

Insecticide Tables

This table includes selected information about the insecticides recommended in this guide. The products are listed alphabetically by **Active Ingredient**, with a selection of **Trade Names**.

- = indicates that small package and ready-to-use formulations are commonly available at hardware stores and garden centers
- * = indicates that some formulations may be Restricted Use Pesticides (RUP) and require a certification to purchase and use
- † = indicates biorational formulations that may be listed by the Organic Materials Research Institute (OMRI) and may be allowed in organic production – check with your certifier
- ‡ = indicates additional formulations that do not currently occur elsewhere in this guide as crop protection recommendations because they are not as well understood to be effective options

The **Signal Word** is an indication of the human health hazard of the product.

The **Greenhouse Use** and **Chemigation Use** columns have one of four listings:

- yes* = the product label explicitly allows the use
- some* = the product label explicitly allows the use for certain crops (see the label for details), or certain Trade Names allow complete or partial use
- no* = the product label explicitly prohibits the use
- silent* = the product label does not mention the use — states decide if such uses are allowed

The **Respirator Use** column has one of the following listings:

- no* = a respirator is not required PPE
- yes* = a respirator is required for some part of the process (see label for details)
- some* = certain Trade Names may require respirators, but others may not

The **Bee Precaution** column uses the following listings:

- I* = Toxic to honey bees. Do not apply to plants that are flowering, or water puddles.
- II* = Toxic to honey bees. Do not apply to plants that are flowering, or water puddles, except at dusk
- III* = No bee precaution, except when required by the pesticide label or regulations
- a* = Toxic to honey bee brood
- b* = Toxic to other bee species

Active Ingredients	Trade Names	Signal Word	Greenhouse Use	Chemigation Use	Respirator Use	Bee Precaution
*1,3-dichloropropene	Telone II, Telone EC	warning, danger	no	some	yes	II a
*1,3-dichloropropene, chloropicrin	Telone C-17, Telone C-35	danger	no	no	yes	II a
*abamectin	Agri-Mek SC, Abba Ultra	warning	some	no	no	I b
*abamectin, *zeta-cypermethrin	Gladiator	caution	silent	no	no	I b
acephate	Bracket 97, Orthene 97	caution	no	some	yes	I b
acequioncyl	Kanemite 15SC, Shuttle 15SC	caution	some	no	no	III
acetamiprid	Assail 30SG, Assail 70WP, Tristar 8.5SL	caution	some	some	some	II b
afidopyropen	Sefina Inscalis, Versys Inscalis	caution	no	some	no	-
‡† allyl isothiocyanate	Dominus	danger	yes	some	yes	-
†azadirachtin	Aza-Direct, AzaGuard, AzaSol, Azatin O, Azatrol EC, Ecozin Plus 1.2 ME, Neemix, Molt-X	caution	yes	some	no	II
†azadirachtin, pyrethrins	Azera	caution	yes	some	yes	I b
◦† <i>Bacillus thuringiensis kurstaki</i> strain ABTS-351	Biobit HP, DiPel DF, DiPel ES, LEAP ES	caution	some	some	yes	III
† <i>Bacillus thuringiensis kurstaki</i> strain EVB-113-19	BT NOW	caution	yes	some	yes	III
◦† <i>Bacillus thuringiensis kurstaki</i> strain SA-12	Deliver	caution	some	no	yes	III
† <i>Bacillus thuringiensis aizawai</i> strain ABTS-1857	XenTari	caution	some	some	yes	II a b

