

Toxicity of Pesticides

K.S. Rao*

INTRODUCTION

All pesticides must be toxic, or poisonous, to be effective against the pests they are intended to control. Because pesticides are toxic, they are potentially hazardous to humans, animals, other organisms and the environment. Therefore, people who use pesticides or regularly come in contact with them must understand the relative toxicity and potential health effects of the products they use.

The toxicity of a pesticide is its capacity or ability to cause injury or illness. The toxicity of a particular pesticide is determined by subjecting test animals to varying dosages of the active ingredient (a.i.) and each of its formulated products. The active ingredient is the chemical component in the pesticide product that controls the pest. The two types of toxicity are acute and chronic.

Acute toxicity of a pesticide refers to the chemical's ability to cause injury to a person or animal from a single exposure, generally of short duration. The four routes of exposure are dermal (Skin), inhalation (Lungs), oral (Mouth) and eyes. Acute toxicity is determined by examining the dermal toxicity, inhalation toxicity and oral toxicity in test animals. In addition, eye and skin irritation are also examined.

Acute toxicity is measured as the amount or concentration of a toxicant—the a.i.—required to kill 50 percent of the animals in a test population. This measure is usually expressed as LD₅₀ (Lethal dose 50) or LC₅₀ (Lethal concentration 50). Additionally, the LD₅₀ and LC₅₀ values are based on a single dosage and are recorded in milligrams of pesticide per kilogram of body weight (mg/kg) of the test animal or in parts per million (ppm). LD₅₀ and LC₅₀ values are useful in comparing the toxicities of different active ingredients and different formulations containing the same active ingredient. *The lower the LD₅₀ or LC₅₀ of a pesticide product, the greater its toxicity to humans and animals.* Pesticides with a high LD₅₀ are the least toxic to humans if used according to the directions on the product label.

The chronic toxicity of a pesticide is determined by subjecting test animals to long-term exposure to the active ingredient. Any harmful effects that occur from small doses repeated over a period of time are termed chronic effects. Some of the suspected chronic effects from exposure to certain pesticides include birth defects, production of tumors, blood disorders and neurotoxic effects (Nerve disorders). The chronic toxicity of a pesticide is more difficult

to determine through laboratory analysis than acute toxicity.

Products are categorized on the basis of their relative acute toxicity (their LD₅₀ or LC₅₀ values). Pesticides that are classified as highly toxic (Toxicity Category I) on the basis of either oral, dermal, or inhalation toxicity must have the signal words DANGER and POISON printed in red with a skull and crossbones symbol prominently displayed on the front panel of the package label. The acute (Single dosage) oral LD₅₀ for pesticide products in this group ranges from a trace amount to 50 mg/kg. For example, exposure of a few drops of a material taken orally could be fatal to a 150-pound person.

Some pesticide products have the signal word DANGER without the skull and crossbones symbol. This is because possible skin and eye effects are more severe than suggested by the acute toxicity (LD₅₀) of the product.

Pesticide products considered moderately toxic (Toxicity Category II) must have the signal word WARNING displayed on the product label. In this category, the acute oral LD₅₀ ranges from 50 to 500 mg/kg. A teaspoon to an ounce of this material could be fatal to a 150-pound person.

Pesticide products classified as either slightly toxic or relatively nontoxic (Toxicity Categories III and IV) are required to have the signal word CAUTION on the pesticide label. Acute oral LD₅₀ values in this group are greater than 500 mg/kg. An ounce or more of this material could be fatal to a 150-pound person.

Despite the fact that some pesticide products are considered only slightly toxic or relatively nontoxic, all pesticides can be hazardous to humans, animals, other organisms and the environment if the instructions on the product label are not followed. Use the pesticide only as recommended by the manufacturer. As the applicator, you are legally responsible for any misuse of a pesticide.

Table below summarizes the LD₅₀ and LC₅₀ values for each route of exposure for the four toxicity categories and their associated signal word. For example, an active ingredient with a dermal LD₅₀ of 1,000 mg/kg would be in Toxicity Category II with a WARNING signal word. Keep in mind, an active ingredient may have a high LD₅₀ placing it in a Toxicity Category II, III, or IV but also have corrosive eye/skin effects that take priority and place it in Toxicity Category I.

K.S. Rao

Advinus Therapeutics Ltd, 21 and 22,
Phase II, Peenya Industrial Area, Bengaluru – 560058, Karnataka, INDIA.

