



Pesticide management

Crucial for farmers and storage managers

Several non-EU countries are big net exporters of groundnuts. Significant volumes of these oilseeds are destined for European Union (EU) countries, in particular the Netherlands, Spain, Poland and Germany. It is crucial that groundnuts 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 groundnuts, 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 hazards 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. 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 Pesticides Database](#).

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.

Id	Pesticide residue	Max*	Id	Pesticide residue	Max*	Id	Pesticide residue	Max*
1	1,1-dichloro-2,2-bis(4-ethylphenyl)ethane (F)	0.01*	2333	Benzalkonium chloride (mixture of alkylbenzyltrimethylammonium chlorides with alkyl chain lengths of C8, C10, C12, C14, C16 and C18)	0.1	59	Cinidon-ethyl (sum of cinidon ethyl and its E-isomer)	0.05*
2	1,2-dibromoethane (ethylene dibromide) (F)	0.02*	2415	Benzovindiflupyr	0.04	259	Clethodim (sum of Sethoxydim and Clethodim including degradation products calculated as Sethoxydim)	5.0
3	1,2-dichloroethane (ethylene dichloride) (F)	0.02*	2536	Bicyclopyrone (sum of bicyclopyrone and its structurally related metabolites determined as the sum of the common moieties 2-(2-methoxyethoxymethyl)-6-(trifluoromethyl)pyridine-3-carboxylic acid (SYN503780) and (2-(2-hydroxyethoxymethyl)-6-(trifluoromethyl)pyridine-3-carboxylic acid (CSCD686480), expressed as bicyclopyrone)		260	Clodinafop and its S-isomers and their salts, expressed as clodinafop (F)	0.05*
228	1,3-Dichloropropene	0.01*	27	Bifenazate (sum of bifenazate plus bifenazate-diazene expressed as bifenazate) (F)	0.01*	60	Clofentezine (R)	0.05*
2830	1,4-dimethylnaphthalene (R),(F)	0.05	243	Bifenox (F)	0.01*	774	Clomazone	0.02*
229	1-Naphthylacetamide and 1-naphthylacetic acid (sum of 1-naphthylacetamide and 1-naphthylacetic acid and its salts, expressed as 1-naphthylacetic acid)	0.06*	28	Bifenthrin (sum of isomers) (F)	0.02*	261	Clopyralid	0.5
3030	1-methyl-3-(trifluoromethyl)-1H-pyrazole-4-carboxamide (PAM)		2148	Biphenyl	0.01*	775	Clothianidin	0.02*
3030	1-methyl-3-(trifluoromethyl)-1H-pyrazole-4-carboxamide (PAM)		2517	Bispyribac (sum of bispyribac, its salts and its esters, expressed as bispyribac)	0.01*	262	Copper compounds (Copper)	30.0
4	1-methylcyclopropene	0.02*	30	Bitertanol (sum of isomers) (F)	0.02*	2465	Coumaphos	
6	2,4,5-T (sum of 2,4,5-T, its salts and esters, expressed as 2,4,5-T) (F)	0.02*	2693	Bixafen (R),(F)	0.01*	263	Cyanamide including salts expressed as cyanamide	0.01*
7	2,4-D (sum of 2,4-D, its salts, its esters and its conjugates, expressed as 2,4-D)	0.05*	2344	Bone oil	0.01*	2351	Cytraniliprole	0.01*
5	2,4-DB (sum of 2,4-DB, its salts, its esters and its conjugates, expressed as 2,4-DB) (R)	0.05*	244	Boscalid (R),(F)	1.0	61	Cyazofamid	0.02*
2530	2,5-dichlorobenzoic acid methylester (sum of 2,5-dichlorobenzoic acid and its ester expressed as 2,5-dichlorobenzoic acid methylester)	0.01*	2510	Bromadiolone	0.01*	62	Cyclanilide (F)	0.05*
2397	2-amino-4-methoxy-6-(trifluoromethyl)-1,3,5-triazine (AMTT), resulting from the use of tritosulfuron (F)	0.01*	245	Bromide ion	50.0	2500	Cyclaniliprole	0.01*