Active Ingredients	Trade Names	Signal Word	Greenhouse Use	Chemigation Use	Respirator Use	Bee Precaution
‡† <i>Beauvaria bassiana</i> strain ANT-03	BioCeres WP, balEnce	caution	yes	some	yes	II b
‡† <i>Beauvaria bassiana</i> strain GHA	BotaniGard ES, BotaniGard MAXX, Mycotrol ESO, Mycotrol WPO	caution	yes	some	yes	II b
*beta-cyfluthrin	Baythroid XL	warning	silent	some	yes	I
bifenazate	Acramite 50WS, Floramite	caution	some	some	no	II b
°*bifenthrin	Bifenture EC, Brigade WSB, Capture LFR, Discipline 2EC, Sniper	caution, warning	some	some	no	I b
*bifenthrin, *abamectin	Athena	caution	silent	no	no	I b
*bifenthrin, <i>Bacillus amyloliquefaciens</i> strain D 747	Ethos 3D	warning	silent	no	yes	I b
*bifenthrin, *zeta-cypermethrin	Hero, HERO EW, Steed	caution, warning	silent	some	no	I b
† <i>Burkholderia spp.</i> strain A396	BioST Nematicide 100, Majestene, Venerate	caution	yes	some	yes	II
°carbaryl	Sevin 4F, Sevin XLR	caution	silent	some	some	I b
‡†capsaicin, garlic oil, canola oil	Captiva	caution	yes	silent	no	II
chlorantraniliprole	Coragen	caution	no	some	no	III
chlorantraniliprole, *lambda-cyhalothrin	Besiege	warning	no	some	no	I b
‡chlorothoxyfos, bifenthrin	Index, SmartChoice HC	warning, danger	silent	no	some	I b
† <i>Chromobacterium subsugae</i> strain PRAA4-1	Grandevo	caution	yes	some	yes	II
clothianidin	Belay, Poncho	caution	silent	some	no	I b
°‡†cottonseed oil, clove oil, garlic oil	Mite-X	caution	yes	silent	no	II
cyantraniliprole	Exirel, Verimark	caution	some	some	no	-
cyantraniliprole, *abamectin	Minecto Pro	warning	some	no	no	I b
cyclaniliprole	Harvanta	caution	no	some	no	-
cyflumetofen	Nealta	caution	no	no	no	-
°*cyfluthrin	Tombstone (2EC)	danger	silent	some	yes	I b
*cypermethrin	Ammo 2.5EC, Holster, Up-Cyde 2.5EC	caution, warning	silent	some	no	I b
cyromazine	Trigard	caution	no	no	no	II b
°‡†diatomaceous earth	Celite 610, Deadzone	caution	silent	silent	yes	-
*diazinon	Diazinon AG500, Diazinon AG600 WBC	caution	no	some	yes	I b
dicofol	Dicofol 4E	caution	silent	no	yes	III
dimethoate	Dimethoate 2.67EC, Dimethoate 400, Dimethoate 4EC	warning	some	some	yes	I b
dinotefuran	Safari 20 SG, Scorpion 35SL, Venom 70SG	caution	some	some	no	I ab
*emamectin benzoate	Proclaim	caution	no	no	yes	I b
*esfenvalerate	Asana XL, S-FenvaloStar	warning	silent	some	no	I b
*ethoprop	Mocap 15G, Mocap EC	danger	silent	some	yes	II b
*fenpropathrin	Danitol 2.4EC	warning	silent	no	no	I b
*fipronil	Regent 4SC	warning	silent	no	yes	I b
flonicamid	Beleaf	caution	some	some	no	III b
flusulfone	Nimitz	caution	silent	some	no	-
flupyradifurone	Sivanto 200, Sivanto Prime	caution	silent	some	no	II
† <i>Helicoverpa armigera</i> nucleopolyhedrovirus strain BV-0003	Helicovex	caution	yes	some	yes	-
‡† <i>Helicoverpa zea</i> nucleopolyhedrovirus	Gemstar LC	caution	silent	some	yes	III
hexythiazox	Onager Optik, Hexygon	caution	some	some	no	II b
°imidacloprid	Admire Pro, Mantra 60WSP, Marathon 60 WP, Nuprid	caution	some	some	no	I ab
indoxacarb	Avaunt	caution	some	some	no	I b
°†iron phosphate	Sluggo 1B	caution	yes	silent	no	-
‡† <i>Isaria fumosorosea</i> Apopka strain 97	Preferal	caution	yes	some	yes	II

