
Galls

Gall-forming insects and mites are common on many plants species in north central Arizona. The galls are abnormal growth produced by plants in response to feeding and egg-laying activity of these animals. The most common are leaf, stem and flower galls. Galls produced by insects and mites rarely cause permanent damage. Conversely, galls caused by pathogens, such as bacteria and fungi, are often detrimental to plants. Learning to differentiate between insect/mite galls and pathogenic galls often requires a dissecting microscope and some knowledge of the susceptibility and symptoms produced by the host plant.

Most gall-forming insect and mite populations fluctuate from season to season and year to year. Galls are produced by plant cells stimulated to abnormal growth. Galls formed by insects and mites usually result from chemical secretions produced during feeding or egg-laying. The chemicals act like natural plant growth hormones changing the normal morphology (form and structure) of the plant parts affected.

Insect and mite galls are usually produced when plants are growing rapidly. Mature plant tissues are insensitive to various gall-making stimuli. Consequently, most galls start in late spring and early summer when adult insects and mites become active and lay eggs. As the gall-making insect or mite develops within the plant gall, the gall continues to expand. Once formed, galls may remain on the plant for long periods, even though the insect may leave it shortly after the gall develops.

Eriophyid or **gall mites** make a variety of plant galls. Small finger-like galls, pocket galls, or felty masses of plant hairs (erinea) on leaf surfaces are common types produced by these mites (which actually look similar to a small, transparent maggot). Irregular growths on flowers or buds of ash and cottonwood are produced by other species of gall mites. Some gall mites that feed on top of leaves also produce irregular leaf curls similar to the injury caused by herbicides. These can be seen on pear, ash, aspen, and walnut in Yavapai County.

Psyllids or **jumping plant lice** are best known for producing the common nipple gall on hackberry. However, other psyllids make tiny blister galls on hackberry leaves or infest developing buds. It is very common for hackberry to have galls in Yavapai County.

Gall-making aphids, adelgids or "**woolly aphids**", include a variety of gall makers that primarily affect evergreens. The most common and conspicuous adelgid in Colorado is the Cooley spruce gall adelgid, which produces a cone-like gall on spruce. Gall-making aphids also cause various stem and petiole galls on cottonwood and poplar. Woolly aphids, found on apple and crabapple, attack wounded areas of branches, trunks and shallow roots causing cankers to develop. Woolly apple aphids are common in Yavapai County.

Gall wasps are the single largest group of gall-making Insects. Gall wasps produce a wide range of galls from woody, rounded galls on stems or leaves to woolly or mossy galls. Virtually all insect galls found on oak or roses are produced by gall wasps. These are common and widely varied on the oak species present in Yavapai County.

Gall midges are a common and diverse group of gall-making insects. Most gall midges produce undistinguished swellings of leaves/needles or swellings of flower parts or fruit. These are often seen on pinyon pines in Yavapai County.

Gall flies develop in the new shoots of aspen and some poplars, producing spherical swellings. Although the poplar twig gall fly leaves these galls during late winter and early spring, galled twigs continue to grow for years, producing large knot-like growths.

As these organisms are native and the host plants adapted to their colonization, management of insect and mite galls is usually not warranted.

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