2343	2-naphthoxyacetic acid	0.02*	31	Bromophos-ethyl (F)	0.02*	3050	Cycloxydim including degradation and reaction products which can be determined as 3-(3-thianyl)glutaric acid S-dioxide (BH 517-TGSO2) and/or 3-hydroxy-3-(3-thianyl)glutaric acid S-dioxide (BH 517-5-OH-TGSO2) or derivatives thereof, calculated in total as cycloxydim	0.09*
2058	2-phenylphenol (sum of 2-phenylphenol and its conjugates, expressed as 2-phenylphenol) (R),(F)	0.01*	32	Bromopropylate (F)	0.01*	776	Cyflufenamid (sum of cyflufenamid (Z-isomer) and its E-isomer, expressed as cyflufenamid) (R),(A)	0.01*
2418	3-decen-2-one	0.1*	33	Bromoxynil and its salts, expressed as bromoxynil	0.01*	3031	Cyflumetofen (sum of isomers)	0.01*
2605	6-Benzyladenine	0.01*	246	Bromuconazole (sum of diastereoisomers) (F)	0.01*	63	Cyfluthrin (cyfluthrin including other mixtures of constituent isomers (sum of isomers)) (F)	0.01*
2318	8-hydroxyquinoline (sum of 8-hydroxyquinoline and its salts, expressed as 8-hydroxyquinoline)	0.02*	2631	Bupirimate (R),(F),(A)	0.01*	64	Cyhalofop-butyl	0.05*
8	Abamectin (sum of avermectin B1a, avermectin B1b and delta-8,9 isomer of avermectin B1a, expressed as avermectin B1a) (R),(F)	0.01*	248	Buprofezin (F)	0.01*	265	Cymoxanil	0.01*
9	Acephate	0.02*	249	Butralin	0.02*	65	Cypermethrin (cypermethrin including other mixtures of constituent isomers (sum of isomers)) (F)	0.1
2930	Acequinocyl (F)	0.01*	250	Butylate	0.02*	266	Cyproconazole (F)	0.05*
10	Acetamiprid (R)	0.01*	2275	Cadusafos	0.01*	267	Cyprodinil (R),(F)	0.02*
232	Acetochlor	0.01*	34	Camphchlor (Toxaphene) (R),(F)	0.02*	66	Cyromazine	0.01*
11	Acibenzolar-S-methyl (sum of acibenzolar-S-methyl and acibenzolar acid (free and conjugated), expressed as acibenzolar-S-methyl)	0.01*	35	Captafol (F)	0.05*	68	DDT (sum of p,p'-DDT, o,p'-DDT, p,p'-DDE and p,p'-TDE (DDD) expressed as DDT) (F)	0.05*
233	Aclonifen	0.01*	36	Captan (Sum of captan and THPI, expressed as captan) (R)	0.07*	84	DNOC	0.02*
234	Acrinathrin (F)	0.01*	37	Carbaryl (F)	0.05*	268	Dalapon	0.1
235	Alachlor	0.02*	38	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim) (R)	0.1*	67	Daminozide (sum of daminozide and 1,1-dimethylhydrazine (UDHM), expressed as daminozide)	0.1*
12	Aldicarb (sum of aldicarb, its sulfoxide and its sulfone, expressed as aldicarb)	0.05*	251	Carbetamide (sum of carbetamide and its S isomer)	0.01*	69	Deltamethrin (cis-deltamethrin) (F)	0.01*
13	Aldrin and Dieldrin (Aldrin and dieldrin combined expressed as dieldrin) (F)	0.02	39	Carbofuran (sum of carbofuran (including any carbofuran generated from carboxulfan, benfuracarb or furathiocarb) and 3-OH carbofuran expressed as carbofuran) (R)	0.02*	2518	Denatonium benzoate (sum of denatonium and its salts, expressed as denatonium benzoate)	0.01*
2694	Ametoctradin (R),(F)	0.01*	2346	Carbon monoxide	0.01*	70	Desmedipham	0.01*
236	Amidosulfuron (R),(A)	0.01*	41	Carbon tetrachloride		71	Di-allate (sum of isomers) (F)	0.02*
2671	Aminopyralid (sum of aminopyralid, its salts and its conjugates, expressed as aminopyralid) (R)	0.05*	252	Carboxin (carboxin plus its metabolites carboxin sulfoxide and oxycarboxin (carboxin sulfone), expressed as carboxin)	0.05*	72	Diazinon (F)	0.02*