Insecticide Tables

Active Ingredients	Trade Names	Signal Word	Greenhouse Use	Chemigation Use	Respirator Use	Bee Precaution
‡‡kaolin clay	Surround WP	caution	yes	no	yes	III
°*lambda-cyhalothrin	Grizzly Too, Lambda-Cy IEC, Warrior II	warning	silent	some	no	I b
°malathion	Malathion 5, Malathion 57, Malation 8	caution, warning	some	some	no	I b
metaldehyde	Deadline Bullets, Deadline GT, Deadline M-Ps, Durham 3.5G	caution	silent	silent	no	III
*metam potassium	K-PAM HL, Sectagon K54	danger	no	some	yes	III
*metam sodium	VAPAM HL, Sectagon K42	danger	no	some	yes	III
methomyl	Lannate LV, Lannate SP, Nudrin LV, Nudrin SP	danger	silent	some	yes	I b
methoxyfenozide	Intrepid 2F	caution	some	some	no	II
°‡‡mineral oil	Purespray Green, SuffOil-X, Tri-Tek	caution	some	no	no	-
°‡‡neem oil	ECOWORKS EC, Rango, TerraNeem EC, Triact 70, Trilogy	caution	some	no	no	II a
*oxamyl	Vydate C-LV, Vydate L	danger	silent	some	yes	I b
‡‡ <i>Paecilomyces lilacinus</i> strain 251	MeloCon WC	caution	silent	some	yes	-
‡‡paraffinic oil	JMS Stylet Oil	caution	yes	no	no	-
°*permethrin	Perm-Up 25DF, Perm-Up 3.2EC, Pounce 25 WP	warning	silent	some	no	I b
*phorate	Thimet 20G	danger	silent	silent	yes	III b
°piperonyl butoxide, pyrethrins	EverGreen Pro, Pyrenone	caution	yes	some	yes	I b
°‡potassium salts of fatty acids	Des-X, KOPA, M-Pede	warning	yes	no	no	-
‡‡potassium silicate	Carbon Defense, Sil-Matrix	caution	yes	some	no	-
°‡pyrethrins	Pyganic	caution	yes	some	no, yes	I b
pymetrozine	Fulfill	caution	silent	some	no	II
pyrifluquinazon	PQZ	caution	silent	no	no	-
pyriproxyfen	Distance, Knack	caution	some	some	no	II ab
‡‡rosemary oil, geraniol, peppermint oil	Ecotrol Plus	warning	yes	silent	no	III
spinetoram	Radiant 1SC	caution	no	some	no	II
°‡spinosad	Blackhawk, Entrust, Entrust SC, Regard SC	caution	some	some	some	II b
spiromesifen	Oberon 2SC	caution	silent	some	no	II a
spirotetramat	Movento, Kontos	caution	some	some	no	II ab
sulfoxaflor	Closer SC, Transform	caution, danger	some	some	no	I
tebufenozide	Confirm 2F	caution	silent	some	no	II a
*tebupirimphos, cyfluthrin	Aztec 4.67G, Aztec HC	warning	silent	silent	yes	I b
*tefluthrin	Force CS, Force Evo, Force 3G, Force 10G HL	caution, warning	silent	silent	no	-
*terbufos	Counter 20G	danger	silent	silent	yes	-
thiamethoxam	Actara, Cruiser 5FS, Flagship 25WG, Platinum 2SC	caution	some	some	no	I b
thiamethoxam, chlorantraniliprole	Durivo, Voliam Flexi	caution	no	some	no	I b
thiamethoxam, *lambda-cyhalothrin	Endigo ZC	warning	no	some	no	I b
tolfenpyrad	Torac	warning	silent	some	no	III b
°*zeta-cypermethrin	Mustang Maxx	warning	silent	some	no	I

Small package hardware and garden center insecticides

This table includes additional pesticides that you may find readily available at hardware stores and garden centers in smaller quantities. The products are listed alphabetically by **Active Ingredient**, with a selection of **Trade Names**. RTU = Ready-To-Use without dilution. RTS = Ready-To-Spray with hose-end container.

