



Using Insecticidal Soap in Your Home Garden or Landscape

Dan Gilrein, IPM Specialist
Cornell Cooperative Extension

Insecticidal soaps are among the safest choices available for controlling pest problems in your garden or on your ornamental plants. Insecticidal soaps are made up of long chain fatty acids with potassium salts. They are specially formulated and tested. Household soap or dish soap is **not** insecticidal soap.

Insecticidal soaps control many pests, including adelgids, aphids, mealybugs, whiteflies, mites and other small soft bodied insects, on a wide variety of food and ornamental plants. If you are interested in using insecticidal soap or have ever had problems with it, here are a few guidelines you can follow for best results.

Insecticidal soap only works on contact, meaning the spray solution must coat the pest you are trying to control. Once the spray has dried, a moving insect will not be harmed by walking over the residue. Coverage, therefore, is extremely important. For example, spraying the upper leaf surface will leave whiteflies alive and healthy, since they usually feed under the leaves. The immature stages move little or not at all, and will not be killed by contact with the wet material.

Spray only when and where an infestation appears, and not as a preventive measure. Symptoms such as leaf or shoot distortion, sooty mold and holes in leaves require some further looking to actually see the cause and the extent of an insect infestation. Once you find

the pest, treat only those plants or spots with the problem. Some pests, such as aphids, can sometimes be found on a single shoot and sometimes throughout a planting. Identify the pest and where it is before spraying!

Watch for phytotoxicity, an adverse plant reaction or injury from the soap treatment. Symptoms on foliage include yellow or brown spot

ting, "burned" tips, and/or yellow or brown scorching on the leaf edges. Soap spray may also cause marking on some pome fruit (apple, pear, etc.) and stone fruit varieties. Phytotoxicity is perhaps the greatest concern most people have when using insecticidal soap. However, by observing a few points you can decrease your chances for plant injury:

1. Don't treat plants under drought or other kinds of stress. Stressed plants may be especially intolerant of insecticidal soap solution. Make sure plants to be treated are well-watered and look healthy. Conifers, in particular, are more susceptible when under drought stress. Newly planted ornamentals, transplants, and unrooted or newly rooted cuttings all are experiencing a form of stress and should first have time to be well-established before being sprayed with insecticidal soap.
2. Avoid treating sensitive plants. Some plants are known to be more easily injured than others by insecticidal soap. Following is a list of plants known to show phytotoxic reactions after treatment:

- | | |
|--|-------------------------------|
| • jade plant | <i>Crassula argentea</i> |
| • horse chestnut | <i>Aesculus hippocastanum</i> |
| • mountain ash | <i>Sorbus americana</i> |
| • Japanese maples | <i>Acer palmatum</i> |
| • gardenia | <i>Gardenia spp.</i> |
| • bleeding heart | <i>Dicentra formosa</i> |
| • sweet pea | <i>Lathyrus odoratus</i> |
| • maidenhair fern | <i>Adiantum pedatum</i> |
| • crown of thorns | <i>Euphorbia millii</i> |
| • lanтана | <i>Lantana spp.</i> |
| • nasturtiums | <i>Nasturtium spp.</i> |
| • Easter lilies (during bud formation) | <i>Lilium longiflorum</i> |

Certain varieties of azaleas, begonias, camellias, fuchsias, geraniums and impatiens may also be sensitive. Rinse these plants with a clean

water spray if they show signs of wilting within a few hours after treatment. Test insecticidal soap first on a small part of palms, delicate ferns, ornamental ivies, and succulents before treating an entire plant or area. These may also be sensitive.

3. Wait for new growth to harden off before treating. Tender, young foliage of evergreen trees or shrubs may be most sensitive. Fruit and nut trees in bloom also should not be sprayed. If ever in doubt, test a small part of a plant first. If the plant is sensitive, phytotoxic symptoms should appear within 48 hours.
4. Apply when the temperature is below 90°F and not in full sun. High temperatures and high relative humidity may increase plant stress and, therefore, sensitivity. The best time to apply insecticidal soap is in the early morning. The material works only while wet, and the slower drying conditions in early morning favor better control.

Compatibility with other pesticides and fertilizers.

Insecticidal soap is compatible with many other kinds of pesticides, but should not be mixed with rotenone-based insecticides, Manzate, Dithane, lime sulfur, copper sulfate or copper fungicides such as Bordeaux mixture. It should also not be combined with concentrated mineral fertilizers for spraying on foliage.

Compatibility with hard water.

Soft water is best for diluting to the proper strength. Soap combines with and is precipitated by certain minerals in hard water, especially calcium, iron and magnesium. Test for compatibility by allowing a quart of prepared spray solution to stand for 15 minutes. A scum or "curd" of soap scale on the surface indicates the need for a water conditioner. The solution should normally be a light, milky color.

*Please read the label
before applying any
pesticide.*



"This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office (631) 444-0340. Read the label before applying any pesticide. Cornell Cooperative Extension and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products is made or implied."

D-1-6 reviewed RT 1/03