

Organic Controls for Insects of Home Ornamentals

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Table 4.7 - Organic Control Use

Product ¹	Insects Controlled	Remarks
<i>Bacillus thuringiensis</i>	Most caterpillars, loopers, hornworms and bagworms	This product, also known as Bt, is sold under many trade names
M-One (Bt/Sandiego)	Elm leaf beetle, willow leafbeetle	This is a new strain of <i>Bacillus thuringiensis</i> , variety: <i>san diego</i> , which is particularly effective against selected beetle larvae.
Insecticidal soap	Works well on soft bodied insects in particular aphids, mites, lacebugs and mealybugs	
Rotenone	Many garden insect pests including Japanese beetles, flea beetles, aphids, weevils, leafhopper.	Usually sold as a dust, but some formulations can be mixed in water.
Pyrethrin	Broad spectrum, works on a wide variety of insects	Usually sold mixed with other botanical insecticides such as rotenone.
Pyrethrin/ Diatomaceous Earth	Whiteflies, fireants	Follow all label precautions.
Neem	Broad sprctrum	See label for precautions
Hot Pepper Wax	Aphid 1, Mite1, Thrips	See label for precautions
Spinosan	Caterpillar 1, Beetle 1	See label for precautions
Gnatrol (Bt/H-14)	Fungus gnats	Used as a soil drench
Predators ¹	Insects Controlled	Remarks
Lady beetles	Feed on aphids and other soft bodied insects	<i>Hippodamia</i> and other lady beetles are sold for controlling aphids on outdoor plantings, but they may leave to find other prey. <i>Cryptolremus</i> for mealybug, <i>Delphastus</i> for whitefly.
Lacewings	Aphids, scales, mealy bugs and other soft bodied insects	Immature lacewings are called aphidlions. Most are <i>Chrysoperla</i> .
Predatory mites	Mostly for control of spider mites.	Release approximately 2/square foot. <i>Phytoseiulus persimilus</i> will work in most situations, <i>Mesoseiulus</i> and <i>Amblyseius</i> work for greenhouse and interior scape.
Predatory nematodes	Many ground dwelling and boring insect pests	These nematodes will actively seek host prey and do not harm plants or humans. Exhibit for fungus gnats, grubs and weevils.
Parasitic wasps	Many insect pests on the foliage including caterpillars and whiteflies	<i>Trichogramma</i> wasps work well on many caterpillars. <i>Encarsia formosa</i> for greenhouse whitefly. <i>Diglyphus</i> for leafminer, <i>Aphytis</i> for armored scale.

¹Botanical insecticides are derived from various plant parts and are commonly used in organic control situations. It is important to read the label and follow all precautions regarding protective clothing, mixing and labeled plants. Just because it is derived from plants doesn't mean that safety can be disregarded. Biological control is in two major forms. Microbial, which is a formulation containing a microorganism such as *Bacillus thuringiensis*, or the other form, which involves the release of predatory insects or mites, such as lady beetles. Use caution with insecticides when a release of predators is planned. Also see the Organic and Biological Control section of the Insect Identification Laboratory homepage on the World Wide Web: <http://www.ento.vt.edu/Facilities/OnCampus/IDInfo.html>

