July 2017

SAN LISTS FOR PESTICIDE MANAGEMENT

Lists of Prohibited and Risk Mitigation Use Pesticides of the SAN 2017 Sustainable Agriculture Standard for farms' and producer groups' crop and cattle production.

SAN

Sustainable Agriculture Network

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The SAN List of Pesticides for Use with Risk Mitigation is a product of U.S.A. public funding and the intellectual property of the analysis process for this list resides within Oregon State University.

Contents

SAN Mission

To be a global network transforming agriculture into a sustainable activity.

SAN Vision

A world where agriculture contributes to the conservation of biodiversity and sustainable livelihoods.

SAN Pesticide Management Concept

The new SAN pesticide management concept of the 2017 SAN Sustainable Agriculture Standard is based on a stronger integrated pest management approach, the prohibition of 150 pesticides covered by the WHO/FAO framework of Highly Hazardous Pesticides, and specific risk management requirements for an additional set of 170 active ingredients. In consequence, 320 pesticide active ingredients will be regulated in the 2017 SAN standard.

The standard ensures pesticide risk reduction through several significant changes that raise the bar for Certification in general in health, environmental protection and sustainable crop production. The amount of pesticide applied by certified farms is expected to go down as a result of rigorous implementation of a new IPM criterion, backed up by training for auditors, and opportunities for better technical support. A state-of-the-science risk assessment process connects individual pesticides to tried-and-tested risk mitigation practices, including those that protect human bystanders, pollinators, vertebrate wildlife and aquatic life (see SAN List of Pesticides for Use with Risk Mitigation).

The most egregious health and environmental risks will be eliminated by adoption of an extended version of the WHO/FAO Highly Hazardous Pesticide classification to define SAN prohibited substances. The prohibition of pesticides is framed in the following criterion of the 2017 SAN standard:

- **Critical Criterion 3.4:** The use of substances included in the SAN List of Prohibited Pesticides is prohibited. Only pesticides that are legally registered in the production country are used. The use of agriculture mineral oils is only allowed, if these contain less than 3% of Dimethyl Sulfoxide (DMSO) residues.

SAN List of Prohibited Pesticides

The SAN List of Prohibited Pesticides consists of 150 SAN prohibited pesticides:

SAN Prohibited Pesticides are classified as Highly Hazardous Pesticides according to the definition of the FAO/WHO Panel of Experts on Pesticide Management (JMPM) consisting of 150 active ingredients. The JMPM, in their 2nd session in October 2008, recommended that highly hazardous pesticides should be defined as having one or more of the following characteristics:

a) Pesticide formulations that meet the criteria of classes Ia (extremely hazardous) or Ib (highly hazardous) of the WHO Recommended Classification of Pesticides by Hazard (indicated in the *WHO Ia* and *WHO Ib* columns);

b) Pesticide active ingredients and their formulations that meet the criteria of carcinogenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS) (indicated in the *GHS Cancer 1A 1B* column);

c) Pesticide active ingredients and their formulations that meet the criteria of mutagenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS) (indicated in the *GHS muta 1A 1B* column);

d) Pesticide active ingredients and their formulations that meet the criteria of reproductive toxicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (indicated in the *GHS repro 1A 1B* column);

e) Pesticide active ingredients listed by the Stockholm Convention in its Annexes A and B, and those meeting all the criteria in paragraph 1 of Annex D of the Convention (indicated in the *Stockholm Convention* column);

f) Pesticide active ingredients and formulations listed by the Rotterdam Convention in its Annex III (indicated in the *Rotterdam Convention* column);

g) Pesticides listed under the Montreal Protocol (indicated in the *Montreal Protocol* column);

h) Pesticide active ingredients and formulations that have shown a high incidence of severe or irreversible adverse effects on human health or the environment (indicated in the *Severe Effects* column): SAN has interpreted this WHO/FAO parameter with the reclassification of the current SAN prohibition of paraquat dichloride, as scientific evidence has revealed that this substance poses severe risks to human health. Atrazine has also been included in this list because of scientific evidence of water contamination. Additionally, the three neonicotinoids clothianodin, imidacloprid and thiamethoxam and the phenylpyrazole fipronil have been incorporated in the SAN Prohibited Pesticide List, because they significantly affect bee populations, other pollinators and birds, can persist for years in soils, and can leach into waterways and groundwater, where they have depleted insect abundance and diversity. SAN also included the three active ingredients aluminum phosphide, magnesium phosphide and phosphine in the list, as their use as a fumigant to control rodent populations in storage facilities can lead to death by inhalation.

