

Organic Controls for Insects

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Table 2.1 - Organic Products and Predators

Product ¹	Insects Controlled	Remarks
<i>Bacillus thuringiensis</i>	Most caterpillars, loopers, hornworms, bagworms	This product, also known as B.t., is sold under many trade names.
M-One, M-Track, Foil, Novodor	Colorado potato beetle	This is a new strain of <i>Bacillus thuringiensis</i> , variety: <i>san diego</i> , which is particularly effective against beetle larvae.
Insecticidal soap	Works well on soft bodied insects in particular aphids, mites, mealybugs	This product is sold under many trade names and is a fatty acid soap.
Rotenone	Many garden insect pests including Colorado potato beetle, flea beetles, aphids, weevils, Mexican bean beetles	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.
Pyrethrum/Diatomaceous Earth	Whiteflies, fireants	See label for precautions.
Neem	Broad spectrum	See label for precautions
Hot Pepper Wax	Aphids, Mites, Thrips	See label for precautions
Spinosan	Caterpillars, Beetles	See label for precautions
Predators ¹	Insects Controlled	Remarks
Bean Beetle Parasite (<i>Pediobius foveolatus</i>)	Mexican bean beetle	These wasps are shipped to you inside their host—Mexican bean beetle larvae. Once the adults emerge, the females deposit their eggs in the larvae of the Mexican bean beetle. Release rate: timing is critical; release one unit (6 mummies/unit, 20-25 wasps/mummy=120-150 wasps/unit) for every 400 sq ft of beans or 100 units/A when the bean larvae are present. These wasps do not overwinter.
Lady beetles	Feed on aphids and other soft	Lady beetles may leave the garden to find bodied insects other prey.
Lacewings	Aphids, scales, mealy bugs, other soft bodied insects	Immature lacewings are called aphid-lions. Most are <i>Chrysoperla spp.</i>
Predatory mites	Mostly for control of spider mites	Release approximately 2/ square foot. <i>Phytoseiulus persimilis</i> will work in most situations.
Predatory nematodes	Many ground dwelling and boring insect pests	These nematodes will actively seek host prey and do not harm plants or humans.
Parasitic wasps	Many insect pests on the foliage including caterpillars, whiteflies	<i>Trichogramma</i> wasps work well on many caterpillars. <i>Encarsia formosa</i> works on whiteflies.

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 they are 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 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/bughunt>

2-2 *Home Vegetables: Organic Controls for Insects*