

## SOME COMMON SHADE TREE GALLS

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Galls are irregular plant growths which are stimulated by the reaction between plant hormones and powerful growth regulating chemicals produced by some insects or mites. Galls may occur on leaves, bark, flowers, buds, acorns, or roots. Their inner walls provide a high quality food source for the inhabitant as well as protection from insecticide sprays and some shelter from natural enemies. Important details of the life cycles of many gall makers are not known so specific timings of control measures are not available.

Gall makers must attack at a very specific time in order to be successful. Otherwise, they may not be able to stimulate the plant to produce the tissue which forms the gall. Generally, initiation of leaf galls occurs during the "bud break" stage or as new leaves begin to unfold.

Once the symptom or gall appears, the causative animal is protected within the structure. This means that remedial actions, other than pruning in some cases, are not effective. Preventive action is necessary to attempt to reduce the infestation the following season and these may be of limited value. Fortunately, most galls, especially those on leaves and leaf structures, do not harm the health of the tree.

### Ash Flower Gall

This gall is caused by a small mite that causes irregular distortion of male flowers. The galls are initially green, then dry and turn brown. They are unsightly and remain on the tree over the winter. A dormant oil treatment may be effective. An application of carbaryl (Sevin) or chlorpyrifos (Dursban) in the spring when the first blossoms begin to form may be of some help.

### Ash Midrib Gall

Normally 1/2" to 1" long, these galls are succulent and have thick walls. A small cavity within each gall contains one or more small maggots, the larval stages of very small flies called midges. Female midges lay their eggs in very young leaflets during early spring. Gall formation begins soon after the eggs are laid. Specifics of the biology of this insect are not known. The galls probably do not harm tree health.



Hackberry Leaf Gall

### Elm Cockscomb Gall

These distinct galls, caused by an aphid, are about 1" long and about 1/4" high. The irregular edge of the gall and its red color at maturity account for the common name. The galls dry, harden and turn brown as they age. Aphids may be seen through a slit-like opening in the underside of the gall. This insect has a complex life cycle – it forms galls on elm in early summer, then feeds on grass roots the summer. The galls apparently do not cause significant harm to the tree.

### Hackberry Leaf Gall

This gall is caused by a small (1/10" long) aphid-like insect with sucking mouthparts called a jumping plant louse. The adults spend the winter under bark crevices and can invade houses in large numbers in the fall. Females lay eggs over a long period of time beginning when leaves begin to unfold from the buds in the spring. Feeding by the nymphs that hatch from these eggs causes abnormal plant growth that forms a pouch. The psyllids remain inside the galls until they emerge as adults in late summer to early fall. There is one generation each year. Heavy infestations can result in premature leaf drop which over a series of years may affect tree health. An application of acephate (Orthene), carbaryl (Sevin) or chlorpyrifos (Dursban) may give some control.

Hundreds of adults emerging from galls on

heavily-infested trees can be very annoying as they fly to cars, buildings, and other objects. This stage causes no harm or damage.

### **Honeylocust Pod Gall**

This gall is caused by a small fly (midge). The Sunburst cultivar appears to be very susceptible to this pest. Infested leaves have globular or pod-like distortions that contain one to several small maggots (1/4" long). Infestations begin when females lay eggs in young leaflets. There are five or more generations each year.

Infested leaves often drop prematurely and repeated damage can kill small branches. New shoots develop at the base of dead twigs. As a result, the natural shape of the tree may be lost. Treat growing tips with carbaryl (Sevin) as growth starts in the spring. Repeat at 10-day intervals until the infestation is ended.

### **Petiole and Stipule Galls**

Thick globe-like galls can develop on leaf petioles and stems. Many of these are caused by insects called phylloxerans (fill OX erans), which are very similar to aphids. The hard, woody galls may remain on the tree for several years. Usually, there is one generation each year and the insects over winter on the tree in the egg stage. No effective controls are available.

### **Willow Shoot Galls**

These swellings on shoots, twigs, or leaf petioles, may be caused by small flies (midges) or small wasps (sawflies). The gall increases in size as long as the immature stages are active. They cause no significant injury. The infestation may be reduced by pruning and destroying the galled areas before adult insect emerges, usually in late summer.

### **Witchhazel Gall**

This gall is caused by an aphid that passes the winter in eggs laid on twigs of the plant. Feeding by the aphid causes the formation of conical galls on the upper side of the leaf. Each gall, produced by single aphid, later becomes filled with offspring. Mature aphids with wings leave the galls in late spring and early summer and fly to birch. After several generations there, the insects return to witch hazel to lay the eggs that survive the winter. No galls are formed on birch.

Although the witch hazel galls are on the leaves all summer, they are empty after mid-summer. The galls do not injure witch hazel. No control is available.

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