Oils and fats for a sustainable world

FACTSHEET

Pesticide management

Crucial for farmers and storage managers

Several non-EU countries are big net exporters of oilseeds, especially of soyabeans, sunflower seeds and to a lesser extent rapeseeds. Significant volumes of these oilseeds are destined for the European Union (EU) countries, in particular Austria, Belgium, Germany, the Netherlands and Spain. It is crucial that oilseeds do not contain pesticide residues at levels that are not compliant with EU Regulation.

EU Regulation No. 396/2005 establishes a high level of consumer protection and harmonised provisions within the EU on Maximum Residue Levels (MRLs) in or on food of plant and animal origin.
It applies to fresh food and (raw) commodities in which pesticide residues may be present.

Existing MRLs for all approved active substances are regularly reviewed in the EU. To find out which MRL is applicable for which crop and which pesticide, a database can be consulted on the EU website. The MRLs can be viewed by crop, by crop group, by crop code or by pesticide in all EU languages.

Inappropriate use of pesticides might affect consumers' health through excessive residue presence. It often prevents traders and processing industry from buying oilseeds and cereals, since the regulation restricts us from placing these products on the EU markets for food and/or feed applications.

Deletion of existing MRLs following non-renewal of active substances

The EU authorisation of plant protection products (Regulation (EC) No 1107/2009) builds on preliminary safety criteria, the so-called 'cut-off' criteria. Active substances with health or environmental hazard will not be approved, solely based on the risk they pose. No further risk assessment will be applied.

As a consequence of the non-renewal of active substances meeting the human health 'cut-off' criteria, authorisations of plant protection products containing these active substances are revoked and existing MRLs are deleted (i.e. set at 0,01 mg/kg or to the relevant limit of quantification). The MRLs may already take effect within 6 months after the date of entry into force of the corresponding Regulation.
If not anticipated, such changes of MRLs might be highly problematic and disrupt the trade of crops from third countries with the EU.

Also Import Tolerances are at risk. Import Tolerances are MRLs based on registered uses outside the EU to allow the import of commodities from abroad. These apply to specific pesticides that are not allowed in the EU, without a health or environmental risk, to facilitate international trade. The EU is increasingly inclined to reject Import Tolerances.

Authorities from non-EU countries may intervene in these processes[1]. If no renewal has been initiated or if applications have been withdrawn for an active substance, information on the approval expiry date is publicly available on the website of the EU Pesticide Database.

1) G/SPS/GEN/1494/Rev.1 Committee on Sanitary and Phytosanitary Measures - On-going review of Maximum Residue Levels of pesticides in the European Union - Communication from the European Union - Revision

Maximum EU Residue Levels (EU MRLs - non-exhaustive list)

EU Regulation may be subject to changes. See EU Pesticides Database for most up-to-date information