Correspondence

Dr. K.S. Rao, (M.V.Sc., Ph.D., DABT)

Senior Director – Strategic Business Development, Advinus Therapeutics Ltd, 21 and 22, Phase II, Peenya Industrial Area, Bengaluru – 560 058, Karnataka, INDIA.

Ph.no: +91-733-783-0074

Email: ks.rao@advinus.com

History

- Submission Date: 07-10-2018;
- Review completed: 02-12-2018;
- Accepted Date: 03-12-2018.

DOI : 10.5530/bems.4.2.8

Article Available online

<http://www.bemsreports.org>

Copyright

© 2018 Phcog.Net. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Cite this article : Rao KS. Toxicity of Pesticides. BEMS Reports. 2018;4(2):31-6.

Toxicity Categories for Active Ingredients

Routes of Exposure	Toxicity Cat. I	Toxicity Cat. II	Toxicity Cat. III	Toxicity Cat. IV
Oral LD ₅₀	Up to and including 50 mg/kg	50–500 mg/kg	500–5,000 mg/kg	>5,000 mg/kg
Inhalation LC ₅₀	Up to and including 0.2 mg/l	0.2–2 mg/l	2–20 mg/l	>20 mg/l
Dermal LD ₅₀	Up to and including 200 mg/kg	200–2,000 mg/kg	2,000–20,000 mg/kg	>20,000 mg/kg
Eye Effects	Corrosive corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin Effects	Corrosive	Severe irritation at 72 hrs	Moderate irritation at 72 hrs	Mild or slight irritation at 72 hrs
Signal Word	DANGER	POISON	WARNING	CAUTION

Although every pesticide is different and the product label should be consulted to determine the Personal protective equipment (PPE) requirements for each chemical, some general rules apply for choosing PPE according to the different toxicity categories (Table below).

Minimum PPE and Work Clothing for Pesticide-Handling Activities

Route of Exposure	Toxicity Cat. I	Toxicity Cat. II	Toxicity Cat. III	Toxicity Cat. IV
Dermal toxicity or skin irritation potential		Coveralls worn over long-sleeved shirt and long pants	Coveralls worn over short-sleeved shirt and short pants	long-sleeved shirt and long pants
	Socks	Chemical-resistant	Chemical-resistant	Chemical-resistant
	Footwear	Chemical-resistant	Chemical-resistant	Footwear
Inhalation toxicity	Gloves	Gloves	Gloves	No minimum
		Respiratory protection device	Respiratory protection device	no minimum
Eye irritation potential		Protective eyewear	Protective eyewear	no minimum

The acute oral and dermal LD₅₀ values of commonly used pesticides are listed in the following tables and include acaricides, bactericides, fungicides, herbicides, insect growth regulators, insecticides, nematocides and plant growth regulators. The common chemical name of the active ingre-

redient followed by an example of a trade name is listed in the first column. Use categories (General or restricted) are indicated in the second column. The acute oral LD₅₀ and acute dermal LD₅₀ are in the third and fourth columns. The fifth column indicates the Restricted-entry interval (REI). The REI is the time immediately after a pesticide application when entry into the treated area is limited.

Acaricides

Active Ingredient, Trade Name	Use Category	Oral LD ₅₀ (mg/kg)	Dermal LD ₅₀ (mg/kg)	REI (hours)
Dicofol, Kelthane, Kelthane MF	G	570–595	>2,000	12
Disulfoton, Disyston	G	2–12	3.6–15.9	48
Endosulfan, Phaser	G	160	359	24
Ftoaxazole, Secure	G	>5,000	>2,000	12
Fenbutatin-oxide, Vendex	R	2,631	>2,000	48
Formetanate hydrochloride, Carzol	G	21	>10,200	48, 72
Hexythiazox, Savey	G	>5,000	>5,000	12
Pyridaben, Sanmite	G	820–1,350	>2,000	12
sulfur	G	>5,000	>5,000	12, 24, 48
tetradifon, Tedion	G	>10,000	>10,000	12

Bactericides

Active Ingredient, Trade name	Use Category ³	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI (hours)
Acibenzolar-S-methyl, Actigard	G	>5,000	>2,000	12
Dimanin A, Bayclean	G	290	--	--
Hydrogen dioxide, Terra Clean	G	330	1,410	0
Oxytetracycline, Mycoshield	G	>5,000	>2,000	12
Pseudomonas fluorescens A506, Blight Ban	G	--	--	4
Streptomycin, Agri-Mycin-17, Agri-Strep	G	9,000	--	12