The List of Prohibited Pesticides also includes a set of 25 active ingredients considered as obsolete[1] substances.

The SAN List of Prohibited Pesticides will be reviewed annually by SAN's technical committees. Pesticides added to the respective reference lists of the Montreal Protocol, Rotterdam Convention, Stockholm Convention, WHO (Class Ia or Ib), or GHS (carcinogenicity 1A/1B, mutagenicity 1A/1B, reproductive toxicity 1A/1B) will be included into a revised version of this list. New evidence of substances causing high incidence of severe or irreversible harm to human health or the environment will also be considered. Newly added substances will be subject to a phase-out period for certified farms or group administrators.

1 *Obsolete pesticides are pesticides that are unfit for further use or for re-conditioning. Obsolescence may arise because a product has been de-registered locally or banned internationally. (IUPAC International Union of Pure and Applied Chemistry)*

Many pesticides are considered highly hazardous, because of acute toxicity and chronic effects, even at low exposure levels. These pesticides pose unacceptable risks in developing countries because risk reduction measures such as Personal Protective Equipment or maintenance and calibration of application equipment are frequently not readily implemented, or not effective. The following list of 150 Highly Hazardous Pesticides is consistent with Article 7.5 of the FAO Code of Conduct, which relates to the prohibition of substances that, based on risk assessment, pose unacceptable risks after risk mitigation and marketing measures have been considered.

	Pesticide	CAS number	WHO Ia	WHO Ib	GHS Cancer 1A 1B	GHS muta 1A 1B	GHS repro 1A 1B	Montreal Protocol	Rotterdam Convention	Stockholm Convention	Severe Effects
1)	Acrolein	107-02-8		●							
2)	Alachlor	15972-60-8							●		
3)	Aldicarb	116-06-3	●						●		
4)	alpha-BHC; alpha-HCH	319-84-6								●	
5)	Alpha-chlorohydrin	96-24-2		●							
6)	Aluminum phosphide	20859-73-8									●
7)	Anthracene oil	90640-80-5			●						
8)	Arsenic and its compounds	7778-39-4			●						
9)	Atrazine	1912-24-9									●
10)	Azafenidin	68049-83-2					●				
11)	Azinphos-ethyl	2642-71-9		●							
12)	Azinphos-methyl	86-50-0		●					●		
13)	Benomyl	17804-35-2				●	●		●		
14)	Beta-cyfluthrin; Cyfluthrin	68359-37-5		●							
15)	beta-HCH; beta-BCH	319-85-7								●	
16)	Blasticidin-S	2079-00-7		●							
17)	Borax; disodium tetraborate decahydrate	1303-96-4					●				
18)	Boric acid	10043-35-3					●				
19)	Brodifacoum	56073-10-0	●				●				
20)	Bromadiolone	28772-56-7	●				●				
21)	Bromethalin	63333-35-7	●								
22)	Butoxycarboxim	34681-23-7		●							

