

Using Safer Insecticides in the Garden

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The use of horticultural oils, and soaps, began more than 50 years ago. Back then and even today, horticultural oils were used to control scale insects in fruit trees and landscape shrubs. This method of pest control worked well when properly applied, but it was largely replaced with the use of more modern insecticides.

Today, the oils, soaps, and Bt's (*Bacillus thuringiensis* insecticides) have made a comeback and there are several good reasons why. They are relatively nontoxic to the user, are relatively safe to beneficial insects in the landscape, and upon contact, will control egg, immature and adult stages of soft-bodied pests such as aphids, thrips, whiteflies, mites, and scales. In addition, it is difficult for pests to develop

resistance to oils and soaps.

Horticultural Oils

Horticultural oil isn't just any type of oil. It is especially formulated for use on certain plants. Generally, it is a petroleum-based oil with an emulsifier added that allows it to be mixed with water. When sprayed on infested plants, it kills scales, mites, and other insects that are present by suffocation. The oil actually plugs up the insects' breathing pores. Since horticultural oil controls insects physically, rather than by poisoning them, there is little danger that they will develop resistance.

Horticultural oils are usually classified as dormant oils, summer oils, or superior oils. Dormant oils are the heaviest of the horticultural oils and are formulated for use on dormant plants. Apply these oils during dormancy but before plants enter the bud-break stage in the spring. Dormant oil effectiveness increases as temperatures become warmer in the spring and insect metabolism increases. Do not use dormant oils during the growing season unless the label specifically states that such use is safe. Summer oils are lighter than dormant oils and are formulated for use during spring and summer. Superior oils are the most refined of all petroleum oils and are excellent products for horticultural pest control in any season. These superior oil products allow greater flexibility in their use and have been tested at temperatures in the mid 90's with no damage to shrubs

Insecticidal Soaps

Thousands of soaps are manufactured from hundreds of different fatty acids and a variety of inorganic bases. However, only a few of these soaps are effective insecticides. Insecticidal soaps available today are made from potassium salt of oleic acid which is present in high quantities in olive and other vegetable oils. Insecticidal soap physically disrupts the insect's outer protective layer (cuticle) and causes the insect to dehydrate. Now that is what we call justice to those insects that are sucking the sap out of our plants!!!

Horticultural oil and soap products are readily available at local garden supply centers and nurseries. The oldest and best known oil is Volck*. Horticultural oils are sold under various descriptive names such as "dormant oil," "oil emulsion," "safety-side," "summer oil," and "superfine oil." There are several soaps available for purchase, such as Safers Insecticidal Soap and M-Pede.

Through spray coverage is essential when using oils, and soaps. Since these products are not poisons and must

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contact the pest, all plant surfaces, tops and bottom sides of leaves and stems must be coated with spray for best results.

Bt.'s

Another environmentally friendly product for controlling caterpillars is Bt, which stands for (*Bacillus thuringiensis*). Bt (stomach poison) is an insecticide for use only against caterpillars (larvae of lepidopterous insects). Bt should be used when the caterpillars are young. The caterpillar must ingest the Bt for it to be effective. After ingesting a lethal dose of Bt the caterpillar stops feeding within an hour and will die within several hours to days. Before dying, the caterpillar will become sluggish, discolor, then shrivel, blacken, and die. Even more justice!!! Bt can be found under several brand names such as Dipel, Thuricide, and Sok-Bt.

Though horticultural oils, soaps, and Bt.'s are less toxic than many insecticides, it is important to use them with caution. Read and follow the label carefully.

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Photo: scale insects.jpg, Brisbane Insects and Spiders Home Page Oils and soaps are very useful, and relatively safe, insecticides for controlling sucking insects such as these scale insects.

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