Fungicide

Active Ingredient, Trade name	Use Category ³	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI (hours)
Acibenzolar-S-methyl, Actigard	G	>5,000	>2,000	12
Azoxystrobin, Abound, Quadris	G	>2,000	>5,000	4
<i>Bacillus subtilis</i> , Serenade	G	>5,000	>2,000	12
Boscalid, Endura	G	>2,000	>2,000	12
Captan*	G	9,000	--	96
Carboxin, Vitavax	G	3,820	>4,000	24
Chlorine, Clorox (bleach)	G	--	--	12
Chloroneb	G	>5,000	>5,000	12
Chloropicrin, Chloro-o-Pic	R-3, 10	250	--	72
Chlorothalonil*, Bravo	G	>10,000	>10,000	24
<i>Coniothyrium minitans</i> , Contans	G	--	--	4
Copper, fixed ⁸	G	--	--	12, 24
Copper hydroxide, Spin Out	G	1,000	--	24
Cymoxanil, Curzate	G	1,100	>3,000	12
Dichloropropene, Telone	R	127	423	120
Dicloran, Botran	G	tech 5,000	--	12
Difenoconazole, Dividend	G	1,453	2,010	48
Dimethomorph, Acrobat	G	3,900	>2,000	24
Dodine, Syllit	G	1,000	>6,000	48
Etridiazole, Terrazole	R,G	1,077	>2,000	12
Famoxodone, Famoxate	G	>5,000	>5,000	12
Fenbuconazole, Enable, Indar	R,G	>2,000	>5,000	12
Fenhexamid, Elevate	G	>5,000	>5,000	4
Fluazinam, Omega	G	>5,000	>2,000	48
Fludioxonil, Maxim	G	>5,000	>2,000	12
Flutolanil, Folistar	G	10,000	>5,000	12
Fosetyl Al, Alette	G	5,000	>2,000	12, 24
Harpin protein, Messenger	G	>5,000	>6,000	4
Iprodione*, Rovral	G	>4,400	>2,000	12, 24
Kresoxim-methyl, Sovran	G	5,000	>2,000	12
Mancozeb, Dithane, Manzate	G	>5,000	>5,000	24
Maneb, Manex	G	tech 7,990	>5,000	24
Metalaxyl, Apron, Ridomil	G	tech 669	>3,100	12
Metalaxyl-M, Ridomil Gold	G	>5,000	>2,000	48
Metam potassium, K-Pam	G	630	>1,000	48
Methyl bromide*, MC-2, Terr-O-Gas 67	R-8	see footnote 7		48
Metiram, Polyram	G	tech >6,810	>2,000	12
Myclobutanil, Nova	G	1,600	>5,000	24

PCNB, Terraclor	G	tech 1,700-5,000	2,000-4,000	12, 24
Propamocarb hydrochloride, Previcar	G	2,900	>3,000	12
Propiconazole*, Tilt, Orbit	G	1,517	>4,000	24
Pyraclostrobin, Cabrio, Headline	G	>500	>4,000	12
Sodium chlorite, Alcide	G	--	--	12
Streptomycetes, SoilGard	G	--	--	12
Sulfur	G	>5,000	>5,000	12, 24, 48
Tebuconazole, Horizon	G	4,000	5,000	12
Thiabendazole*, Mertect	G	3,100	--	12
Thiophanate-methyl, Topsin M	G	7,500	--	12
Thiram, Thylate	G	tech 1,000	>5,000	12
Triadimefon, Bayleton	G	812	>2,000	12
Trifloxystrobin, Gem, Flint	G	>5,000	>2,000	12
Triflumizole, Procure	G	2,230	>2,000	12
Triphenyltin hydroxide, Super Tin	R-7	156-345	1,600	48
Vinclozolin, Ronilan	G	tech 10,000	--	12
Zoxamide, Gavel	G	>5,000	>5,000	48

