

GREENHOUSE INSECT PEST and MITE CONTROL (2015)

Adequate ventilation is critical for greenhouse pesticide use. It is especially important to follow the re-entry intervals listed on the labels for worker safety. Always read and fully understand the label before using any pesticide in a greenhouse environment.

Yellow sticky traps are very effective in catching winged aphids, leafminer, thrips, whiteflies, fungus gnats and shore flies. Both blue and yellow traps are effective, and can be hung vertically just above the plant canopy as well as the growing medium surface. It is also helpful to hang traps near doors and side vents, or other areas where insects may enter or exit the greenhouse. It is suggested that at least 1 trap be used per 1,000 sq. ft.

Table E-11. Insecticides and Miticides Labeled for Use on Greenhouse* Vegetables

Product active ingredient, product name(s), and (IRAC Classification)	Target Pests	Labeled Crops	Days to Harvest and (REI [hrs])	Comments
acequinocyl (Shuttle O, Kanemite 15SC) (20B)	Two spotted spider mites, broad mites	Fruiting vegetables, cucurbits	1 (12)	Use at least 100 gal of water/A Maximum of 2 applications per year; No surfactant or adjuvant use. Allow 21 days between treatments
acetamiprid (TriStar 30SG) (4)	Aphids, leafhoppers, mealybugs, caterpillars, plant bugs, whiteflies, fungus gnat larvae, thrips, beetles, leafminers	Leafy vegetables, fruiting vegetables, cole crops, cucurbits, onions & bulb vegetables	7 (12)	For vegetables grown as transplants only. Treat small area to test for phytotoxicity first.
azadirachtin (Azatin XL, Azatrol EC, Neemix, Ornazin, Azahar, Aza-Direct) (18b)	Immature stages of whiteflies, aphids and other listed insects; fungus gnat larvae (as soil drench)	Most vegetables including fruiting vegetables and cucurbits, herbs/spices and others	0 (4; 12 for Neemix & Ornazin)	Botanical insect growth regulator); some products OMRI-listed. Spray water pH should be between 5.5 and 6.5. May be applied via a chemigation system.
Bacillus thuringiensis var <i>aizawai</i> (XenTari, Agree) (11)	Armyworms, beet armyworm, cabbage looper, tomato fruitworm,	Most vegetables including fruiting vegetables and cucurbits, herbs/spices and others	0 (4)	Lepidopteran larvae only – most effective against early instars.
Bacillus thuringiensis var <i>israelensis</i> (Gnatrol) (11)	Fungus gnats (larvae only)	All vegetables	0 (4)	Drench. Repeat applications may be needed.
Bacillus thuringiensis var <i>kurstaki</i> (DiPel, Javelin, Deliver) (11)	Armyworms, beet armyworm, cabbage looper, tomato fruitworm,	Most vegetables including fruiting vegetables and cucurbits, herbs/spices and others	0 (4)	Lepidopteran larvae only – most effective against early instars.
Beauveria bassiana strain GHA (Mycotrol O, BotaniGard ES, BotaniGard WP) (NA)	Aphids, thrips, whiteflies, certain other pests	All vegetables, herbs/spices and others	0 (4)	Slow acting, fungus infects insects. Repeat applications at 5-10 day intervals may be needed. Note storage and other restrictions. Mycotrol is OMRI-listed. Do not use BotaniGard ES on tomatoes.
bifentazate (Floramite SC) (25)	Spider mites, clover mites	Tomatoes	3 (12)	No more than 2 applications/crop/season for tomatoes that are greater than 1” in diameter at maturity. Maintain spray water pH 5.5 – 6.5. Do not use an adjuvant.
buprofezin (Talus 40SC) (16)	Leafhoppers, mealybugs, whiteflies	Tomatoes	1 (12)	Insect growth regulator for immature stages only. Maximum 2 apps/season at least 5 days apart. Will reduce egg viability.