† = indicates biorational formulations that may be listed by the Organic Materials Research Institute (OMRI) and may be allowed in organic production

‡ = indicates additional formulations that do not currently occur elsewhere in this guide as crop protection recommendations because they are not as well understood to be effective options

Active Ingredients	Trade Names	Brands
† <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain ABTS-351	Dipel Dust, Thuricide Bt Caterpillar Control	Southern Ag
† <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> strain SA-12	Captain Jack's Bt <i>Bacillus thuringiensis</i> RTU, Thuricide <i>Bacillus thuringiensis</i> (BT)	Bonide
bifenthrin	Eight Flower & Vegetable Soil Insect Granules	Bonide
carbaryl	Carbaryl 5% Dust	Southern Ag
carbaryl	Sevin 5 RTU dust, Sevin RTU liquid	GardenTech
‡†cottonseed oil, clove oil, garlic oil	Mite-X RTU	Bonide
cyfluthrin	Tomato & Vegetable Insect Killer RTU	BioAdvanced
‡†diatomaceous earth	Diatomaceous Earth Crawling Insect Killer	Bonide
gamma-cyhalothrin	Triazicide Insect Killer for Lawns & Landscapes Concentrate	Spectracide
imidacloprid	Fruit, Citrus & Vegetable Insect Control Concentrate	BioAdvanced
†iron phosphate	Captain Jack's Slug Magic	Bonide
†iron phosphate, spinosad	Captain Jack's Bug & Slug Killer	Bonide
lambda-cyhalothrin	Eight Garden & Home RTU	Bonide
lambda-cyhalothrin	Triazicide Insect Killer for Lawns & Landscapes RTU	Spectracide
malathion	Malathion 50% EC	Southern Ag
malathion	Malathion Insect Control	Bonide
malathion	Malathion Insect Spray Concentrate	Spectracide
‡†mineral oil	All Seasons Horticultural Oil Concentrate, RTU and, RTS	Bonide
‡†mineral oil	Parafine Horticultural Oil	Southern Ag
‡†neem oil	Neem Concentrate, RTU	Fertilome
‡†neem oil	Neem Oil Concentrate, RTU	Bonide
‡†neem oil	Triple Action Neem Oil	Southern Ag
permethrin	Eight Insect Control Garden Dust	Bonide
permethrin	Eight Insect Control Vegetable Fruit & Flower Concentrate, Yard & Garden RTS	Bonide
permethrin	Permetrol Lawn Insecticide, Garden Insect Dust RTU	Southern Ag
permethrin, myclobutanil	Immunox 3-in-1 Insect and Disease Control Plus Fertilizer for Gardens RTU	Spectracide
‡†potassium salts of fatty acids	Insecticidal Soap RTU	Bonide
‡†potassium salts of fatty acids, spinosad	Insecticidal Super Soap RTU	Bonide
‡†pyrethrins, neem oil	Triple Action Concentrate, RTU	Fertilome
pyrethrins, piperonyl butoxide	Pyrethrin Garden Spray Concentrate, Japanese Beetle Killer RTU	Bonide
pyrethrins, piperonyl butoxide	Pyrethrin Concentrate	Southern Ag
pyrethrins, piperonyl butoxide	Triazicide Insect Killer for Landscapes and Gardens Outdoor Fogger	Spectracide
‡pyrethrins, piperonyl butoxide, neem oil	Bon-Neem II RTU	Bonide
‡pyrethrins, piperonyl butoxide, neem oil	Fruit Tree Spray with Neem Py	Fertilome
‡†pyrethrins, sulfur	Captain Jack's Orchard Spray Concentrate, Tomato & Vegetable 3-in-1 RTU, RTS	Bonide
†spinosad	Captain Jack's Dead Bug Brew Concentrate, RTS, RTU, Dust, Colorado Potato Beetle Beater	Bonide
†spinosad	Conserve Naturalyte Insect Control	Southern Ag
zeta-cypermethrin	Sevin Insect Killer Concentrate, RTU	GardenTech
zeta-cypermethrin, bifenthrin	Sevin Insect Killer Lawn Granules	GardenTech

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