Pesticides name (MRL definition)	CAS nr.	Application	Status in EU	Date of expiry of approval	EU MRLs (current maximum levels)					Reference EU Pesticides Database	
					Sunflower seeds	Rape-seeds	Soybeans	Linseeds	Corn	Active substances - Active substance details	MRLs - Pesticide residue(s) and Maximum Residue Levels (mg/kg)
Anthraquinone	84-65-1	Repellent	✖		0.02	0.02	0.02	0.02	0.01	link	link
2,4 D	94-75-7	Herbicide, Plant growth regulator	✔	31-12-2030	0.05	0.05	0.05	0.05	0.05	link	link
Acetamiprid	135410-20-7	Insecticide	✔	28-02-2033	0.01	0.4	0.01	0.01	0.01	link	link
Acetochlor	34256-82-1	Herbicide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Azoxystrobin	131860-33-8	Fungicide	✔	31-12-2024	0.5	0.7	0.5	0.4	0.02	link	link
Bifenthrin	82657-04-3	Insecticide, Acaricide	✖		0.02	0.05	0.3	0.02	0.05	link	link
Biphenyl	92-52-4	Fungicide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Boscalid	188425-85-6	Fungicide	✔	15-04-2026	1	1	3	1	0.15	link	link
Bromuconazole	116255-48-2	Fungicide	✔	31-01-2024	0.01	0.01	0.01	0.01	0.01	link	link
Butachlor	23184-66-9	Herbicide	✖		0.01	0.01	0.01	0.01	0.01	link	
Captan	133-06-2	Fungicide, Bactericide	✔	15-11-2024	0.07	0.07	0.07	0.07	0.07	link	link
Carbendazim	10605-21-7	Fungicide	✖		0.1	0.1	0.2	0.1	0.01	link	link
Carbofuran	1563-66-2	Insecticide, Nematicide, Acaricide	✖		0.02	0.02	0.02	0.02	0.01	link	link
Chlorfenapyr	122453-73-0	Insecticide, Acaricide, Miticide	✖		0.02	0.02	0.02	0.02	0.02	link	link
Chlormequat	7003-89-6	Plant growth regulator	✔	28-02-2027	0.01	7	0.01	0.01	0.01	link	link
Chlorpyrifos	2921-88-2	Insecticide	✖		0.01	0.01	0.01	0.01	0.01	link	
Chlorpyriphos-methyl	5598-13-0	Insecticide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Clofentezine	74115-24-5	Acaricide	✖	11-11-2023	0.05	0.05	0.05	0.05	0.02	link	link
Clothianidin*	210880-92-5	Insecticide	✖		0.02 (0.01*)	0.02 (0.01*)	0.02 (0.01*)	0.02 (0.01*)	0.02 (0.01*)	link	link
Cypermethrin	52315-07-8	Insecticide	✔	31-01-2029	0.2	0.2	0.05	0.2	0.3	link	link
Cyproconazole	94361-06-5	Fungicide	✖		0.05 (0.01*)	0.4	0.07	0.05 (0.01*)	0.1 (0.01*)	link	link
Deltamethrin[1]	52918-63-5	Insecticide	✔	15-08-2026	0.05 (0.01*)	0.2	0.02 (0.01*)	0.02 (0.01*)	2	link	link
Dichlorvos	62-73-7	Insecticide, Acaricide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Dimethoate	60-51-5	Insecticide, Acaricide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Diquat	2764-72-9	Herbicide	✖		0.9	1,5	0.3	5	0.02	link	link
Dithiocarbamates	-	Fungicide, insectide	✖		0.1	0.5	0.1	0.1	0.05	link	link
Fluazifop-P	69335-91-7	Herbicide	✔	31-05-2026	0.1	9	15	9	0.01	link	link
Flubendiamide	272451-65-7	Insecticide	✔	31-08-2024	0.01	0.01	0.3	0.01	0.02	link	link
Fluopyram	658066-35-4	Fungicide, Nematicide	✔	31-01-2024	0.7	1	0.2	0.01	0.02	link	link
Flutriafol	76674-21-0	Fungicide	✖		0.02	0.5	0.4	0.02	0.01	link	link
Fluvalinate	102851-06-9	Insecticide, Acaricide	✔	31-08-2024	0.01	0.02	0.01	0.02	0.01	link	link
Fosetyl-Al	39148-24-8	Fungicide, Bactericide	✔	15-03-2025	2	2	2	2	2	link	link
Glufosinate	51276-47-2	Herbicide	✖		0.03	1,5	2	0.03	0.1	link	link
Glyphosate	1071-83-6	Herbicide	✔	15-12-2033	20	10	20	10	1	link	link
Halfenprox	111872-58-3	Insecticide, Acaricide	✖		0.01	0.01	0.01	0.01	0.01	link	
Haloxyfop*	69806-34-4	Herbicide	✖		0.4 (0.3)*	0.2 (0.05)*	0.5	0.01 (0.05)*	0.01	link	link
Heptachlor	76-44-8	Insecticide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Imidacloprid	138261-41-3	Insecticide	✖		0.01	0.01	0.01	0.01	0.01	link	link
Indolylacetic acid	87-51-4	Plant growth regulator	✖		0.1	0.1	0.1	0.1	0.1	link	link
Lambda-cyhalothrin	68085-85-8	Insecticide	✔	31-03-2024	0.2	0.2	0.05	0.2	0.02	link	link
Malathion	121-75-5	Insecticide, Acaricide	✔	31-07-2026	0.02	0.02	0.02	0.02	8	link	link
MCPA and MCPB	94-74-6	Herbicide	✔	15-08-2026	0.1	0.1	0.1	0.1	0.05	link	link
Mepiquat	15302-91-7	Plant growth regulator, Herbicide	✔	29-02-2024	40	15	0.05	40	0.02	link	link
Paraquat	4685-14-7	Herbicide	✖		0.02	0.02	0.02	0.02	0.02	link	link
Pirimiphos-methyl	29232-93-7	Insecticide, Acaricide	✔	15-06-2025	0.5	0.5	0.5	0.5	0.5	link	link
Procymidone	32809-16-8	Fungicide	✖		0.02	0.02	0.02	0.02	0.01	link	link
Propargite	2312-35-8	Acaricide	✖		0.02	0.02	0.02	0.02	0.01	link	link
Tebuconazole	107534-96-3	Fungicide, Plant growth regulator	✔	15-08-2026	0.02	0.5	0.15	0.6	0.02	link	link
Tetramethrin	7696-12-0	Insecticide	✖		0.01	0.01	0.01	0.01	0.01	link	
Thiacloprid	111988-49-9	Insecticide, Molluscicide	✖		0.02	0.6	0.02	0.02	0.01	link	link
Thiamethoxam*	153719-23-4	Insecticide	✖		0.02 (0.01*)	0.02 (0.01*)	0.04 (0.01*)	0.02 (0.01*)	0.05 (0.01*)	link	link

1) Dithiocarbamates expressed as CS2, including maneb, mancozeb, metiram, propineb, thiram

* = new MRLs are set in new Regulations, not yet applicable

✔ Approved ✖ Not approved

General guidelines for farmers

(Good Agricultural Practices)