	Pesticide	CAS number	WHO Ia	WHO Ib	GHS Cancer 1A 1B	GHS muta 1A 1B	GHS repro 1A 1B	Montreal Protocol	Rotterdam Convention	Stockholm Convention	Severe Effects
23)	Cadusafos	95465-99-9		●							
24)	Captafol	2425-06-1	●		●				●		
25)	Carbendazim	10605-21-7				●	●				
26)	Carbofuran	1563-66-2		●					●		
27)	Chlordane	57-74-9							●	●	
28)	Chlorethoxyphos	54593-83-8	●								
29)	Chlorfenvinphos	470-90-6		●							
30)	Chlormephos	24934-91-6	●								
31)	Chlorophacinone	3691-35-8	●				●				
32)	Clothianidin	210880-92-5									●
33)	Coumaphos	56-72-4		●							
34)	Coumatetralyl	5836-29-3		●			●				
35)	Creosote	8001-58-9			●						
36)	DDT	50-29-3							●	●	
37)	Demeton-S-methyl	919-86-8		●							
38)	Dichlorvos; DDVP	62-73-7		●							
39)	Dicrotophos	141-66-2		●							
40)	Difenacoum	56073-07-5	●				●				
41)	Difethialone	104653-34-1	●				●				
42)	Dinocap	39300-45-3					●				
43)	Dinoterb	1420-07-1		●			●				
44)	Diphacinone	82-66-6	●								
45)	Disulfoton	298-04-4	●								
46)	DNOC and its salts	534-52-1		●					●		
47)	Edifenphos	17109-49-8		●							
48)	Endosulfan	115-29-7							●	●	
49)	Endosulfan I (alpha)	959-98-8							●	●	
50)	E-Phosphamidon	297-99-4	●								
51)	Epichlorohydrin	106-89-8			●						
52)	EPN	2104-64-5	●								
53)	Epoxiconazole	133855-98-8					●				

	Pesticide	CAS number	WHO Ia	WHO Ib	GHS Cancer 1A 1B	GHS muta 1A 1B	GHS repro 1A 1B	Montreal Protocol	Rotterdam Convention	Stockholm Convention	Severe Effects
54)	Ethiofencarb	29973-13-5		●							
55)	Ethoprophos; Ethoprop	13194-48-4	●								
56)	Ethylene dibromide; 1,2-dibromoethane	106-93-4			●				●		
57)	Ethylene dichloride; 1,2-Dichloroethane	107-06-2			●				●		
58)	Ethylene oxide	75-21-8			●	●			●		
59)	Ethylene thiourea	96-45-7					●				
60)	Famphur	52-85-7		●							
61)	Fenamiphos	22224-92-6		●							
62)	Fenchlorazole-ethyl	103112-35-2			●						
63)	Fipronil	120068-37-3									●
64)	Flocoumafen	90035-08-8	●				●				
65)	Fluazifop-butyl	69806-50-4					●				
66)	Flucythrinate	70124-77-5		●							
67)	Flumioxazin	103361-09-7					●				
68)	Fluoroacetamide	640-19-7		●					●		
69)	Flusilazole	85509-19-9					●				
70)	Formetanate	22259-30-9		●							
71)	Furathiocarb	65907-30-4		●							
72)	Glufosinate-ammonium	77182-82-2					●				
73)	Heptenophos	23560-59-0		●							
74)	Hexachlorobenzene	118-74-1	●		●				●	●	
75)	Hexchlorocyclohexane; BHC mixed isomers	608-73-1							●		
76)	Imidacloprid	138261-41-3									●
77)	Isoxathion	18854-01-8		●							
78)	Lindane	58-89-9							●	●	
79)	Linuron	330-55-2					●				
80)	Magnesium phosphide	12057-74-8									●
81)	Mecarbam	2595-54-2		●							
82)	Mercury and its compounds	7439-97-6							●		
83)	Methamidophos	10265-92-6		●					●		