Herbicide

Active Ingredient, Trade name	Use Category ³	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI (hours)
Acetochlor, Degree	R	2,148	4,166	12
Acifluorfen, Blazer	G	2,025	>2,000	48
Alachlor, Lasso, Partner	R-12	tech 930-1,350	13,300	12
Ametryn, Evik	G	1,950	--	12
Asulam, Asulox	G	>5,000	>2,000	12
Atrazine, AAtrex	R	1,869	>3,100	12
Bensulide, Prefar	G	tech 271-1,470	--	12
Bentazon, Basagran	G	2,063	>6,050	12
Bromoxynil, Brominal, Buctril	G	tech 260	>2,000	12
Butylate, Sutan +	G	4,500	>4,640	2
Carfentrazone-ethyl, Aim	G	5,143	>4,000	12
CDAA, Randox	G	750	--	12
Chlorimuron ethyl, Classic	G	>4,000	>2,000	12
Chlorpropham, Chloro IPC, Sprout Nip	G	3,800	--	48
Clethodim, Select	G	3,610	>5,000	12, 24
Clomazone, Command	G	1,369	>2,000	12

Clopyralid, Stinger	G	>5,000	>2,000	12	Oryzalin, Surflan	G	>10,000	--	12
Cycloate*, Ro-Neet	G	3,160-4,640	--	12	Oxyfluorfen, Goal	G	tech >5,000	>10,000	24
Dalapon*, Dowpon M	G	9,330	--	24	Paraquat, Gramoxone Max	R-1,8	150	--	12, 48
DCPA*, Dacthal	G	>10,000	>2,000	24	Pebulate, Tillam	G	tech 921-1,900	>4,640	12
Desmedipham, Betanex	G	>3,960	>10,000	24	Pendimethalin, Prowl	G	1,250	>5,000	12, 24
Dicamba, Banvel, Clarity	G	2,629	>2,000	12, 24	Phenmedipham*, Spin-aid	G	>8,000	>4,000	24
Dimethenamid, Frontier, Outlook	G	849	>2,000	12	Picloram, Tordon	R	8,200	>5,000	12
Diquat	G	215-235	400	24	Primisulfuron-methyl, Beacon	G	>5,050	>2,010	12
Diquat dibromide, Reward	G	600	260	--	Pronamide, Kerb	R-5	tech 8,350	5,620	12
Diuron, Karmex	G	tech >5,000	>5,000	12	Propachlor, Ramrod	G	500-1,700	>20,000	48
Endothall, Desiccate II	R	233	481	48	Propanil, Stampede	G	>2,500	>5,000	24
EPTC, Eradicane	G	tech 1,630	--	12	Prosulfuron, Peak	G	4,360	2,020	12
Ethalfuralin, Curbit 3E	G	>10,000	>10,000	12	Quizalofop-P-ethyl, Assure II	G	1,210	--	12
Fenoxaprop-ethyl, Acclaim	G	2,565	>2,000	24	Rimsulfuron, Shadeout	G	>5,000	>2,000	4
Fluazifop-P-butyl*, Fusilade DX	G	3,328	--	12	Sethoxydim, Poast	G	2,676-3,125	>5,000	12, 24
Flumetsulam, Python	G	>5,000	>2,000	12	Simazine, Princep	G	>5,000	>3,100	12
Flumiclorac-pentyl, Resource	G	3,200	>2,000	12	Sulfentrazone, Authority	G	2,855	>2,000	12
Fomesafen, Reflex	G	1,858	--	24	Terbacil*, Sinbar	G	5,000-7,500	--	12
Foramsulfuron, Option	G	>3,881	>5,000	12	Thifensulfuron-methyl, Harmony GT	G	>5,000	>2,000	4
Glufosinate-ammonium, Liberty	G	1,620	4,000	12	Triasulfuron, Amber	G	>5,050	>2,000	4
Glyphosate, Roundup, Touchdown	G	>5,000	>5,000	24	Triclopyr, Garlon, Remedy	G	tech 630	>2,000	48
Halosulfuron-methyl, Manage, Permit	G	1,287	>5,000	12	Trifluralin, Treflan, Trilin	G	>10,000	--	12, 24
Hexazinone, Velpar	G	1,690	5,278	24	2,4-D (acid)	R(NJ),G	375	--	12, 24
Imazamox, Raptor	G	>5,000	>4,000	24	2,4-DB, Butyrac	G	>2,000	>10,000	48
Imazaquin, Scepter	G	>5,000	>5,000	12					
Imazethapyr, Pursuit	G	>5,000	>2,000	12, 24					
Lactofen, Cobra	G	>5,000	>2,000	12					
Linuron, Linex, Lorox	G	tech 4,000	--	24					
MCPA, U 46 M-Fluid	G	900-1,160	>4,000	12, 24, 48					
Mesotrione, Callisto	G	>5,000	>2,000	12					
S-Metolachlor, Dual Magnum	G	tech 2,780	10,000	12					
Metribuzin, Sencor, Lexone	R-14	tech 1,100-2,300	>20,000	12					
Metsulfuron-methyl, Ally	G	>5,000	>2,000	4					
Napropamide, Devrinol	G	>4,640	--	12					
Naptalam, Alanap L	G	1,770	--	24					
Nicosulfuron, Accent	G	>5,000	>2,000	4					
Norflurazon, Solicam	G	>8,000	>20,000	12					

