

Relative Toxicity of Pesticides to Honey Bees by Laboratory and Field Tests

Group I. Highly Toxic

Severe losses may be expected if these pesticides are used when bees are present at treatment time or within a day *thereafter*.

Abamectin	Baygon (propoxur)	DDVP (dichlorvos)	Flagship (thiamethoxam)	Nudrin (methomyl)	Scout (tralomethrin)
Acetamiprid, Assail, Tristar	Baytex (fenthion)	Decis (decamethrin)	Folimat	Orthene (acephate)	Sevin (carbaryl) ³
Acramite (bifenazate)	Baythroid (cyfluthrin)	Delegate, Radiant (spinetoram)	Fipronil	Pact (thianitrile)	Sniper
Actara, Centric, Platinum, Helix, Cruiser, Adage (thiamethoxam)	BHC	Denim (emamectin benzoate)	Furadan F (carbofuran)	Parathion	Spectracide
Address (acephate)	Bidrin (dicotophos)	Dibrom (naled)	Fury (zeta- cypermethrin)	Pay Off (flucythrinate)	Steward (indoxacarb)
Admire, Advantage, Gaucho, Merit, Premise, Touchstone (imidacloprid)	Bux (bufencarb)	De-fend, Dimate (dimethoate)	Gardona (tetrachlorvinphos)	Phosdrin (mevinphos)	Sumithion (fenitrothion)
Advantage	Capture, Annex, Brigade (bifenthrin)	Diazinon (spectracide)	Guard Star (permethrin) ¹	Phosphamidon	Supracide (methidathion)
Afugan (pyrazophos)	Carzol	Dimecron (phosphamidon)	Guthion (azinphos-methyl)	Poncho, Titan, Clutch, Acceleron, Arena, Belay, Celero (clothianidin)	Swat (bonyl)
Ambush (permethrin)	Cidial (phenthoate)	Dinotefuran	Imidan (phosmet)	Pounce (permethrin)	Synthrin (resmethrin)
Ammo (Fury) (>.025 lb/acre) (cypermethrin)	Clutch (clothianidin)	Dursban, Eradex (chlorpyrifos)	Karate	Proaxis (gamma- cyhalothrin)	Talstar
Apollo, Ovation (clofentezine)	Commodore (lambda- cyhalothrin)	Ectrin (fenvalerate)	Lannate D (methomyl)	Proclaim (emamectin)	Tameron (methamidophos)
Arsenicals	Curacron (profenofos)	Ekamet (etrimphos)	Lindane	Provado (imidacloprid)	Temik (aldicarb)
Asana (esfenvalerate)	Cygon (dimethoate)	Endigo (spiroadiclofen)	Lorsban (chlorpyrifos)	Pydrin (fenvalerate 0.1 lb/A) ²	TEPP
Avaunt (Advion) (indoxacarb)	Cymbush	EPN	Malathion (Malathion G)	Trimax	Vapona (dichlorvos)
Avid (avermectin)	Cythion (malathion)	Ethyl guthion (azinphos-ethyl)	Matacil (aminocarb)	Proclaim (emamectin)	Venom (dinotefuran)
Azodrin (monocrotophos)	Danitol (fenopropathin)	Famphos (famphur)	Mesuroi (methiocarb)	Pyramite	Warrior (lambda- cyhalothrin)
	Dasanit (fensulfothion)	Ficam (bendiocarb)	Methyl parathion	Rebelate (dimethoate)	Zectran (mexacarbate)
			Monitor (methamidophos)	Resmethrin	Zephyr (Agri-Mek) (abamectin)
			Nexter (pyridaben)		

¹Can be applied to ground in front of beehives for the control of small hive beetles.

²Can be applied in the late evening at rate of 0.1 lb/A or less.

³Some formulations of Sevin XLR are rated as moderately toxic.

Group II. Moderately Toxic

These can be used around bees if dosage, timing, and method of application are correct, but should not be applied directly on bees in the field or at the colonies.

Abate (temophos)	Calypso (thiacloprid)	Decis, Battalion (deltamethrin)	Korlan (ronnel)	Perthane (ethylan)	Trigard (cyromazine)
Acramite, Floramite (bifenazate)	Carzol (formetanate)	Di-Syston (disulfoton)	Larvin (thiocarb)	Pirimor (pirimicarb)	Thimet (phorate) ²
Agritox (trichloronate)	Chlordane	Dyfonate (fonofos)	Metasystox (demeton-s-methyl)	Pyramat	Thionex (endosulfan)
Assail (acetamiprid)	Ciodrin (crotoxyphos)	Elgetol (dinitrocresol)	Metasystox R (oxydemeton-methyl)	Rhonthane (RDE)	Trithion, Thiodan (carbophenothion)
Banol (carbanolate)	Coumaphos ¹ (Agridip, Asunthol)	endrin	Mocap (ethoprop)	Rimon, Pedestal (novaluron)	Vydate (oxamyl)
Bolstar (sulprofos)	Counter (terbufos)	Esteem (pyriproxyfen)	Oil sprays (superior type)	SpinTor, Conserve SC, Entrust, Success (spinosad)	
	Croneton (ethiofencarb)	Ethodan (Ethion)		Systox (demeton)	

¹Checkmite (coumaphos) strip can be used in beehives to treat for varroa mites and small hive beetles.

²Thimet EC should only be applied during late evening.