	Pesticide	CAS number	WHO Ia	WHO Ib	GHS Cancer 1A 1B	GHS muta 1A 1B	GHS repro 1A 1B	Montreal Protocol	Rotterdam Convention	Stockholm Convention	Severe Effects
84)	Methidathion	950-37-8		●							
85)	Methiocarb	2032-65-7		●							
86)	Methomyl	16752-77-5		●							
87)	Methyl bromide	74-83-9						●			
88)	Mevinphos	7786-34-7	●								
89)	Monocrotophos	6923-22-4		●					●		
90)	Nicotine	54-11-5		●							
91)	Nitrobenzene	98-95-3					●				
92)	Omethoate	1113-02-6		●							
93)	Oxamyl	23135-22-0		●							
94)	Oxydemeton-methyl	301-12-2		●							
95)	Paraquat dichloride	1910-42-5									●
96)	Parathion	56-38-2	●						●		
97)	Parathion-methyl	298-00-0	●						●		
98)	PCP; Pentachlorphenol	87-86-5		●					●		
99)	Pentachlorobenzene	608-93-5			●						
100)	Phorate	298-02-2	●								
101)	Phosphamidon	13171-21-6	●						●		
102)	Phosphine	7803-51-2									●
103)	Propetamphos	31218-83-4		●							
104)	Propylene oxide, Oxirane	75-56-9			●	●					
105)	Quizalofop-p-tefuryl	119738-06-6					●				
106)	Silafluofen	105024-66-6					●				
107)	Sodium fluoroacetate (1080)	62-74-8	●								
108)	Strychnine	57-24-9		●							
109)	Sulfotep	3689-24-5	●								
110)	Tebupirimifos	96182-53-5	●								
111)	Tefluthrin	79538-32-2		●							
112)	Terbufos	13071-79-9	●								
113)	Thiamethoxam	153719-23-4									●
114)	Thiofanox	39196-18-4		●							

	Pesticide	CAS number	WHO Ia	WHO Ib	GHS Cancer 1A 1B	GHS muta 1A 1B	GHS repro 1A 1B	Montreal Protocol	Rotterdam Convention	Stockholm Convention	Severe Effects
115)	Thiometon	640-15-3		●							
116)	Thiram in formulations with benomyl and carbofuran only	137-26-8							●		
117)	Triazophos	24017-47-8		●							
118)	Tridemorph	81412-43-3					●				
119)	Triflumizole	68694-11-1					●				
120)	Vamidothion	2275-23-2		●							
121)	Vinclozolin	50471-44-8					●				
122)	Warfarin	81-81-2		●			●				
123)	zeta-Cypermethrin	52315-07-8z		●							
124)	Zinc phosphide	1314-84-7		●							
125)	Z-Phosphamidon	23783-98-4	●								

OBSOLETE SUBSTANCES

	Pesticide	CAS Number
126)	2,4,5-T	93-76-5
127)	2,4,5-TCP	35471-43-3
128)	2,3,4,5-Bistetrahydro-2-furaldehyde	126-15-8
129)	Aldrin	309-00-2
130)	Binapacryl	485-31-4
131)	Carbosulfan	55285-14-8
132)	Chloranil	118-75-2
133)	Chlordecone (kepone)	143-50-0
134)	Chlordimeform	6164-98-3
135)	Chlorobenzilate	510-15-6
136)	DBCP	96-12-8
137)	Dieldrin	60-57-1
138)	Dinoseb and its salts	88-85-7
139)	Endrin	72-20-8
140)	Heptachlor	76-44-8
141)	Leptophos	21609-90-5
142)	Mirex	2385-85-5
143)	Nitrofen (TOK)	1836-75-5

OBSOLETE SUBSTANCES		
Pesticide		CAS Number
144)	Octamethylpyrophosphoramide (OMPA)	152-16-9
145)	Safrole	94-59-7
146)	Silvex	93-72-1
147)	Strobane; Terpene polychlorinates	8001-50-1
148)	TDE	72-54-8
149)	Thallium sulfate	7446-18-6
150)	Toxaphene (camphechlor)	8001-35-2

SAN List of Pesticides for Use with Risk Mitigation

TThe 2017 SAN List of Pesticides for Use with Risk Mitigation specifies risk associated with, and requirements to mitigate the risks of 170 pesticides (listed in the table below) to human workers/bystanders, aquatic life, wildlife and pollinators.

