



Plant Galls Caused by Insects and Mites

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Plant galls are formed from abnormal vegetative growth produced by a plant under the influence of an insect, mite, bacteria, fungus or nematode. It involves the intimate association of the plant host and the gall maker. Galls can be found on any part of the plant, but are most often observed as large, swollen growth on a leaf or branch. However, there are many other types that exist. Some examples include the erineum galls (hair-like growths on leaves) pouch galls (pouch-like deformities caused by a depression in the leaf surface) and leaf spot galls, which are noticeable because of leaf discoloration.

Most galls are caused by mites and insects. The gall mites (Eriophyidae) are very small, usually whitish-colored sausage-shaped mites with only two pairs of legs. Mites are usually found in erineum galls, blister galls, and various types of pouch galls, often on the buds of leaves.

The three major groups of insects that cause galls are aphids and their relatives, gall midges and gall wasps. The aphid group includes aphids, phylloxerans and psyllids. The aphid genus *Pemphigus* includes several species that form galls on the leaves or petioles of cottonwoods, aspens, and willows. The genus *Phylloxera* causes galls on the stems and leaves of pecan and hickories (Figure 1). Psyllids are also known as jumping plant lice and cause galls to form mostly on hackberry leaves and buds.

The gall midges (family Cecidomyiidae) are a large group of small (usually less than 1/4 inches long), delicate flies that cause bud galls, blister galls, and galls on the leaves and other parts of a wide variety of plants (Figure 2).

The most common group of gall makers are the gall wasps. Most gall wasps belong to the family Cynipidae, but a few sawflies and chalcid wasps also cause galls. Gall wasps are common on oaks, roses and related plants. The galls that they form may be located on any part of the plant, in diverse forms and shapes (Figs, 5-9).

Most gall makers are of little economic importance. Some attack wild plants with no immediate economic value. In other situations, the gall maker may be common enough to cause serious damage. A few mites and midges are serious pests of fruit trees, roses and other flowers. Pecan phylloxera is an economic pest of pecans. A few gall wasps cause large irregular galls on oak branches that can effectively girdle the branch, although they seldom, if ever kill a tree. Plant galls can become common enough to make the plant's appearance unattractive.

Despite the visual impact that heavy gall infestations can cause, the relationship between the plant host and the gall maker is so nicely balanced that infested plants are rarely killed by the gall maker. This makes control of gall insects difficult, and often unnecessary. Some varieties of a tree seem to be less susceptible forming galls. Research suggests that trees which seem to be less susceptible have leaves that open later. Sometimes, the most effective method is to prune out isolated infested plant parts and destroy them. Simply cleaning up and destroying infested leaves, twigs, etc. in the fall will help suppress an infestation. There are some natural controls that may buildup in numbers over time. The most effective time to control gall makers with an insecticide/miticide is when adults are actively laying eggs (usually early spring, just as the plant resumes rapid growth and leaves begin to unfold). Applications may have to be reapplied two to three times over the course of a week or two, and coverage must be thorough. Once the galls begin to form, the insect or mite that is inside the gall is protected from contact with a surface-applied or systemic insecticide, and the formation of the gall can not be prevented. Always follow label instructions for the safe, effective use of a pesticide. Specific chemical control suggestions can be found in OSU Extension Fact Sheet F-7306.

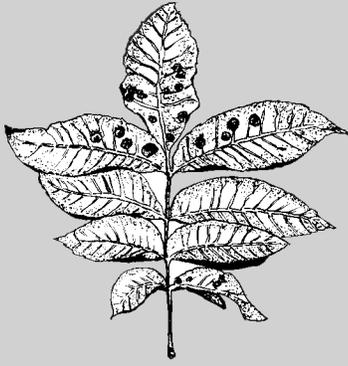


Figure 1. Pecan leaf Phylloxera Gall; Insect cause-Phylloxera, *Phylloxera notabilis*.



Figure 2. Hackberry Nipple Gall; Insect cause-psyllid, *Pachypsylla celtidismamma*.



Figure 3. Vein Pocket Gall; Insect cause-gall midge, *Parallelodiplosis*.



Figure 4. Honey Locust Pod Gall; Insect cause-gall midge, *Dasyneura gleditschiae*.

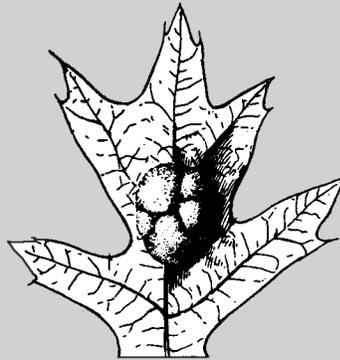


Figure 5. Woolly Oak Gall; Insect cause-gall wasp, *Callirhytis lanata*.

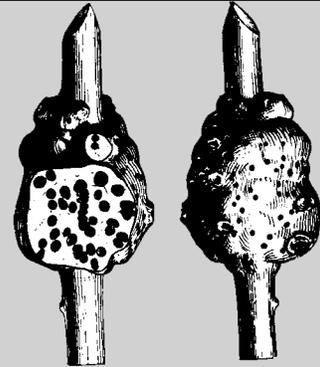


Figure 6. Gouty Oak Gall; Insect cause-gall wasp, *Plagiotrochus punctatus*.

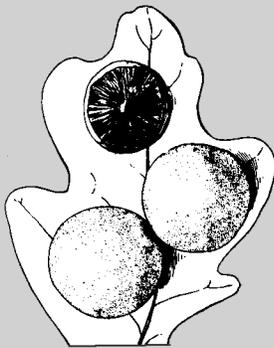


Figure 7. Spotted Oak Apple Gall; Insect cause-gall wasp, *Cynip centricola*.



Figure 8. Horned Oak Gall; Insect cause-gall wasp, *Plagiotrochus cornigerous*.

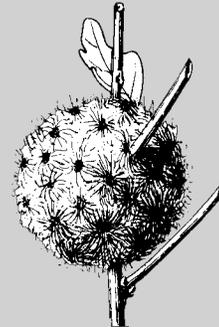


Figure 9. Gall of Wool Sower; Insect cause-gall wasp, *Callirhytus seminator*.

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