2080	Amisulbrom	0.01*	2633	Carfentrazone-ethyl (sum of carfentrazone-ethyl and carfentrazone, expressed as carfentrazone-ethyl) (R)	0.05*	270	Dicamba	0.05*
14	Amitraz (amitraz including the metabolites containing the 2,4-dimethylaniline moiety expressed as amitraz)	0.05*	44	Cartap		271	Dichlobenil	0.01*
15	Amitrole	0.02*	2670	Chlorantraniliprole (F)	0.06	272	Dichlorprop (Sum of dichlorprop (including dichlorprop-P), its salts, esters and conjugates, expressed as dichlorprop) (R)	0.02*
237	Anilazine	0.02*	2378	Chlorate (A)	0.05	73	Dichlorvos	0.01*
2330	Anthraquinone (F)	0.02*	45	Chlorbenseide (F)	0.01*	274	Dicloran	0.01*
16	Aramite (F)	0.01*	46	Chlorbufam (F)	0.02*	74	Dicofol (sum of p, p' and o,p' isomers) (F)	0.05*
238	Asulam	0.1*	47	Chlordane (sum of cis- and trans-chlordane) (R),(F)	0.02*	2332	Didecyltrimethylammonium chloride (mixture of alkyl-quaternary ammonium salts with alkyl chain lengths of C8, C10 and C12)	0.05
17	Atrazine (F)	0.05*	254	Chlordecone (F)	0.02	275	Diethofencarb	0.01*
239	Azadirachtin	0.01*	48	Chlorfenapyr	0.02*	3371	Difenacoum	0.01*
18	Azimsulfuron	0.01*	49	Chlorfenoson (F)	0.01*	276	Difenoconazole	0.05*
19	Azinphos-ethyl (F)	0.02*	50	Chlorfenvinphos (F)	0.02*	277	Diflubenzuron (R),(F)	0.01*
20	Azinphos-methyl (F)	0.01*	253	Chloridazon (sum of chloridazon and chloridazon-desphenyl, expressed as chloridazon) (R)	0.04*	278	Diffluencian (F)	0.01*
21	Azocyclotin and Cyhexatin (sum of azocyclotin and cyhexatin expressed as cyhexatin)	0.02*	51	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	0.01*	2383	Diffuoroacetic acid (DFA)	0.06
22	Azoxystrobin	0.2	52	Chlorobenzilate (F)	0.02*	279	Dimethachlor	0.01*
23	Barban (F)	0.02*	772	Chloropicrin	0.01*	75	Dimethenamid including other mixtures of constituent isomers including dimethenamid-P (sum of isomers)	0.01*
240	Beflubutamid	0.02*	53	Chlorothalonil (R)	0.01*	280	Dimethipin	0.1*
24	Benalaxyl including other mixtures of constituent isomers including benalaxyl-M (sum of isomers)	0.01*	258	Chlorotoluron	0.02*	76	Dimethoate	0.01*
241	Benfluralin (F)	0.02*	54	Chloroxuron (F)	0.02*	281	Dimethomorph (sum of isomers)	0.02*
2488	Bensulfuron-methyl	0.01*	55	Chlorpropham (R),(F)	0.01*	282	Dimoxystrobin (R),(A)	0.01*
26	Bentazone (Sum of bentazone, its salts and 6-hydroxy (free and conjugated) and 8-hydroxy bentazone (free and conjugated), expressed as bentazone) (R)	0.05	56	Chlorpyrifos (F)	0.01*	283	Diniconazole (sum of isomers)	0.02*
242	Benthiavalicarb (Benthiavalicarb-isopropyl(KIF-230 R-L) and its enantiomer (KIF-230 S-D) and its diastereomers(KIF-230 S-L and KIF-230 R-D), expressed as benthiavalicarb-isopropyl) (A)	0.02*	57	Chlorpyrifos-methyl (R),(F)	0.01*	284	Dinocap (sum of dinocap isomers and their corresponding phenols expressed as dinocap) (Where only meptyldinocap or its corresponding phenol are detected but none of the other components constituting dinocap (including their corresponding phenols), the MRLs and residue definition of meptyldinocap are to be applied.) (F)	0.05*
			255	Chlorsulfuron	0.01*			
			256	Chlorthal-dimethyl	0.02*			
			257	Chlorthiamid	0.02*			
			58	Chlozolinate (F)	0.02*			
			773	Chromafenozide	0.01*	77	Dinoseb (sum of dinoseb, its salts, dinoseb-acetate and binapacryl, expressed as dinoseb)	0.05*

