Vegetable Insect Control Recommendations for Home Gardens

Fact Sheet FS1123



Cooperative Extension

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Insect Pest Management

Home vegetable gardeners will find more than two dozen major insect and mite pests that attack various vegetable crops and damage them by feeding directly on the foliage and fruit or by transmitting plant diseases. Some insect pests are serious problems every year, while others rarely appear in the garden. There are also many insects which are beneficial and, in several instances, essential to vegetable production in the home garden. Rutgers NJAES Fact Sheet FS295 "Beneficial Insects of the Home Garden," may be of help in identification of these beneficial organisms.

Frequent monitoring of the garden to detect problems at an early stage will allow you to prevent or reduce insect damage. However, for effective monitoring, the homeowner must know where and when to look for insect pests and be able to identify those that are found. Without proper identification, pest management is impossible.

Keys to Effective Management

1. Thoroughly inspect plants at regular and frequent intervals to monitor any potential pest buildup. It is suggested to scout the garden at least twice weekly. Inspect plants from the bud to the soil, including both upper and lower leaf surfaces.
2. Rotate the garden plot as often as possible. If the same plot is used more than one season, rotate the crops within the garden. Garden rotation is highly effective in reducing soil insect and disease problems.
3. Plow or turn the soil well in advance of planting. The garden should be well plowed and free of weeds, grass, etc., at least 30 days before planting.
4. Transplants should be purchased from a reputable dealer and should be free of insect pests and disease at time of planting.
5. A healthy plant is often able to outgrow insect and disease attack. Use proper fertility and watering programs to maintain plant health and vigor.
6. Learn to identify garden pests and beneficial organisms and consider chemicals only when a pest problem exists. Seek alternatives to chemical insecticides when possible.
7. Harvest fruit, seed, pods, etc., as soon as they are ripe. Allowing overripe fruit to remain on the plants often invites additional pest problems.
8. Once a plant is no longer productive, destroy it, plow it under, or remove it from the garden. DO NOT just pull it up and leave it in the garden area.
9. If you use garden vegetable plants in any form to add to a mulch bed or compost bin, ensure that the material does not harbor insects, disease organisms or nematodes that will easily survive organic decomposition and cause future problems if that mulch is used in the garden.

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Common Vegetable Insect Pests and Recommended Controls

Insect Pest	Fact Sheet #	Synthetic Pesticide Control	Organic Pesticide Control	Cultural Control
Asparagus beetle	FS 221	Carbaryl, malathion	Neem, pyrethrin	Hand picking
Aphids	FS 230, 248	Acetamiprid, malathion, pyrethroids	Beauvaria bassiana, canola oil, neem, pyrethrin	Row covers, high pressure water wash
Beetles	FS 242, 222, 292, 241, 242, 249, 243	Acetamiprid, pyrethroids	Beauvaria bassiana, B. tenebrionis, pyrethrins, spinosad	Hand picking (wear gloves)
Cabbage looper	FS 231	Carbaryl, malathion, pyrethroids	B. thuringiensis, neem, spinosad, pyrethrin,	Row covers, early planting, hand picking
Carrot weevil	FS 250	Pyrethroids	None	None
Caterpillers (corn borer, celeryworm, armyworm, melon worms, earworms, cabbage worms) see also hornworms, cabbage looper, cabbage webworms	FS 284, 286, 238, 232, 285, 239, 281, 288, 282, 283, 287	Carbaryl, malathion, pyrethroids	B. thuringiensis, neem, pyrethrin, spinosad	Netting, row covers, hand picking
Colorado potato beetle	FS 224	Acetamiprid, pyrethroids	Beauvaria bassiana, B. tenebrionis, pyrethrins, spinosad	Row covers, hand picking all stages
Cabbage webworm	FS 289	Carbaryl, malathion, pyrethroids	B. thuringiensis, neem, pyrethrin, spinosad	Hand picking
Cucumber beetles	FS 225	Carbaryl, malathion, pyrethroids	Beauvaria bassiana, neem, pyrethrins,	Row covers, hand picking
Cutworms	FS 283	Carbaryl, pyrethroids	Beneficial nematodes	Barriers
Flea beetles	FS 233	Carbaryl, acetamiprid, pyrethroids, hot pepper wax	Beauvaria bassiana, insecticide soap, neem, pyrethrins	Row covers
Hornworms	FS 226	Carbaryl, malathion, pyrethroids	B. thuringiensis, neem, pyrethrin, spinosad	Hand picking larvae
Leafhoppers, fleahoppers	FS 237, 236	Malathion, carbaryl pyrethroids	Canola oil, pyrethrins	Row covers
Leaf miners	FS 276	Pyrethroids	Spinosad	Row covers
Mexican bean beetle	FS 227	Carbaryl, malathion, acetamiprid, pyrethroids	Beauvaria bassiana, neem, pyrethrins	Hand picking all stages
Onion maggot, seedcorn maggot, cabbage maggot	FS 278, 280, 277	None available	None	Row covers
Pepper maggot	FS 279	Pyrethroids	None	None
Spider mites	FS 235	Malathion	Canola oil, insecticidal soap, pyrethrins	Water spray
Squash bugs	FS 228, 246	Carbaryl, pyrethroids,	Neem	Hand picking all stages
Stink bugs, plant bugs	FS 245, 244, 247	Carbaryl, pyrethroids, refined horticulture oil	None	Hand picking bugs and eggs, row covers
Squash vine borer	FS 229	Carbaryl, pyrethroids	Spinosad	Cut borer out of stem
Thrips	FS 291	Acetamiprid, malathion, pyrethroids	Insecticidal soap, pyrethrin, spinosad	High pressure water spray