Group III. Relatively Nontoxic

These can be used around bees with a minimum of injury

Acaraben (chlorobenzilate)	Calypso (thiacloprid)	Ethrel (ethephon)	Mavrik (fluvalinate) ¹	Pyrellin (rotenone/ pyrethrin)	Surround (kaolin)
Acarol (bromopropylate)	Chlorantraniliprole	Esteem (pyriproxyfen)	methoxychlor (Marlate)	pyrethrum (natural)	Talus (buprofezin)
Agri-Mek (ivermectin)	Chloroparacide (chlorbenside)	Fujimite, Akari (fenpyroximate)	Mitac (amitraz)	rotenone	Tedion (tetradifon)
Allethrin	Confirm, Mimic (tebufenozide)	Fulfill (pymetrozine)	Morocide (binapacryl)	ryania	tetram
Altosid (methoprene)	Cyd-X (CM granulovirus)	Fundal, Galecron (chlordimeform)	Murvesco (fenson)	Rynaxypyr (chlorantranilip- role)	Tetrasan
Amitraz	cyrolite	<i>Heliothis polyhe- drosis</i> virus	Neemix, Align (azadirachtin)	sabadilla	Tokuthion (prothiophos)
Apollo, Ovation (clofentezine)	Delnav (dioxathion)	Herculex	Neotran	Saphos (menazon)	Torak (dialifor)
Applaud, Centaur (buprofezin)	Demize (D-Limonene)	Hexygon	nicotine	Savey, Onager (hexythiazox)	Trigard (cyromazine)
Aza-direct (azadirachtin)	Dessin (dinobuton)	Intrepid (methoxyfenozide)	Omite (propargite)	Shuttle	Vendex (fenbutatin oxide)
Baam (amitraz)	Dimilin (diflubenzuron)	Isomate	Ovotran (ovex)	Smite (sodium azide)	Yieldgard
<i>Bacillus thuringiensis</i> (Accoate, Biotrol, Dipel, Thuricide)	Dinocap (Karathane)	Kanemite (acequinocyl)	Pentac (dienochlor)	Spur (fluvalinala)	Zeal (etoxazole)
Birlane (chlorfenvinphos)	Dylox (trichlorfon)	Kelthane (dicofol)	Plictran [mitacid] (cyhexatin)	Sucrocide (sucrose octano- ate esters)	
	Endeavor	Mach 2 (halofenozide)	Pynamin		

¹Fluvalinate is used in Apistan strips to treat beehives for varroa mites. It is illegal to use Mavrik in hives.

Fungicides

As a general rule, fungicides are safe to use around honey bees.

Afugan (pyrazophos)	copper oxychloride sulfate	Dithane D-14 (nabam)	Hinosan (edifenphos)	Mylone (dazomet)	Syllit (dodine)
Arasan (thiram)	copper sulfate cupric hydroxide (Kocide)	Dithane M (maneb, manzeb)	Indar (butrizol)	Phygon (dichlone)	Terraguard ¹ , Procure (triflumizole)
Bayleton (triadimefon)	Cyprix (dodine)	Dithane Z (zineb)	Karathane Lesan (fenaminosulf)	Plantvax (oxycarboxin)	Thiram
Benlate (benomyl)	Daconil (chlorothalonil)	Du-Ter (fentin hydroxide)	Maneb	Polyram (metiram)	Thylate
bordeaux mixture	Dessin (dinobuton)	Dyrene (anilazine)	Mancozeb	Ridomil	Vitavax (carboxin)
Bravo (chlorothalonil)	Difolatan (captafol)	ferbam	Morestan (oxythioquinox)	Rovral (iprodione) ²	Zerlate (Ziram)
Captan		Glyodin	Morocide (binapacryl)	sulfur	Zineb
copper oxides					

¹ May increase the toxicity of neonicotinoid insecticides to honeybees if used together.

² May cause loss of honeybee larvae. Use with caution where bees are foraging.

Herbicides, Defoliants and Dessicants

2,4-D	Basagran (bentazon)	DSMA	Hoelon (diclofop-methyl)	Mylone (dazomet)	Ronstar (oxadiazon)
2,4-DB		Dual (metolachlor)	Hyvar (bromacil)	Nortron (ethofumesate)	Sancap (dipropetryn)
2,4-DP (dichlorprop)	Betanal AM (bentanex)	Endothall (endothall)	IPC (propham)	Paarlan (isopropalin)	Sencor (metribuzin)
Alachlor	Bladex (cyanazine)	Eptam	Karmex (diuron)	paraquat	Sinbar (terbacil)
Alanap (naptalam)	Blazer (acifluorfen)	Evik (ametryn)	Kerb (proamide)	Pendimethalin (Prowl)	Surflan (oryzalin)
Alopex (clofop-isobutyl)	cacodylic acid	Evital (norflurazon)	Lasso (alachlor)	Phenmedipham (Betanal)	Sutan (butylate)
Amiben (chloramben)	Cambilene (2,3,6-TBA)	Exhalt 800	Lorox (linuron)	Pramitol (prometone)	Telvar (monuran)
Amitrol	Caparol (prometryn)	Folex (desmedipham)	MCPA	Princep (simazine)	Tolban (profluralin)
Ammate	Chloro-IPC (chlorpropham)	Garlon (triclopyr)	Methar, DSMA	Probe (methazole)	Tordon (picloram)
Atrex (atrazine)	Cotoran (fluometuron)	Glyphosate	Milogard (propazine)	Prowl (pendimethalin)	Treflan (trifluralin)
Avenge (difenzoquat)	Daconate (MSMA)	Gramoxone (paraquat)	Modown (bitenox)	Pyramin (chloridazon)	Vegadex
Balan (benefin)	dalapon	Herbisan (EXD)	MSMA	Ramrod (propachlor)	Zorial (norflurazon)
Banvel (dicamba)	diquat			Radox	