Pesticide residues and maximum residue levels (mg/kg)

(* Indicates lower limit of analytical determination)

Id	Pesticide residue	Max*	Id	Pesticide residue	Max*	Id	Pesticide residue	Max*
2322	Dinotefuran		308	Flufenoxuron (F)	0.01*	2463	Isotetamid	0.01*
78	Dinoterb (sum of dinoterb, its salts and esters, expressed as dinoterb)	0.02*	309	Flufenzin	0.05*	2285	Isoprothiolane	0.01*
79	Dioxathion (sum of isomers) (F)	0.02*	2466	Flumequine		137	Isoproturon	0.01*
80	Diphenylamine	0.05*	2380	Flumetralin (F)	0.01*	2168	Isopyrazam (F)	0.01*
81	Diquat	0.01*	111	Flumioxazine	0.05*	327	Isoxaben	0.01*
82	Disulfoton (sum of disulfoton, disulfoton sulfoxide and disulfoton sulfone expressed as disulfoton) (F)	0.02*	780	Flumetazone	0.01*	138	Isoxaflutole (sum of isoxaflutole and its diketonitrile-metabolite, expressed as isoxaflutole)	0.02*
285	Dithianon	0.02	781	Fluopicolide	0.01*	139	Kresoxim-methyl (R)	0.01*
83	Dithiocarbamates (dithiocarbamates expressed as CS ₂ , including maneb, mancozeb, metiram, propineb, thiram and ziram)	0.1*	2276	Fluopyram (R)	0.02	789	Lactofen	0.02*
286	Diuron	0.01*	782	Fluoride ion	2.0	140	Lambda-cyhalothrin (includes gamma-cyhalothrin) (sum of R,S and S,R isomers) (F)	0.2
2345	Dodemorph	0.01*	782	Fluoride ion	2.0	328	Lenacil	0.1*
287	Dodine	0.01*	783	Fluoroglycofene	0.01*	141	Lindane (Gamma-isomer of hexachlorocyclohexane (HCH)) (F)	0.01*
289	EPTC (ethyl dipropylthiocarbamate)	0.02*	310	Fluoxastrobin (sum of fluoxastrobin and its Z-isomer) (R)	0.01*	142	Linuron	0.01*
3010	Emamectin B1a and its salts, expressed as emamectin B1a (free base) (R),(F)	0.005*	2381	Flupyradifurone	0.04	329	Lufenuron (any ratio of constituent isomers) (F)	0.01*
85	Endosulfan (sum of alpha- and beta-isomers and endosulfan-sulphate expressed as endosulfan) (F)	0.1*	112	Flupyradifurone-methyl	0.02*	145	MCPA and MCPB (MCPA, MCPB including their salts, esters and conjugates expressed as MCPA) (R),(F)	0.1*
86	Endrin (F)	0.01*	311	Fluquinconazole (F)	0.01*	143	Malathion (sum of malathion and malaaxon expressed as malathion)	0.02*
288	Epoxiconazole (F)	0.01*	312	Flurochloridone (sum of cis- and trans- isomers) (F)	0.01*	144	Maleic hydrazide	0.5*
290	Ethalfuralin	0.01*	113	Fluroxypyr (sum of fluroxypyr, its salts, its esters, and its conjugates, expressed as fluroxypyr) (R),(A)	0.01*	2382	Mandestrobin	0.01*
2228	Ethamsulfuron-methyl	0.02*	784	Flurprimidole	0.02*	790	Mandipropamid (any ratio of constituent isomers)	0.01*
87	Ethephon	0.1*	114	Flurtamone	0.01*	146	Mecarbam	0.01*
88	Ethion	0.02*	313	Flusilazole (R),(F)	0.01*	147	Mecoprop (sum of mecoprop-p and mecoprop expressed as mecoprop)	0.05*
2632	Ethirimol (R),(F),(A)	0.01*	2539	Flutianil	0.01*	2542	Mefentrifluconazole	0.01*
89	Ethofumesate (Sum of ethofumesate, 2-keto-ethofumesate, open-ring-2-keto-ethofumesate and its conjugate, expressed as ethofumesate)	0.03*	314	Flutolanil (R)	0.02	148	Mepanipyrim	0.02*
292	Ethoprophos	0.01*	315	Flutrialol	0.15	330	Mepiquat (sum of mepiquat and its salts, expressed as mepiquat chloride)	0.05*
293	Ethoxyquin (F)	0.1*	2655	Fluvalinate (sum of isomers) resulting from the use of tau-fluvalinate (F)	0.01*	791	Mepropril	0.02*
90	Ethoxysulfuron	0.02*	2268	Fluxapyroxad (F)	0.01*	792	Meptyldinocap (sum of 2,4 DNOP and 2,4 DNOP expressed as meptyldinocap)	0.01*
91	Ethylene oxide (sum of ethylene oxide and 2-chloro-ethanol expressed as ethylene oxide) (F)	0.05*	115	Folpet (sum of folpet and phthalimide, expressed as folpet) (R)	0.07*	149	Mercury compounds (sum of mercury compounds expressed as mercury)	0.02
294	Etofenprox (F)	0.01*	785	Fomesafen	0.02*	150	Mesosulfuron-methyl	0.02*
92	Etoxazole	0.01*	116	Foramsulfuron	0.02*	151	Mesotrione	0.01*
295	Etridiazole	0.01*	303	Forchlorfenuron	0.02*	793	Metaflumizone (sum of E- and Z- isomers)	0.02*
93	Famoxadone (F)	0.01*	316	Formetanate: Sum of formetanate and its salts expressed as formetanate (hydrochloride)	0.01*	3370	Metaxalyl and metaxalyl-M (metaxalyl including other mixtures of constituent isomers including metaxalyl-M (sum of isomers)) (R)	0.01*
94	Fenamidone	0.01*	117	Formothion	0.02*	331	Metalddehyde	0.05*
95	Fenamiphos (sum of fenamiphos and its sulphoxide and sulphone expressed as fenamiphos)	0.01*	3650	Fosetyl		333	Metamitron	0.01*
96	Fenarimol	0.02*	118	Fosthiazate	0.05*	334	Metazachlor (Sum of metabolites 479M04, 479M08 and 479M16, expressed as metazachlor) (R)	0.02*