- Make sure that the pesticide supplier is known. Avoid buying pesticides from unknown sources. The trade of counterfeit and illegal pesticides is growing. Such pesticides may contain banned substances and may be a danger to human and/or animal health and/or the environment. As a result, treated crops may be unmarketable, as unfit for human and/or animal consumption.
- Make sure that the pre-harvest intervals of all chemicals applied to the crop are respected. Otherwise, residues from those chemicals will remain in the oilseeds and it will not be possible to sell them, since these oilseeds will not be compliant with EU Regulation No. 396/2005.
- Make sure that, when spraying pesticides on the crops, recommended doses are followed. Spraying higher doses than recommended will lead to high levels of residues in the harvested oilseeds and then to the non-compliance with EU Maximum Residue Levels (MRLs). Not respecting recommended doses may also endanger workers' health or safety.
- When planting different kinds of crops on neighbouring fields, make sure the spraying device is tuned correctly to minimise drift of the pesticide to neighbouring crops. Do not spray pesticides during strong wind.
- Make sure that transport vehicles are completely clean when transporting the oilseeds, so that these are not contaminated with chemicals or other toxic substances that might have been transported before in the same vehicle.
- Storage of chemicals on the farm should be separated from the grains and oilseeds storage. Pesticides should be completely sealed to avoid leakage.
- Make sure that any kind of fertilisers, lubricants or electric vehicle fuel and lubricant are separated from the grains and oilseeds storage.
- Make sure that seeds aimed to be used for sowing, are separated from those aimed to be sold, avoiding any contamination with pesticides.
- Make sure that drying processes to dry oilseeds/nuts prior to oil extraction are under control. Drying processes may lead to the formation of biphenyl, anthraquinone, and 2-phenyl-phenol in vegetable oils. Despite not being used as pesticides, their presence is regulated under EU Regulation No. 396/2005. In general, indirect drying results in lower contents of these substances compared to direct drying. Changes in the drying techniques/equipment/fuel/process lay-out may also help to reduce the formation of these substances during drying.
- Make sure that the use of fertilisers or biostimulants does not lead to non-compliance with the EU MRLs (e.g. use of phosphonate-containing products may lead to exceedance of the MRL for fosetyl-Al).

General guidelines for storage managers

- Make sure the silos are intact so no stored grains or oilseeds can be contaminated.
- Clean the internal walls of the silo each time a different oilseed or grain is going to be stored in order to avoid comingling. Cleaning of internal walls of a silo is crucial in case the last product stored has been grain or oilseed that has been treated with a pesticide. Clean transport lines (redlers, belts etc.) whenever there is a change in the commodity, especially when potatoes, oilseeds or grains treated with a pesticide have passed through it.
- Storage pesticides are only allowed for grains treatment and not for oilseeds, with the exemption of phosphine. Insects rarely target oilseeds, so preventive measures may be assessed case-by-case depending on the situation.
- In case a pesticide treatment is necessary for stored grains, there should be a register of treatments in place. This ensures that any possible problem during the operation can be traced throughout the supply chain, from farmer to consumer. This register should include:
  - date;
  - time of spraying;
  - type of active substances;
  - dosage rate;
  - redlers cleaning after treatment;
  - signature of operator and explanation on type of cleaning.
- In the event of having spraying equipment for cereal protection in the storage facilities, please make sure that before oilseeds are transported through the redlers, the following items must be checked systematically:
  - previous grains have been removed from belts/redlers;
  - redlers/conveyor belts have been cleaned and any residue of pesticide has been removed;
  - the spraying equipment is switched off;
  - the nozzles do not leak over the belts/redlers.

Documented evidence of these checks should be available.

What else can be done?

Only use phosphine during storage, a low-residual pesticide which is also approved for grains, but also for sunflower and other oilseeds.

Phosphine and phosphide salts (sum of phosphine and phosphine generators (relevant phosphide salts), determined and expressed as phosphine)	EU MRL (mg/kg)*
Linseeds	0.05
Maize	0.7
Rapeseeds	0.05
Soyabeans	0.05
Sunflower seeds	0.05

* EU Regulation may be subject to changes, MRLs are valid at the moment of publication. For most up-to-date information see: EU Pesticides Database (europa.eu)

Prudent use of pesticides is required to avoid commercial problems that affect everyone. Let's jointly take care of our production and commerce by applying Good Agricultural Practices and proper pesticide handling. Please contact your local association for more information on the Good Agricultural Practices that apply to your region.

This brochure is the result of a concerted action of oilseed trading and processing companies along with storekeepers, coordinated by MVO - The Netherlands Oils and Fats Industry together with FEDIOL - The EU vegetable oil and proteinmeal industry association, COCERAL - The European association of cereals, rice, feedstuffs, oilseeds, olive oil, and fats and agrosupply trade, Het Comité - The Royal Dutch Grain and Feed Trade Association and UNISTOCK - The European association of professional portside storekeepers for agribulk commodities.