Insect Growth Regulator

Active Ingredient, Trade name	Use Category	LD ₅₀ – Oral mg/kg	LD ₅₀ – Dermal mg/kg	REI (hours)
azadirachtin, Aza-Direct	G	>5,000	>2,000	12
cyromazine, Trigard	R,G	3,387	>3,100	12
fenoxycarb, Comply	G	16,800	>2,000	--
hydroprene, GenTrol	G	>34,000	5,100	--
S-kinoprene, Enstar II	G	4,900	9,000	4
S-methoprene, Precor	G	>34,000	>2,000	--
pyriproxyfen, Esteem, Knack	G	>5,000	>2,000	12

Insecticides

Active Ingredient, Trade name	Use Category ³	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI (hours)					
Abamectin, Agri-Mek (FB)	R	300	>1,800	12	Esfenvalerate, Asana XL (PY)	R-12	468	>2,000	12
Acephate, Address, Lancer (OP)	G	tech 980	>10,250	24	Ethoprop, Mocap (OP)	R	61	2	48
Acetamiprid, Assail	G	1,064	>2,000	12	Fenamiphos, Namacur (OP)	R-1,10	10	>2,000	48
Aldicarb*, Temik (CA)	R	5	>2,000	48	Fenproparthrin, Danitol (PY)	R	66	>2,000	24
Azadirachtin, Neemix	G	>5,000	>2,000	12	Fipronil, Regent	R	336	382	0
Azinphos-methyl, Guthion (OP)	R-1,2,3,8, 10,12	tech 5-20	220	48	Imidacloprid, Admire, Gaucho (NN)	G	tech 450	>5,000	12
Bacillus thuringiensis aizawai, XenTari (BT)	G	See footnote 6		4	Indoxacarb, Avaunt (CA)	G	268	>5,000	12
<i>Bacillus thuringiensis aizawa + kurstaki</i> , Agree (BT)	G	See footnote 6		4	Insecticidal soap, M-Pede (SO)	G	16,900	--	12
<i>Bacillus thuringiensis encapsulated delta endotoxin</i> , Mattech (BT)	G	See footnote 6		4	Lindane (CH)	R-5	88-125	1,000	12, 24
<i>Bacillus thuringiensis kurstaki</i> , Crymax (BT)	G	See footnote 6		4	Malathion, Cythion (OP)	G	tech 5,500	>2,000	12
<i>Bacillus thuringiensis tenebrionis</i> , Novodor (BT)	G	See footnote 6		4	Metaldehyde, Deadline (OT)		630	--	12, 24
Bifenthrin, Brigade, Empower (PY)	R	262	>2,000	24	Methamidophos, Monitor (OP)	R-2,11	tech 20	130	48
Bifenazate, Acramite	G	>5,000	>2,000	12	Methomyl, Lannate (CA)	R-8,10	17	5,880	48
Carbaryl*, Sevin (CA)	G	500	850	12	Methoxychlor (CH)	G	6,000	--	12
Carbofuran, Furadan (CA)	R-3	8	>3,000	48	Methoxyfenozide, Intrepid	G	>5,000	>5,000	4
Chlorethoxyfos, Fortress (PY)	R	tech 1.8-4.8	12.5-18.5	48	Methyl parathion*, Metacide (OP)	R-2,8,10,11	6	50	48
Chlorpyrifos*, Lorsban (OP)	R	92-276	2,000	12, 24	Oxamyl, Vydate L (CA)	R	37	2,960	48
Cryolite, Kryocide, Prokil (IO)	G	>5,000	--	12	Oxydemeton-methyl*, Metasystox-R (OP)	R	tech 50	150	48
Cyfluthrin, Baythroid (PY)	R	500	>5,000	12	PBO (piperonyl butoxide), Incite (OT)	G	>7,500	--	12
Cyhalothrin-lambda, Karate (PY)	R-12	79	632	24	Permethrin, Ambush, Pounce (PY)	R-12	tech >4,000	>4,000	24
Cypermethrin, Ammo (PY)	R	250	2,000	12	Phorate*, Thimet (OP)	R-2,10,11	tech 2-4	20-30	48
Deltamethrin, Pounce	R-12	431	>2,000	12	Phosmet, Imidan (OP)	R(NJ),G	tech 147-316	>4,640	24
Diazinon (OP)	R-11	tech 300-400	3,600	12, 48	Pymetrozine, Fulfill (OT)	G	>5,000	>2,000	12
Dicofol, Kelthane (CH)	G	570	2,000	12	Pyrethrins, Pyganic (BO)	G	1,500	>1,800	12
Diflubenzuron, Dimilin	R	4,640	>10,000	12	Pyrethrum (BO)	G	1,500	>1,800	12
Dimethoate*, Cygon (OP)	R(NJ),G	tech 235	>400	48	Rotenone*, Rotenox, Noxifire (BO)	G	132-1,500	--	12, 24, 48
Disulfoton, Di-Syston (OP)	R-2,3	tech 4	10	48	Spinosad, SpinTor, Entrust (ML)	G	>5,000	>2,000	4
Emamectin, Proclaim (FB)	R	1,516	>2,000	48	Sulfur (IO)	G	>5,000	>5,000	12, 24, 48
Endosulfan, Thiodan, Phaser (CH)	R(NJ),G	tech 160		48	Tebufenozide, Confirm (PY)	G	>5,000	>5,000	4
					Tefluthrin, Force (PY)	R	1,213	>2,000	0
					Terbufos, Counter (OP)	R-1,2	tech 4.5	1.1	48
					Tetramethrin, Ammo	R-12	>5,000	>2,000	12
					Thiamethoxam, Actara, Platinum (NN)	G	>5,000	>2,000	12
					Thiodicarb, Larvin (CA)	G	66	>2,000	12
					Zeta-cypermethrin, Mustang (PY)	R-10,12	234	>2,000	12

