoxins
 - (e) Dyes
 - (f) Others
- (1) Including unlicensed substances which could be used for veterinary purposes.

Annex II to the Directive lists for each product which Group A and Group B subgroups must be monitored for in the respective products.

Veterinary drugs and contaminants are controlled in:

Substance categories		Bovine Porcine Ovine Caprine Equine	Poultry	Fish	Milk	Eggs	Rabbit	Honey
A	1	X	X	X			X	
	2	X	X				X	
	3	X	X	X			X	
	4	X	X				X	
	5	X	X				X	
	6	X	X	X	X	X	X	X
B	1	X	X	X	X	X	X	X
	2 a	X	X	X	X		X	
	2 b	X	X			X	X	
	2 c	X	X				X	X
	2 d	X						
	2 e	X	X		X		X	
	2 f							
	3 a	X	X	X	X	X	X	X
	3 b	X			X			X
	3 c	X	X	X	X		X	X
	3 d	X	X	X	X			
	3 e			X				

Veterinary drugs and contaminants are controlled in honey:

Group A 6: Compounds included in Annex IV (pharmacologically active substances for which no maximum levels can be fixed) to Council Regulation 2377/90/EEC:

Pharmacologically active substance(s)

Chloramphenicol

Chloroform

Chlorpromazine

Colchicine

Dapsone

Dimetridazole

Metronidazole

Nitrofurans (including furazolidone)

Ronidazole

Group B 1: Antibacterial substances (Streptomycin, Sulphonamides, Tetracyclins)

Group B 2c: Carbamates and pyrethroids

Group B 3a: Organochlorine compounds including PCBs (Polychlorinated Biphenyls)

Group B 3b: Organophosphorus compounds

Group B 3c: Chemical elements e.g. heavy metals

Annex III establishes sampling strategy and Annex IV define the minimum number of samples which must be taken. Each sample can be analyzed for detecting the presence of one or more substances.

HONEY

A. Sampling requirements

- The sample size will depend on the analytical method used.

- The samples can be taken at any point in the production chain, provided that it is possible to trace the honey back to the original producer.

B. Sampling level and frequency

- The number of samples to be taken each year must at least equal to 10 per 300 tonnes of the annual production for the first 3 000 tonnes of production and one sample for each additional 300 tonnes.

- The following breakdown must be respected:

- Group B 1 and Group B 2 (c): 50 % of the total number of samples,
- Group B 3 (a),(b) and (c): 40 % of the total number of samples.



Annex V lists the Community reference laboratories for the detection of residues of certain substances

One of the functions of Community reference laboratories is to help the national reference laboratories (NRLs) for residues to implement an appropriate quality assurance scheme system based on good laboratory practice (GLP) principles.



HONEY – IMPORTS FROM THIRD COUNTRIES INTO THE EU

In order for of third countries to be included on the list from which Member States are authorized to import animals and animal products, they are required to submit a **residue monitoring plan** to the European Commission setting out the guarantees which it (the Third country) offers as regards the residue status of exported product with respect to all of the specified substance groups listed in Annex I to [Council Directive 96/23/EC](#)

The first time a third country presents its residue monitoring plan, it is necessary to present the general context in which the plan is situated. This includes:

- The legal framework for the residue monitoring plan;
- The structure of the official services in charge of the controls;
- The laboratories undertaking the official analysis and their qualifications;
- The official sampling procedure
- The measures taken in case of non-respect of the legislation.

What next?

The responsible authority should forward its residue plan to the European Commission for approval. The address for correspondence is:

**European Commission
DG Health and Consumer Protection
Chemical and physical risks, surveillance
1049 – Brussels
Belgium**

- The Commission services will examine the plan and if it meets their approval, an appropriate legislative decision will be sent to the relevant Standing committee for approval. If the plan needs some development, this would be discussed with the country in question.
- Countries whose residue plans are approved are listed in the amendments of Commission Decision 2004/432/EC on the approval of residue plans of third countries according to Council Directive 96/23/EC.

Third countries should submit their monitoring plan to the EU annually, before the 31st March.

- The plan is based on an annual significant sampling of the product, analysed for banned products, veterinary substances or for chemical or pesticide contaminants.

- The plan is based on targeted sampling, established in the light of the analysed results of the preceding year. This means that the plan cannot be correctly evaluated unless it is presented in parallel with the results of the previous year's results.

What needs to be in a honey residue monitoring plan?

-Country:

**-Total honey production
(tonnes) exported to the EU
the previous year :**

**-Period covered by the
plan:**



Group of substances (Directive 96/23/EC)	Compounds analysed	Material analysed/ Method	Detection level	Level of action	Number of samples	Laboratory
B1						
B2c						
B3a						
B3b						
B3c						

What can the beekeepers do to improve on honey quality?

The beekeepers should at least use as preventive measures:

GBP (Good Beekeeping Practices)

GHP (Good Hygiene Practices)



**Thank you very much for
your attention**