Insect Pest	Fact Sheet #	Synthetic Pesticide Control	Organic Pesticide Control	Cultural Control
Whiteflies	FS 240	Acetamiprid, malathion, pyrethroids	Insecticide soap, canola oil, pyrethrins	Row covers

Common and Trade Names of Home Vegetable Garden Insecticides

Common Name	Trade Names	Insecticide Class
Acetamiprid	Ortho Max Flower, Fruit and Vegetable	Neonicotinoid
Bacillus thuringiensis kurstaki	Thuricide, Dipel, Safer Caterpiller Killer	Bacterial
Bacillus thuringiensis tenebrionis	Novodor	Bacterial
Beauvaria bassiana	BotaniGard	Fungus
Carbaryl	Sevin, Ortho BugGeta Plus, Garden Tech	Carbamate
Hot pepper wax	Hot Pepper Wax, Bonide Hot Pepper Wax	Botanical
Insecticidal soap	Concern Multi-Purpose Concentrate, Concern Tomato and Vegetable Insect Killer, Safer 3-in-1, NATRIA Insecticidal Soap	Potassium salts/fatty acids
Malathion	Gordon's Malathion, Spectracide Malathion	Organo-phosphate
Neem	Tomato 3-in-1, Concern Multipurpose, Neem Ready to Use	Botanical
Petroleum oil	All Seasons Hort Spray, Bonide All Seasons	Hydrocarbons
Plant oils	Ecosmart Organic Flower and Vegetable, Ecosense, Garlic MiteX, Organocide, NATRIA Multi-Insect Control	Botanical
Pyrethrins	Garden Guard, Spectracide Garden Insect Killer, Bonide Garden Dust, Yard and Garden Insect Killer, NATRIA Insect, Disease and Mite Control	Botanical
Pyrethroids	Bayer PowerForce Multi-Insect Killer, Eight Garden & Home, Ortho, TOTAL Pest Control, Bug-No-More, Ortho Bug-B-Gon, Ortho MAX, Spectracide All Vegetables, Spectracide 3X Permethrin	Synthetic pyrethroid; pyrethroids include esfenvalerate, cyfluthrin, permethrin, gamma-cyhalothrin, bifenthrin
Spinosad	Captain Jack's Deadbug Brew, Colorado Potato Beetle Beater	Fermentation by-product

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Pesticide products and formulations may change. Always follow label instructions. Check label for: number of applications allowed per season, interval between sprays, and the number of days between last spray and harvest.

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