Plant Growth Regulator

Active Ingredient, Trade name	Use Category	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI (hours)
Chloropicrin	R-3,10	250	--	72
DCP, dichloropropene	R(NJ),G	300	333	72
Ethoprop, Mocap	R-2	61.5	2.4	48
Fenamiphos, Namacur	R-2	tech 3	200	48
Metam-sodium, Vapam HL	G	1,891	>3,074	48
Methyl bromide*, MC-2, Terr-O-Gas 67	R-8	7		48
Oxamyl, Vydate L	R	37	2,960	48

Disclaimer

This newsletter is solely intended for educational purpose. Some of the contents of this newsletter may have been adopted without or with modification from other published resources.

Active Ingredient, Trade name	Use Category*	Oral LD ₅₀ mg/kg	Dermal LD ₅₀ mg/kg	REI [†] (hours)
BAP, Exilis	G	3,980	--	4
Chlormequat chloride, Cycocel-Extra	G	883	>4,000	12
Daminozide, B-Nine	G	>5,000	>5,000	24
Dikegulac sodium, Atrimmec	G	31,000	>1,000	--
Ethephon, Ethrel	G	4,229	--	48
Flurprimidol, Cutless	G	709	--	--
Gibberellic acid, GibGro, ProGibb	G	1,000-25,000	--	4
Lactic acid, Propel	G	3,543	>2,000	48
Maleic hydrazide, Royal MH-30	RG	>5,000	>5,000	12
Mepiquat chloride, Pix	G		--	12
Naphthaleneacetamide, Thin-it	G	1,690	2,000	48
l-Naphthaleneacetic acid, Fruite	G	2,520	--	48
Paclbutrazol, Bonzi	G	5,346	>1,000	12
Plant Extract 620, Agrispon	G	>20,000	--	--
Prohexadione-calcium, Apogee	G	>5,000	>2,000	12
Trinexapac ethyl, PrimoMaxx	G	>5,050	2,020	0
Uniconazole-P, Sumagic	G	2,020	>2,000	12

Cite this article : Rao KS. Toxicity of Pesticides. BEMS Reports. 2018;4(2):31-6.