The analysis of these 170 substances is based on the Oregon State University Integrated Plant Protection Center's state-of-the-science risk assessment tool ipmPRiME and a risk model that identifies moderate to high (10% or greater) risk:

- **1.Risk to aquatic life subject to the mitigation criterion 3.27:**
  Pesticides qualified for this risk category if one or more ipmPRiME aquatic risk models (aquatic algae, aquatic invertebrates, or fish chronic risk) exhibited high risk at a typical application rate.
- **2.Risk to wildlife subject to the mitigation criterion 3.27:**
  Pesticides qualified for this risk category if one or more ipmPRiME terrestrial risk models (avian reproductive, avian acute, or small mammal risk) exhibited high risk at a typical application rate.
- **3.Risk to pollinators subject to the mitigation criterion 3.29:**
  Pesticides were selected based on a widely-used hazard quotient (HQ) resulting of pesticide application rate (AR) in g a.i./ha, and contact LD50 for the honey bee (Apis mellifera). Values of HQ<50 have been validated as low risk in the European Union, and monitoring indicates that products with an HQ>2,500 are associated with a high risk of hive loss. The HQ value used by SAN is >350, corresponding to a 15% risk of hive loss. The quotient includes a correction for systemic pesticides, where risks to bees are amplified.
- **4.Inhalation risk subject to the mitigation requirements listed in critical criterion 4.15:**
  Inhalation risk to bystanders was calculated using the ipmPRiME model for inhalation toxicity (Jepson et al., 2014[1]) calculated on the basis of child exposure and susceptibility. This index is protective for workers who may enter fields during or after application, and also bystanders.

The SAN List of Pesticides for Use with Risk Mitigation will be reviewed annually by SAN's technical committees. Pesticides added to the respective reference lists of the Oregon State University's Integrated Plant Protection Center will be included within a revised version of this list.

1 Jepson, P.C., Guzy, M., Blaustein, K., Sow, M., Sarr, M., Mineau, P., Kegley, S. (2014) Measuring pesticide ecological and health risks in West African agriculture to establish an enabling environment for sustainable intensification. Philosophical Transactions of the Royal Society B, http://dx.doi.org/10.1098/rstb.2013.0491

	Pesticide	CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
1)	1,3-Dichloropropene	542-75-6	●	●	●	●
2)	2,4-D, 2-ethylhexyl ester	1928-43-4	●			
3)	2,4-D, isooctyl ester	53404-37-8	●			
4)	Acephate	30560-19-1		●	●	
5)	Acequinocyl	57960-19-7	●			
6)	Acetamiprid	135410-20-7	●			
7)	Acifluorfen, sodium salt	62476-59-9		●		
8)	Amitraz	33089-61-1				●
9)	Amitrole	61-82-5		●		
10)	Anilazine	101-05-3	●			
11)	Avermectin	71751-41-2	●		●	
12)	Azoxystrobin	131860-33-8	●			
13)	Bendiocarb	22781-23-3	●	●	●	●
14)	Benfluralin	1861-40-1		●		
15)	Bensulide	741-58-2	●	●		●
16)	Bentazon, sodium salt	50723-80-3		●		●
17)	Bifenthrin	82657-04-3	●		●	
18)	Bromacil	314-40-9	●			
19)	Bromoxynil heptanoate	56634-95-8	●			
20)	Bromoxynil octanoate	1689-99-2	●			
21)	Captan	133-06-2			●	
22)	Carbaryl	63-25-2	●	●	●	
23)	Chlorine dioxide	10049-04-4				●
24)	Chlormequat chloride	999-81-5		●		
25)	Chloropicrin	76-06-2	●	●		●
26)	Chlorothalonil	1897-45-6	●	●		
27)	Chlorpyrifos	2921-88-2	●	●	●	●
28)	Chlorpyrifos-methyl	5598-13-0				●
29)	Copper hydroxide	20427-59-2		●		
30)	Copper oxide (ic)	1317-38-0	●			
31)	Copper oxide (ous)	1317-39-1			●	