2692	Fenazaquin (F)	0.01*	318	Fuberidazole	0.01*	335	Metconazole (sum of isomers) (F)	0.05*
297	Fenbuconazole (sum of constituent enantiomers)	0.1	786	Furfural	1.0	336	Methabenzthiazuron	0.02*
97	Fenbutatin oxide (F)	0.02*	320	Glufosinate (sum of glufosinate isomers, its salts and its metabolites 3-[hydroxy(methyl)phosphinoyl] propionic acid (MPP) and N-acetyl-glufosinate (NAG), expressed as glufosinate)	0.03*	153	Methacrifos	0.02*
98	Fenchlorphos (sum of fenchlorphos and fenchlorphos oxon expressed as fenchlorphos)	0.01*	120	Glyphosate	0.1*	154	Methamidophos	0.02*
99	Fenhexamid (F)	0.02*	321	Guazatine (guazatine acetate, sum of components)	0.05*	155	Methidathion	0.05*
100	Fenitrothion	0.02*	2371	Halaxifen-methyl (sum of halaxifen-methyl and X11393729 (halaxifen), expressed as halaxifen-methyl)	0.05*	337	Methiocarb (sum of methiocarb and methiocarb sulfoxide and sulfone, expressed as methiocarb)	0.03*
298	Fenoxaprop-P	0.1	787	Halosulfuron methyl	0.01*	157	Methomyl	0.01*
299	Fenoxycarb	0.01*	322	Haloxifop (Sum of haloxifop, its esters, salts and conjugates expressed as haloxifop (sum of the R- and S- isomers at any ratio)) (R),(F)	0.01*	338	Methoprene	0.05*
2513	Fenpicoxamid (R),(F)	0.01*	121	Heptachlor (sum of heptachlor and heptachlor epoxide expressed as heptachlor) (F)	0.01*	158	Methoxychlor (F)	0.01*
777	Fenpropathrin	0.01*	122	Hexachlorobenzene (F)	0.02*	159	Methoxyfenozide (F)	0.03
300	Fenpropidin (sum of fenpropidin and its salts, expressed as fenpropidin) (R),(A)	0.01*	123	Hexachlorocyclohexane (HCH), alpha-isomer (F)	0.01*	2711	Methylisothiocyanate (resulting from the use of dazomet or metam)	0.01*
101	Fenpropimorph (sum of isomers) (R),(F)	0.01*	124	Hexachlorocyclohexane (HCH), beta-isomer (F)	0.01*	156	Metolachlor and S-metolachlor (metolachlor including other mixtures of constituent isomers including S-metolachlor (sum of isomers))	0.05*
2281	Fenpyrazamine (F)	0.01*	126	Hexaconazole	0.02*	339	Metosulam	0.01*
301	Fenpyroximate (R),(F),(A)	0.01*	2712	Hexythiazox (any ratio of constituent isomers) (F)	0.01*	340	Metrafenone (F)	0.01*
102	Fenthion (fenthion and its oxygen analogue, their sulfoxides and sulfone expressed as parent) (F)	0.02*	127	Hydrogen cyanide (cyanides expressed as hydrogen cyanide)		341	Metribuzin	0.1*
103	Fentin (fentin including its salts, expressed as triphenyltin cation) (F)	0.05*	324	Hymexazol	0.05*	160	Metsulfuron-methyl	0.01*
105	Fenvalerate (any ratio of constituent isomers (RR, SS, RS & SR) including esfenvalerate) (R),(F)	0.05*	129	Imazalil (any ratio of constituent isomers) (R)	0.01*	161	Mevinphos (sum of E- and Z-isomers)	0.01*
302	Fipronil (sum fipronil + sulfone metabolite (MB46136) expressed as fipronil) (F)	0.005*	130	Imazamox (Sum of imazamox and its salts, expressed as imazamox)	0.05*	162	Milbemectin (sum of milbemycin A4 and milbemycin A3, expressed as milbemectin)	0.02*
107	Flazasulfuron	0.01*	2277	Imazapic	0.05*	163	Molinate	0.02*
778	Flonicamid (sum of flonicamid, TFNA and TFNG expressed as flonicamid) (R)	0.06*	2349	Imazapyr		164	Monocrotophos	0.02*
108	Florasulam	0.01*	325	Imazaquin	0.01*	165	Monolinuron	0.02*
2545	Florpyrauxifen-benzyl	0.01*	131	Imazosulfuron	0.02*	342	Monuron	0.02*
304	Fluazifop-P (sum of all the constituent isomers of fluazifop, its esters and its conjugates, expressed as fluazifop)	0.01*	326	Imidacloprid	0.5	166	Myclobutanil (sum of constituent isomers) (R)	0.01*
305	Fluazinam (F)	0.01*	2352	Indolylacetic acid	0.1*	343	Napropamide (sum of isomers)	0.01*
779	Flubendiamide (F)	0.01*	2353	Indolylbutyric acid	0.1*	344	Nicosulfuron	0.02*
306	Flucycloxuron (F)	0.02*	132	Indoxacarb (sum of indoxacarb and its R enantiomer) (F)	0.01*	2099	Nicotine	0.02*
109	Flucythrinate (flucythrinate including other mixtures of constituent isomers (sum of isomers)) (F)	0.02*	133	Iodosulfuron-methyl (sum of iodosulfuron-methyl and its salts, expressed as iodosulfuron-methyl)	0.02*	167	Nitrofen (F)	0.02*
307	Fludioxonil (R),(F)	0.01*	134	Ioxynil (sum of ioxynil and its salts, expressed as ioxynil)	0.01*	3130	Novaluron (sum of constituent isomers) (F)	0.01*
110	Flufenacet (sum of all compounds containing the N fluorophenyl-N-isopropyl moiety expressed as flufenacet)	0.05*	788	Iponazole (F)	0.01*	2470	Omethoate	0.01*
			135	Iprodione (R)	0.01*	794	Orthosulfamuron	0.01*
			136	Iprovalicarb	0.02*	795	Oryzalin (F)	0.01*