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chlorfenapyr (Pylon) (13)	Caterpillars, spider mites (<i>Tetranychus</i> spp.), broad mites, western flower and melon thrips.	Tomato, tomatillo, ground cherry, peppers, eggplant, pepinos	0 (12)	Do not use on tomato varieties with mature fruit less than 1 inch in diameter. No more than 3 applications per crop.
cyantraniliprole (Exirel) (28)	Thrips, Whitefly	Tomato, eggplant, peppers	1 (12)	For whitefly add effective adjuvant. Only suppresses thrips
cyromazine (Citation) (17)	leafminers, fungus gnats, shore flies	Only for vegetable transplant production grown for consumers	7 (12)	Do not apply within 7 days of shipping to market. No more than 6 applications per crop.
dinotefuran (Safari 20 SG) (4)	Aphids, leafminers, mealybugs, whiteflies	Cucurbits, fruiting vegetables, head and stem brassicas, leafy vegetables	1 (all but leafy) 7 (leafy) (12)	One application/crop. For vegetable transplants only. May be applied via a chemigation system.
etoxazole (TetraSan 5WDG) (10B)	Spider Mites	Tomatoes only	1 (12)	Do not make more than 2 applications per season. Do not use with an adjuvant.
fenpyroximate (Akari) (21A)	Two spotted spider mites (suppresses whiteflies)	Cucumbers	7 (12)	One application per growing season. Do not use adjuvants.
flonicamid (Beleaf 50 SG) (9C)	aphids, plant bugs, GH whitefly	Cucumbers	0 (12)	Allow a minimum of 7 days between applications. Whitefly suppression only
hexythiazox (Onager miticide 1EC) (10A)	Twospotted spider mites, European red mites	Tomatoes	1 (12)	Do not make more than 1 application per year
iron phosphate (Sluggo-AG) (Escar-Go)	Slugs and snails	All vegetables	0 (0)	OMRI-listed. Bait; scatter around plants or perimeter of plantings.
imidacloprid (Marathon) (4)	Aphids, fungus gnat larvae, leafhoppers, whiteflies, others	Cole crops, collards, kale, kohlrabi, lettuce, mustard greens, pepper, tomato, eggplant.	- (12)	Use on vegetable plants intended for resale only. May be applied via a chemigation system.
imidacloprid (Admire PRO) (4)	Aphids, whiteflies	Tomato and cucumber only in production greenhouses.	0 (12)	Do not apply to plants growing hydroponically or in rock wool, perlite or other soil-less mix; only for plants growing in field soil, potting media or mixes. May be applied as drench or chemigation system. Label notes possible repellent effect on bumblebees and some beneficials (<i>Orius</i> sp.)
malathion (Gowan Malathion 8F) (1)	Japanese beetles, thrips, onion maggots	Succulent beans, cucumbers, eggplant, lettuce, green and bulb onions, sweet corn, tomatoes (crops vary depending on mfg. label)	1-7 (12)	See label for specific crops. May be applied through a chemigation system.

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paraffinic oils (Sunspray Ultra-fine SuffOil-X) (N/A)	Aphids, two spotted spider mites, leafminers, thrips, whitefly	Many, tomato, pepper, lettuce, cucurbits, radish, squash, herbs, spices	1 (4)	Do not exceed 4 applications a growing season. Allow 2 weeks between applications.
potassium salts of fatty acids (insecticidal soap) (M-Pede) (N/A)	Aphids; leafminer; spider, broad and russet mites; thrips; whiteflies; plant bugs; leafhopper; powdery mildew (cucumber only)	Many vegetables (see label for specifics), herbs/spices	0 (12)	Works well on whiteflies, mites and aphids if coverage is good but has no residual control. Note label cautions about application frequency, water quality and tank mixing. OMRI-listed
pyrethrins (Pyrenone Crop Spray, Pyronyl Crop Spray, PyGanic, Pyrethrum PT) (3a)	All	All vegetables, herbs/spices	0 (12)	Pyrenone and Pyronyl include PBO synergist; PyGanic is OMRI-listed.
pyriproxyfen (Distance) (7c)	Whiteflies, aphids, fungus gnats, shoreflies	Fruiting vegetables (except non-bell peppers)	1 (12)	Insect growth regulator. Do not use on tomato varieties with mature fruit less than 1 inch in diameter.
rosemary oil + peppermint oil (Ecotec)	Aphids, beetles, mites, thrips, plant bugs, others	Many vegetables, herbs/spices	0 (0)	OMRI-listed. Can be applied in drip for soil pests.
spirotetramat (Kontos) (23)	Aphids, leafhoppers, mealybugs, psyllids, spider mites, spittlebugs, whiteflies	Vegetable transplants only (see label for list)	- (24)	Apply as drench or via an irrigation system to plants in containers. Not for use in vegetable production.
thiamethoxam (Flagship 25WG) (4a)	Whiteflies, leafhoppers, Colorado potato beetle, stinkbugs	Fruiting vegetables and cucurbits	- (12)	ONLY use for vegetable transplants intended for resale

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