

INSECT SCALES AND GALLS

by Stanley Rachesky
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The growth and development of ornamentals is directly affected by various environmental conditions among which include temperature, moisture, fertility and conditions of the soil. In most instances well cared for shrubs can withstand insect attack. Under times of stress when only one of the environmental conditions are altered, symptoms of insect injury can and will show up quite readily. To separate insect damage from disease or drought, leaves, stems, root systems must be carefully examined.

Scales and Galls are types of insects that take advantage of plants in poor health. Only by careful examination will one discover these pests on the shrub.

Scales: Description — Scale insects are rather small and are often overlooked until the death of a branch or limb commands close inspections. They come in a wide variety of shapes and forms and in rather drab colors. They are generally stationary and they have a protective shell under which they feed, develop, lay eggs, bear young, and die. The hard-shelled, or armored scales, such as oystershell, have shells that are detached from the body of the insect, but in soft scales the protective shell is attached.

Life History — Some scales overwinter in the egg stage and some as partly grown females that mature and lay eggs or give birth to living young in the spring. The young scales crawl away from the mother shell, move about for a few days, usually toward new plant growth, and then settle down, insert their beaks into the plant tissue, and begin to grow. They lose their legs and antennae as they begin to secrete a material that forms a shell over them for protection. Some of the soft scales move about sluggishly in the adult stage, but females of the armored scales remain where they settle. The soft scale infestations may be accompanied by a sooty mold that grows in the honeydew excreted by the insects. Only the males develop wings.

Damage — The scale insects make up a large group of destructive plant pests. They infest leaves, twigs, branches, trunks, or fruit, depending on the species of scale and its host. They may seriously retard plant growth and kill shrubs or trees. They are able to develop enormous populations, and it is the removal of sap from a plant by thousands of scales that causes the damage.

Control — Scales.

Cottony maple, European elm, Oystershell, Pine needle, Scurfy, Spruce bud, Sweet gum —

Malathion — Spray foliage thoroughly in late May for pine needle and sweet gum scale; in early June for scurfy, oystershell, euonymous, Fletcher, and European elm scales; and again in early August for oystershell scale; in early July for cottony maple, Juniper, and dogwood scales; and between July 10 and 15 for spruce bud scale.

Putnam, San Jose, Tuliptree —

Dormant oil diluted according to label — Apply when plants are still dormant in late winter. Do not use on evergreens. For tuliptree scale, a malathion spray in late September is also effective.

Treatment for southern Illinois: apply 2 weeks earlier and in northern Illinois 2 weeks later.



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Plant Galls: Recognition — Abnormal warts, swellings and knots on the leaves, twigs, and branches of trees and shrubs are usually galls. There are hundreds of kinds of galls, large and small, conspicuous and inconspicuous, but each kind is characteristic of the organism that produced it and the gall-producer remains faithful to a particular kind of plant.

Cause of Galls — Most of the common galls are due to abnormal cell growth stimulated by insects and mites, but some galls are caused by bacteria, fungi, and nematodes. Still others are caused by aphids, mites, or fly larvae. On oak trees particularly, growth of galls of many shapes is stimulated by a large number of species of small wasps belonging to the family Cynipidae.

Life Cycle and Habits of Gall-Makers — The habits of the gall-maker are as varied as the galls. In general, the galls provide a home for the insect, where it may feed, lay eggs, and develop. In the case of the Cynipid galls, the small wasps lay eggs on the developing buds and shoots. These hatch into legless grubs that cause the galls to develop. After development, the galls are deserted by the insects.

The numerous green, reddish, or black galls seen on the uppersides of maple leaves are stimulated by microscopic mites that overwinter under the bud scales of the trees. As soon as growth starts in the spring, the mites move to the leaves and stimulate gall growth. They feed, lay eggs, and live inside these galls.

Nature of injury — The damage caused by galls is difficult to record or estimate. The presence of galls does not indicate that the plant is diseased and likely to die. The damage is localized and, with a few exceptions, is not considered serious enough to justify spraying. Occasionally, however, galls develop in such numbers that the leaves become distorted and lose their natural beauty, or some may fall prematurely. Cynipid galls sometimes kill oak twigs and branches, and the hickory gall aphid may seriously damage hickory twigs.

Control of Gall-Producers — Control of galls is a matter of prevention rather than cure. Galls are seldom noticed until the small animal inside is well protected from any spray material that might be used. Control measures have been worked out for only a few kinds of galls.

Control — Galls.

Elm cockscomb, Hickory —

Lindane — Spray foliage thoroughly when buds unfold.

Hackberry blister —

Diazinon, Malathion — Spray foliage thoroughly in late May. Kills psyllids in galls.

Cooley spruce, Eastern spruce —

Either spray above — Apply in late September or October or early spring just before the buds swell.

Treatment for southern Illinois: apply 2 weeks earlier and in northern Illinois 2 weeks later.

In other states, consult your state extension entomologist for insecticide recommendations.

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