Pesticide residues and maximum residue levels (mg/kg)

(* Indicates lower limit of analytical determination)

Id	Pesticide residue	Max*	Id	Pesticide residue	Max*	Id	Pesticide residue	Max*
168	Oxadiazyl	0.01*	802	Pyrasulfotole	0.01*	388	Thiamethoxam	0.02*
346	Oxadiazon	0.01*	197	Pyrazophos (F)	0.02*	2598	Thiocarbazono-methyl	0.01*
796	Oxadixyl	0.02*	366	Pyrethrins	3.0	212	Thifensulfuron-methyl	0.01*
169	Oxamyl	0.01*	367	Pyridaben (F)	0.01*	389	Thiobencarb (4-chlorobenzyl methyl sulfone) (A)	0.02*
170	Oxasulfuron	0.01*	2036	Pyridalyl	0.01*	2419	Thiodicarb	0.01*
2476	Oxathiapiprolin	0.01*	198	Pyridate (sum of pyridate, its hydrolysis product CL 9673 (6-chloro-4-hydroxy-3-phenylpyridazin) and hydrolysable conjugates of CL 9673 expressed as pyridate)	0.05*	213	Thiophanate-methyl (R)	0.1*
347	Oxycarboxin	0.02*	199	Pyrimethanil (R)	0.02*	214	Thiram (expressed as thiram)	0.05*
171	Oxydemeton-methyl (sum of oxydemeton-methyl and demeton-S-methylsulfone expressed as oxydemeton-methyl)	0.02*	2321	Pyriofenone	0.01*	390	Tolclofos-methyl (F)	0.01*
2870	Oxyfluorfen (F)	0.01*	368	Pyriproxyfen (F)	0.01*	215	Tolyfluanid (Sum of tolyfluanid and dimethylaminosulfotoluidide expressed as tolyfluanid) (R),(F)	0.02*
349	Paclobutrazol (sum of constituent isomers)	0.01*	803	Pyroxosulam	0.01*	810	Topramezone (BAS 670H)	0.005*
2347	Paraffin oil (CAS 64742-54-7)	0.01*	200	Quinalphos (F)	0.02*	811	Tralkoxydim (sum of the constituent isomers of tralkoxydim)	0.01*
172	Paraquat	0.02*	804	Quinclorac	0.02*	391	Tri-allate	0.1*
173	Parathion (F)	0.05*	2790	Quinmerac (sum of quinmerac and its metabolites BH 518-2 and BH 518-4 expressed as quinmerac) (R)	0.15*	2416	Triadimefon (F)	0.01*
174	Parathion-methyl (sum of Parathion-methyl and paraoxon-methyl expressed as Parathion-methyl)	0.02*	2320	Quinoclamine	0.02*	216	Triadimenol (any ratio of constituent isomers)	0.01*
175	Penconazole (sum of constituent isomers) (F)	0.01*	201	Quinoxifen (F)	0.05*	217	Triasulfuron	0.01*
2653	Pencycuron (sum of pencycuron and pencycuron-PB-amine, expressed as pencycuron) (R),(F),(A)	0.02*	202	Quintozene (sum of quintozene and pentachloro-aniline expressed as quintozene) (F)	0.05*	218	Triazophos (F)	0.01*
176	Pendimethalin (F)	0.05*	370	Quizalofop (sum of quizalofop, its salts, its esters (including propaquizalofop) and its conjugates, expressed as quizalofop (any ratio of constituent isomers))	0.01*	2550	Triazoxide	0.005*
2594	Penflufen (sum of isomers) (F)	0.01*	3830	Repellants: Tall oil	0.01*	219	Tribenuron-methyl	0.01*
797	Penoxsulam	0.01*	203	Resmethrin (resmethrin including other mixtures of constituent isomers (sum of isomers)) (F)	0.02*	392	Trichlorfon	0.02*
3111	Penthiopyrad (F)	0.05	204	Rimsulfuron	0.02*	393	Triclopyr	0.01*
467	Permethrin (sum of isomers) (F)	0.05*	371	Rotenone	0.02*	394	Tricyclazole	0.01*
177	Pethoxamid	0.01*	2296	Saflufenacil (sum of saflufenacil, M800H11 and M800H35, expressed as saflufenacil) (R)	0.03*	220	Tridemorph (F)	0.02*
2348	Petroleum oils (CAS 92062-35-6)	0.01*	2654	Sedaxane (sum of isomers)	0.01*	3390	Trifloxystrobin (R),(F)	0.02
178	Phenmedipham	0.01*	205	Silthiofam	0.02*	2537	Triflumazopyrim	
351	Phenothrin (phenothrin including other mixtures of constituent isomers (sum of isomers)) (F)	0.05*	372	Simazine	0.02*	395	Triflumizole: Triflumizole and metabolite FM-6-1(N-(4-chloro-2-trifluoromethylphenyl)-n-propoxyacetamide), expressed as Triflumizole (R),(F)	0.02*
798	Phenthoate		2551	Sintofen	0.01*	396	Triflumuron (F)	0.01*
179	Phorate (sum of phorate, its oxygen analogue and their sulfones expressed as phorate)	0.02*	2417	Sodium 5-nitroguaiacolate, sodium o-nitrophenolate and sodium p-nitrophenolate (Sum of sodium 5-nitroguaiacolate, sodium o-nitrophenolate and sodium p-nitrophenolate, expressed as sodium 5-nitroguaiacolate)	0.03*	397	Trifluralin	0.01*
