

# EU legislation: Maximum Residue Levels (MRLs) of pesticides in food

## 1. Introduction

In the European Union legislation has been laid down regulating the presence of pesticide residues in food products, by setting so-called maximum residue levels (MRLs).

MRLs are the maximum allowed concentrations of pesticide residues in food products. There is an on-going programme of setting MRLs for pesticides that are used in the Member States of the European Union. Please note that MRLs can also be set for pesticides that are banned for use in the EU, but may still be used in other countries (e.g. DDT).

## 2. Outline of the legislation

### 2.1. Current legislation



Current EU legislation on MRLs is established in the following Directives and amendments:

- Directive 76/895/EEC establishing MRLs for selected fruits and vegetables.
- Directive 86/362/EEC establishing MRLs for cereals and cereal products.
- Directive 86/363/EEC establishing MRLs in products of animal origin.
- Directive 90/642/EEC establishing MRLs in products of plant origin, including fruits and vegetables.

For the crop-pesticide combinations listed in the Directives here above, MRLs are harmonized in the EU. For other crops and pesticides, Member States may have introduced their own national MRLs. Note that MRLs are **crop-pesticide** specific. This means that maximum limits for one pesticide may vary depending on the crop it is used on. If the EU has not specified this in legislation, Member States may have introduced national crop-pesticide MRLs.

➡ The table at the end of this document provides a description on how to find the harmonised MRLs in EU legislation. To check the limits of national MRLs in Member States, please see the documents on MRLs for Member States.

In general, the levels of the MRLs are fixed on the basis of Good Agricultural Practice (GAP). Moreover, the levels are specific for crop-pesticide combinations; which means for example that the MRL of a certain pesticide on apple can differ from the MRL of that same pesticide on papaya. Besides the level determined on the basis of GAP, also scientific data showing, in particular, the toxicology of the substance and its effect on human health are taken into account.

So what happens when no experimental data are available? In these cases, the MRLs are automatically fixed by default at the limit of detection (LOD). This is the lowest level that can be measured in laboratory tests. When new information for these specific MRLs becomes available, on for example GAP or residue trials, these MRLs can be reconsidered. When the MRL equals the LOD, and they are not based on the levels that can be achieved when farming according to GAP, it might be very difficult to comply with these standards.

Please note this is often the case for products from developing countries where there are no experimental data as required. In several cases it makes it difficult to comply with the MRL requirements set on the LOD, see the example of the pineapples from Ghana.

### Case: Pineapple & ethophon

In July 2001, the EU had set the MRL for the pesticide ethophon on 0.5 mg/kg, which is the limit of detection. That same month, the Italian government inspectors found MRLs for ethophon in pineapples from Ghana above the set limit. As in pineapple most MRLs in the EU are fixed at the LOD (=the detection limit), it is often difficult to comply with if that specific pesticide is used in production.

The above-described incident led to the phasing out of the use of ethophon in Ghana, which solved the problem. However, later in the case of Ivory Coast, having the same difficulties with compliance, the EU raised the MRL on request of pineapple producers of Ivory Coast to a level of 2 mg/kg, which equals the level set in Codex Alimentarius MRLs.

The above described example shows that as some MRLs are fixed at very low levels in the European Union, sometimes even stricter than those of the Codex Alimentarius, it is very important to be aware of:

- If there are MRLs for the pesticide you use on your crops and
- if yes, if your product complies with the limit(s) set.

EU legislation on MRLs is currently being revised in order to harmonise MRLs in the whole of the EU. In this section, the legislation currently in force is first described, after which the new legislation is presented.

## 2.2. New legislation harmonizing MRLs of the Member States

The EU is in the process of harmonizing all existing MRLs at EU level. In February 2005, a new **Regulation (396/2005)** was published. The most important aspect of the new MRLs Regulation is that **national** MRLs in the Member States will cease to exist and become harmonised at EU level. This will be done by incorporating national MRLs in Regulation 396/2005 and make them applicable throughout the whole European Union. The result will be that Member States do not have their own MRL limits anymore.