	Pesticide	CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
32)	Copper oxychloride	1332-40-7		●	●	
33)	Copper oxychloride sulfate	8012-69-9			●	
34)	Copper sulfate (anhydrous)	7758-98-7	●			
35)	Copper sulfate (pentahydrate)	7758-99-8	●	●	●	
36)	Cube extracts					●
37)	Cyanazine	21725-46-2		●		
38)	Cycloate	1134-23-2			●	●
39)	Cyhalothrin, gamma	76703-62-3	●			
40)	Cyhalothrin, lambda	91465-08-6	●		●	
41)	Cypermethrin	52315-07-8	●		●	
42)	Cypermethrin, beta	65731-84-2	●		●	
43)	Cypermethrin, zeta	52315-07-8	●		●	
44)	Dazomet	533-74-4	●	●	●	
45)	Deltamethrin	52918-63-5	●		●	
46)	Diazinon	333-41-5	●	●	●	●
47)	Dichlobenil	1194-65-6		●		
48)	Dichloran	99-30-9		●		●
49)	Diclofop-methyl	51338-27-3		●		
50)	Dicofol	115-32-2		●		●
51)	Difenzoquat methyl sulfate	43222-48-6		●		
52)	Diflubenzuron	35367-38-5	●	●		
53)	Dimethenamid-P	163515-14-8	●			
54)	Dimethoate	60-51-5	●	●	●	●
55)	Dinoseb	88-85-7		●	●	
56)	Dinotefuran	165252-70-0	●		●	
57)	Diphenylamine	122-39-4	●			
58)	Diquat dibromide	85-00-7		●		●
59)	Diquat ion	2764-72-9		●		
60)	Diuron	330-54-1		●		
61)	Dodine	2439-10-3	●	●	●	
62)	D-trans Allethrin (Bioallethrin)	584-79-2				●

	Pesticide	CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
63)	Emamectin benzoate	137512-74-4	●		●	
64)	Endrin	72-20-8	●	●	●	
65)	EPTC	759-94-4		●	●	●
66)	Esfenvalerate	66230-04-4	●		●	
67)	Ethalfluralin	55283-68-6	●			
68)	Ethion	563-12-2	●	●	●	●
69)	Etoxazole	153233-91-1	●			
70)	Famoxadone	131807-57-3	●	●		
71)	Fenbutatin-oxide	13356-08-6	●	●		
72)	Fenitrothion	122-14-5		●		
73)	Fenoxycarb	79127-80-3	●			
74)	Fenpropathrin	39515-41-8	●	●	●	
75)	Fenpyroximate	134098-61-6	●	●		
76)	Fentin hydroxide	76-87-9	●	●		
77)	Ferbam	14484-64-1	●		●	●
78)	Fluazinam	79622-59-6			●	●
79)	Flufenacet	142459-58-3	●			
80)	Fluopyram	658066-35-4		●		
81)	Folpet	133-07-3	●			
82)	Fomesafen sodium	108731-70-0				●
83)	Formaldehyde	50-00-0	●	●		●
84)	Formetanate hydrochloride	23422-53-9	●	●	●	
85)	Glyphosate, isopropylamine salt	38641-94-0		●		
86)	Glyphosate-trimesium	81591-81-3		●		
87)	Hexazinone	51235-04-2	●	●		
88)	Hydrogen cyanamide	420-04-2	●	●	●	●
89)	Indoxacarb, S-isomer	173584-44-6			●	
90)	Iodosulfuron methyl, sodium salt	144550-36-7	●			
91)	Isoxaben	82558-50-7		●		
92)	Lenacil	2164-08-1	●			
93)	Lime-sulfur	1344-81-6		●		