352	Phosalone	0.02*	3051	Sodium aluminium silicate	0.01*	812	Triflurosulfuron (6-(2,2,2-trifluoroethoxy)-1,3,5-triazine-2,4-diamine (IN-M7222)) (A)	0.02*
3190	Phosmet	0.01*	3290	Sodium hypochlorite	0.01*	222	Triforine	0.02*
180	Phosphamidon	0.01*	2691	Spinetoram (sum of spinetoram-J and spinetoram-L) (F),(A)	0.02*	223	Trimethyl-sulfonium cation, resulting from the use of glyphosate (F)	0.05*
354	Phosphane and phosphide salts (sum of phosphane and phosphane generators (relevant phosphide salts), determined and expressed as phosphane)	0.05	373	Spinosad (spinosad, sum of spinosyn A and spinosyn D) (F)	0.02*	398	Trinexapac (sum of trinexapac (acid) and its salts, expressed as trinexapac)	0.01*
3430	Phosphonic acid and its salts expressed as phosphonic acid (R)	3.0	374	Spirodiclofen (F)	0.02*	224	Triticonazole	0.02*
3430	Phosphonic acid and its salts expressed as phosphonic acid (R)	3.0	375	Spiromesifen	0.02*	813	Tritosulfuron	0.01*
355	Phoxim (F)	0.02*	2750	Spirotetramat and spirotetramat-enol (sum of), expressed as spirotetramat (R)	0.02*	2850	Valifenalate (R),(A)	0.01*
356	Picloram	0.01*	206	Spiroxamine (sum of isomers) (R),(A)	0.05*	225	Vinclozolin	0.02*
181	Picolinafen	0.01*	2467	Streptomycin		2319	Warfarin	0.01*
182	Picoxystrobin (F)	0.01*	376	Sulcotrione (R)	0.05*	3270	Z,Z,Z,Z-7,13,16,19-docosatetraen-1-yl isobutyrate (F)	0.01*
357	Pirimicarb (R)	0.02*	207	Sulfosulfuron	0.02*	3271	Z-13-hexadecen-11-yn-1-yl acetate (F)	0.01*
183	Pirimiphos-methyl (F)	0.5	2370	Sulfoxaflof (sum of isomers)	0.02*	226	Ziram	0.1*
3391	Potassium permanganate	0.01*	807	Sulfuryl fluoride	0.01*	227	Zoxamide	0.05*
184	Prochloraz (sum of prochloraz, BTS 44595 (M201-04) and BTS 44596 (M201-03), expressed as prochloraz) (F)	0.03*	2890	Sum of M4 and M6 (both free and conjugated), expressed as pinoxaden (R),(A)	0.03*			
185	Procymidone (R)	0.02*	273	Sum of diclofop-methyl, diclofop acid and its salts, expressed as diclofop-methyl (sum of isomers)	0.02*			
186	Profenofos (F)	0.02*	2970	Sum of metabromuron and 4-bromophenylurea, expressed as metabromuron	0.02*			
800	Profoxydim	0.01*	209	TEPP	0.01*			
187	Prohexadione (prohexadione (acid) and its salts expressed as prohexadione-calcium)	0.9	379	Tebuconazole (R)	0.15			
358	Propachlor: oxalinic derivate of propachlor, expressed as propachlor	0.05*	380	Tebufenozide (F)	0.01*			
359	Propamocarb (Sum of propamocarb and its salts, expressed as propamocarb) (R)	0.01*	381	Tebufenpyrad (F)	0.01*			
360	Propanil	0.05*	208	Tecnazene (F)	0.02*			
362	Propargite (F)	0.02*	382	Teflubenzuron (F)	0.01*			
468	Propham	0.02*	2690	Tefluthrin (tefluthrin including other mixtures of constituent isomers (sum of isomers)) (F)	0.01*			
188	Propiconazole (sum of isomers) (F)	0.01*	808	Tembotrione (Sum of parent tembotrione (AE 0172747) and its metabolite M5 (4,6-dihydroxy tembotrione), expressed as tembotrione) (R)	0.02*			
189	Propineb (expressed as propilendiamine)	0.2*	809	Tepaloxymid (sum of tepaloxymid and its metabolites that can be hydrolysed either to the moiety 3-(tetrahydro-pyran-4-yl)-glutaric acid or to the moiety 3-hydroxy-(tetrahydro-pyran-4-yl)-glutaric acid, expressed as tepaloxymid)	0.1*			
363	Propisochlor	0.01*	384	Terbufos	0.01*			
190	Propoxur	0.01*	385	Terbutylazine (R),(F)	0.01*			
191	Propoxycarbazone (propoxycarbazone, its salts and 2-hydroxypropoxycarbazone expressed as propoxycarbazone) (A)	0.05*	3131	Tetraconazole (sum of constituent isomers) (F)	0.01*			
192	Propyzamide (R),(F)	0.01*	387	Tetradifon	0.02*			
801	Proquinazid (R),(F)	0.02*	210	Thiabendazole (R)	0.02*			
364	Prosulfocarb	0.02*	211	Thiacloprid	0.02*			
193	Prosulfuron	0.02*						
365	Prothioconazole: prothioconazole-desthio (sum of isomers) (F)	0.02*						
194	Pymetrozine (R)	0.02*						
195	Pyraclostrobin (F)	0.04						
196	Pyraflufen-ethyl (Sum of pyraflufen-ethyl and pyraflufen, expressed as pyraflufen-ethyl)	0.02*						