The Directives currently in force with the harmonised EU MRLs will also be incorporated in the new Regulation. This, however, will only take place once all Annexes to the Regulation have been finalised. At the time of publication, only one Annex was included. The EU works along the lines of product groups that are gathered in several annexes (see below). The Regulation will become applicable in all Member States six months after all Annexes laying down the MRLs have been published. Until this time, national MRLs in the Member States will continue to apply.

In February 2006, Annex 1, covering the **scope** of the Regulation, was added by means of an amendment (Regulation 178/2006). The other Annexes are expected to be added in the course of 2008 and will establish MRLs for the products listed in Annex 1, after which the Regulation will enter into force.

The product groups covered are:

- Fruit (fresh or frozen) and nuts
- Vegetables (fresh or frozen)
- Pulses, dry
- Oilseeds and oilfruits
- Cereals
- Tea, coffee, herbal infusions and cocoa
- HOPS (dried)
- Spices
- Sugar plants
- Products of animal origin – terrestrial animals (including meat, honey, eggs, milk etc)
- Fish and fish products, shell fish, molluscs and other marine and freshwater food products
- Crops exclusively used for animal feed

The products as specified in the Annex may not contain MRLs above the limits (yet to be set) in Annexes 2 and 3 from the time they are placed as food or feed on the EU market.


*Please note* that MRLs are also applicable for processed and composite products, taking into account changes in the levels of pesticide residues caused by processing and/or mixing.

➔ For more details about the products covered by the new MRLs legislation, refer to the external link to Regulation (EC) 178/2006 (amending Regulation 396/2005)

In addition to the crop-pesticide specific MRLs that will be laid down in the Annexes of the Regulation, the new Regulation also establishes a general maximum residue level allowed in products marketed in the EU but which are not covered by the annexes. The **general limit** has been set at **0.01 mg/kg for product for which no specific MRL is set or for active substances unless different default values are fixed.**

➔ For more information on the new MRLs Regulation, please see the external link.



### How to find harmonized EU MRLs in the EU legislation currently in force?

1. Go to the **external links section** and select the link "MRLs overview of the EU" ([http://europa.eu.int/comm/food/plant/protection/pesticides/index\\_en.htm](http://europa.eu.int/comm/food/plant/protection/pesticides/index_en.htm)).
2. It is now possible to download pdf versions or excel tables of MRLs in the EU sorted by a) pesticide, b) crop group and c) by commodity. If you select the file title, you automatically download the pdf. If you select the excel symbol , you download the excel file. **Please note this excel file is huge! 4200 kb.** If you have troubles downloading the file, send an e-mail to [marketaccess@cbi.eu](mailto:marketaccess@cbi.eu), we can send it to you by e-mail.

*Please note that the EU information dates from 2004. New or amended MRLs from after this date are not included in the table. Links to amendments can be found here:*  
[http://ec.europa.eu/food/plant/protection/pesticides/legislation\\_en.htm](http://ec.europa.eu/food/plant/protection/pesticides/legislation_en.htm).

*The European Commission is working on a userfriendly database with all MRLs included. As soon as this is available the CBI will update this document.*

### 3. How to search these large files?

- In **pdf-files** you can use the binocular-button  in Acrobat to search the text. Type for example "pineapple" and acrobat reader will search the text for this word.
  - In **excel files** you can sort the information to your convenience. If you need MRLs for one crop you can sort by crop and then select the information you need.  
(1) Open the excel file, (2) select the columns you would like to sort (sort all by clicking on the small grey square above row 1 and left of column a), (3) go to "Data" in the menu bar and select "sort" (with the symbol ). Choose the column you would like to sort on.  
**Please note:** if you forget to select all columns you need to sort, it will not sort correctly and the information will get mixed up (incorrect MRL-commodity combinations). So always check if nothing went wrong when sorting. If you need help, send us an e-mail!
4. Always take note of the update-date of the tables provided by the Commission. It is always wise to check if there are no amendments which are more recent than the update date!

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