



Home-Use Insecticides

The following list of commonly available insecticides (and miticides) is not intended to be an endorsement of the products or an exhaustive list of all products available to Utah growers. It is intended to be a resource to educate gardeners and backyard orchardists about some of the chemical formulations available to homeowners, as opposed to formulations available only to commercial producers.

A selection of brand name formulations is provided for each of the chemical common names. The materials are grouped according to chemical class. Note that some of the materials mentioned cannot be applied to bearing fruit trees. Certain materials are to be used only on ornamental trees and shrubs, while others are intended for backyard ponds or turf treatments. Remember to *always follow product label instructions* and beware of phytotoxicity caused by certain chemical combinations, especially when applied during midday heat. And of course, beware that many insecticides are neurotoxins and can be harmful to people and pets. Finally, remember that water in Utah is often both alkaline and hard (dissolved minerals, not ice), which can reduce pesticide efficacy. Consider making applications with distilled water rather than tap water.

Horticultural Oils (*kill by suffocation, among various other ovicidal and larvicidal mechanisms*)

- **Superior oil** -- Volck Spray Oil™, SunSpray Ultra-Fine™

Microbial Insecticides (*various modes of action*)

- ***Bacillus thuringiensis var. kurstaki*** – Ferti-lome Dipel Dust™, Thuricide™, Safer's Caterpillar Killer™
- **Spinosad** – Entrust™, Ferti-lome Borer, Bagworm, Leafminer and Tent Caterpillar Spray™
- ***Bacillus thuringiensis var. israelensis*** -- Mosquito Dunks™

Salts of Fatty Acids, Soaps (*cell membrane disruptors, among other insecticidal mechanisms*)

- **Insecticidal soap** -- Safer's Insecticidal Soap™, GardenSafe Insecticidal Soap™

Nicotinoid Insecticides (*acetylcholine mimics*)

- **Imidacloprid** -- Bayer Advanced Garden Tree and Shrub Insect Control™, Bayer AG All-in-One Rose and Flower Care™, Bayer Advanced Lawn Season-long Grub Control™

Organophosphate Insecticides (*acetylcholinesterase inhibitors*)

- **Malathion** -- Real Kill Malathion Spray™, Bonide Tree Fruit Spray™, Ortho Malathion Plus™
- **Acephate** -- Ortho Systemic Insect Killer™
- **Dimethoate** -- Hi-Yield Cygon 2E™

Carbamate Insecticides (*acetylcholinesterase inhibitors*)

- **Carbaryl** -- Sevin™, Bonide Tree Fruit Spray™

Pyrethroid Insecticides (*voltage-gated synaptic ion disruptors*)

- **Permethrin** -- Ortho Basic Solutions™, Hi-Yield Garden, Pet and Livestock Insect Control™
- **Pyrethrins** -- Spectracide™ (includes synergist, piperonyl butoxide), Pyganic™ (registered Organic), Ortho Rose and Flower Spray™ (includes canola oil)
- **Esfenvalerate** -- Ortho Bug-B-Gon™, Ortho Max™
- **Bifenthrin** -- Rose and Flower Spray™
- **Lambda-Cyhalothrin** -- Triazide Turf Spray™

Other Materials

- **Azadirachtin** -- GardenSafe Neem™ Concentrate, AZA-Direct™ (registered Organic)
- **Rotenone** -- Ferti-lome Rose, Flower, and Vegetable Dust™
- **Kaolin clay** -- Surround™ (registered Organic)
- **Diatomaceous Earth** -- Diatect™
- **Attract and Kill Technology** -- Last Call CM Home and Garden™ (sex pheromone of codling moth, plus permethrin and UV protectant; available at www.ipmtech.com)
- **Apple bags** -- Apple coloring bags, Japanese apple bags



For questions or comments:

Shawn A. Steffan

Extension IPM Project Leader

Dept. of Biology

Utah State University

(435) 797-0776

steffan@biology.usu.edu

For more information on the proper use of these materials, please visit the **2004 Home Orchard Pest Management Guide**, available online at:

<http://extension.usu.edu/cooperative/ipm/files/PDFDocs/2004HomeOrchardPestManagementGuide.pdf>

USU Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned, and make no endorsement explicitly or implicitly of the products or information listed herein.