Pesticide residues and maximum residue levels (mg/kg)

(* Indicates lower limit of analytical determination)

Most detected pesticides per origin

	Argentina	China	US	Egypt	Nicaragua	Paraguay
1	4-CPA	Acetochlor	Flutriafol	Carbaryl	Piperonyl butoxide	Glyphosate
2	Deltamethrin	Carbendazim	Piperonyl butoxide		Tebuconazole	Pirimiphos-methyl
3	Glyphosate	Chlorpyrifos			Cyproconazole	
4	Haloxifop	Haloxifop			Epoxiconazole	
5	Piperonyl butoxide	Imidacloprid				
6	Pirimiphos-methyl	Procymidone				
7	Triadimenol	Thiamethoxam				
8		Thiophanate-methyl				
9		Chlormequat				
10		Boscalid				

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 groundnuts 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 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-AI).

General guidelines for storage managers

- Make sure the silos are intact so no stored groundnuts can be contaminated.
- Clean the internal walls of the silo/storage each time a different groundnuts is going to be stored in order to avoid comingling.

Cleaning of internal walls of a silo/storage 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 groundnuts protection in the storage facilities, please make sure that before groundnuts 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.

Phosphide

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

Phosphine and phosphide salts (sum of phosphine and phosphine generators (relevant phosphide salts), determined and expressed as phosphine)	EU MRL (mg/kg)*
Groundnuts, 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](#).



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.