	Pesticide	CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
94)	Malathion	121-75-5			●	
95)	Maleic hydrazide, potassium salt	28382-15-2			●	●
96)	Mancozeb	8018-01-7		●		
97)	Maneb	12427-38-2		●	●	●
98)	MCPA, 2-ethyl hexyl ester	29450-45-1	●			
99)	MCPA, isooctyl ester	26544-20-7	●			
100)	Metalaxyl	57837-19-1		●		
101)	Metam potassium	137-41-7	●	●		
102)	Metconazole	125116-23-6		●		
103)	Methoprene	40596-69-8	●	●		
104)	Methoxychlor	72-43-5	●			
105)	Methyl iodide	74-88-4	●	●		●
106)	Methyl isothiocyanate	556-61-6	●			●
107)	Metiram	9006-42-2		●		●
108)	Metolachlor	51218-45-2		●		
109)	Metolachlor, (S)	87392-12-9	●			
110)	Metribuzin	21087-64-9		●		
111)	Mineral oil, refined	8042-47-5	●			
112)	Myclobutanil	88671-89-0		●		
113)	Nabam	142-59-6		●	●	
114)	Naled	300-76-5	●	●	●	●
115)	Napropamide	15299-99-7		●		
116)	Norflurazon	27314-13-2	●	●		
117)	Novaluron	116714-46-6	●			
118)	Ortho-phenylphenol	90-43-7	●			
119)	Ortho-phenylphenol, sodium salt	132-27-4			●	●
120)	Oryzalin	19044-88-3	●	●		
121)	Oxadiazon	19666-30-9	●	●		
122)	Oxycarboxin	5259-88-1			●	
123)	Oxyfluorfen	42874-03-3	●	●		
124)	Oxythioquinox	2439-01-2	●	●		

	Pesticide	CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
125)	PCNB (Quintozene)	82-68-8	●		●	●
126)	Pendimethalin	40487-42-1		●		
127)	Permethrin	52645-53-1	●	●	●	
128)	Phosalone	2310-17-0	●	●		
129)	Phosmet	732-11-6	●	●	●	
130)	Pirimicarb	23103-98-2	●	●	●	
131)	Prometryn	7287-19-6	●	●		
132)	Propamocarb hydrochloride	25606-41-1			●	
133)	Propanil	709-98-8	●	●		
134)	Propargite	2312-35-8		●		
135)	Propoxur	114-26-1	●	●	●	●
136)	Prosulfuron	94125-34-5	●			
137)	Pyraclostrobin	175013-18-0	●			
138)	Pyrethrins	8003-34-7			●	
139)	Pyridaben	96489-71-3	●		●	
140)	Resmethrin	10453-86-8	●	●	●	
141)	Rotenone	83-79-4			●	●
142)	S-Dimethenamid	163515-14-8	●			
143)	Simazine	122-34-9		●		
144)	Sodium chlorate	7775-09-9		●		
145)	Sodium dimethyl dithio carbamate	128-04-1		●		●
146)	Sodium hypochlorite	7681-52-9	●			
147)	Sodium tetrathiocarbonate	7345-69-9		●		
148)	Spinetoram (XDE-175-J)	187166-40-1			●	
149)	Spinosad (mixture of Factors A & D)	131929-60-7			●	
150)	Spirodiclofen	148477-71-8	●			
151)	Sulfentrazone	122836-35-5		●		
152)	Terrazole	2593-15-9		●		●
153)	Tetrachlorvinphos, Z-isomer	22248-79-9	●	●	●	
154)	Tetraconazole	112281-77-3		●		
155)	Thiabendazole	148-79-8	●	●	●	

Pesticide		CAS number	Risk to Aquatic life (3.27)	Risk to Wildlife (3.27)	Risk to Pollinators (3.29)	Inhalation risk (4.15)
156)	Thiacloprid	111988-49-9	●	●		
157)	Thiobencarb	28249-77-6	●	●		
158)	Thiodicarb	59669-26-0	●	●	●	●
159)	Thiophanate-methyl	23564-05-8		●		
160)	Tolfenpyrad	129558-76-5	●			
161)	Triadimenol	55219-65-3		●		
162)	Triallate	2303-17-5	●	●		
163)	Trichlorfon	52-68-6	●	●	●	
164)	Triclopyr, triethylamine salt	57213-69-1		●		
165)	Trifloxystrobin	141517-21-7	●			
166)	Trifluralin	1582-09-8		●		
167)	Triforine	26644-46-2			●	
168)	Triticonazole	131983-72-7		●		
169)	Zineb	12122-67-7			●	
170)	Ziram	137-30-4	●	●	●	