

Materials should be selected that will be effective in controlling the pests without injuring the plant, or causing build-up of other pests. Keep these points in mind:

- **Select the right material.** Use the one recommended to control the pest.
- **Apply it at the right time.** Insects are easier to control when small in size and few in number. Make frequent inspections. Don't let them build up to large populations.
- **Use the right amount.** Use the recommended amount. Too little won't control the pest; too much may injure the plant. **Read the container label carefully for correct dosage rate.**
- **Apply it in the right way.** Thorough coverage of the leaves (especially the underside), twigs, and branches is essential for control of many pests, especially certain scales. Most failures to control pests are the fault of the person making the application, not of the insecticide. The addition of a spreader sticker to the spray mixture is strongly recommended when spraying ornamental plants. Use of a spreader sticker will aid in adhering the pesticide to the leaves and improve control.

Sprayers

Sprayers of various types and sizes, ranging from simple trombone action sprayers and 1 to 3 gallon compressed air sprayers to large high pressure power rigs, are on the market. The kind of sprayer needed varies with the size and type of planting to be protected. With all sprayers, thorough coverage of leaves and wood to the point of runoff of the spray is important. Sprayers which attach to the end of garden hoses are popular with home gardeners, but are less satisfactory, in general, for use on ornamental plants and in particular against pests like scales and spider mites. The spray pattern is usually coarse, and it is difficult to direct the spray to reach and adequately cover the undersides of the leaves, especially those near the ground and the side of plants close to a building or fence. If a hose attachment is used, be sure it is one manufactured for use on ornamental plants and not one for use on lawns. The emulsifiable concentrate formulation of insecticide is preferred over the wettable powder.

General-Purpose Sprays

Needless to say, it is impossible to suggest one spray mixture that will control all insect and mite pests of ornamentals. It will often be necessary to make additional treatments with other insecticides for certain pests.

An example of a general-purpose spray is one containing Diazinon or Metasystox-R or malathion, plus Sevin, plus Kelthane or Tedion. The Diazinon, Metasystox-R or malathion is primarily for sucking insects including aphids, mealybugs, whiteflies and scales; the Sevin controls a wide range of chewing insects including beetles, caterpillars; the Kelthane or Tedion controls spider mites. General-purpose sprays are commercially available.

Systemic Insecticides

A systemic insecticide is a chemical compound that is absorbed by the insect host, translocated throughout its tissues, and makes the host toxic to certain insect pests. Several systemic insecticides are absorbed by growing plants. Some are taken up from the soil by the roots of plants and translocated throughout the plant tissues; others can be absorbed by foliage or stem sprays or injections into plants.

Systemic insecticides have been effective primarily against small sucking pests, including aphids, whiteflies, scales, mealybugs and spider mites. In general, they have not given satisfactory control of chewing insect pests.

Di-Syston is available as 2 percent granules and as 1 percent active ingredient in fertilizer. It is relatively slow in action, but effective for long periods of time. Granules are absorbed more rapidly by plants if they are worked into the soil and watered. Dimethoate (Cygon or De-Fend), Metasystox-R and Orthene are systemic insecticides that are available as emulsifiable concentrates for use by home gardeners. They can be mixed with water and applied as foliar sprays. Dimethoate can be applied as a soil drench. Sprays give quicker kill, but the residual effect on insects is much shorter than soil drenches.

Systemic insecticides applied to the soil as drenches or granules remain effective up to six weeks. Also, when applied in this manner, they are relatively harmless to any insect predator or