



## Maple Bladder Gall, Spindle Gall & Gouty Vein Gall

The upper surface of silver and red maple leaves often become covered with small, red, round wart-like structures about 1/16 to 1/8-inch in diameter. These are maple bladder galls caused by a small mite. The structures are generally noticed first in May, about the time the leaves have become fully expanded. At first the galls are green but they quickly turn pink to red and eventually black. Leaves frequently become so covered with the galls that they completely twist out of shape and may even drop early.



On sugar maple, another leaf gall is commonly found, the maple spindle gall. This gall is also caused by a mite. The gall appears as thin, elongate bladders arising from the leaf upper surface. These galls rarely distort the leaf but considerable numbers of galls can make the leaves unsightly

The maple gouty vein gall midge only attacks sugar maple and causes thickened pouches along the major veins. These galls can completely crumple the early leaves of maples, often making them look like herbicide damage. The galls are caused by the larvae of a small gnat-like midge, Felt.

Homeowners often become quite alarmed when they discover that their maple tree leaves are infested with leaf bladder, spindle or gouty vein galls. They fear that the tree is going to die unless something is done quickly. This is not the case. Maple leaf galls seldom, if ever, cause permanent injury to a tree, but they do detract from the beauty of the leaves.



### Damage

Other than the mere aesthetic damage and possible early leaf drop, no significant damage is done to the health of maple trees. Following a mild winter, damage from these leaf galls can be excessive but affected trees often send out new leaves to replace the damaged ones.

### Description and Life Cycle

Both the maple bladder gall and maple spindle gall mites over winter as free living mites under loosened bark and around the callous growth of wounds, scars and pruned branches. These over wintered forms produce the gall forming stage in early spring. When the maple leaves first appear, the mites migrate to expanding buds and begin to feed on the undersurface of leaf buds. This causes the formation of a blister which expands into a hollow bladder or spindle as the leaf expands. The mites enter the cavity and continue to feed within its protective walls. This stage reproduces asexually within the galls and the new mites mature by late June to mid-July. At this time the galls dry out and the tiny entrance hole opens up to allow escape of the mites. These mites then seek out over wintering sites.



The maple gouty vein gall midge spends the winter as full grown larvae in the ground and leaf litter under their host sugar maples. In late January into early March these larvae spin small white cocoons in which they pupate. The pupae rest until April and early May when the gnat-like adults emerge. These midges have black wings and heads but the body appears reddish from the eggs inside. Each female may lay up to 100 eggs among the leaf hairs on the lower leaf surfaces of expanding leaves. The tiny, maggot-like larvae hatch in a couple of days and they migrate to the leaf upper surface. Here they line up in small groups along the major leaf veins. At these congregation points, the leaves swell and the vein edges fold over to form the galls. Within a few days the galls are fully formed. The larvae feed within the protection of the gall until October. At this time the galls dry and a slit-like opening is formed. The mature larvae drop to the soil to seek shelter.

#### **Control Hints**

Since these leaf galls of maple do not cause any real harm to the trees, control measures are not generally needed. Tree owners and tree managers are encouraged to learn about the life cycles of these pests and learn that no lasting damage will result.

**Strategy 1: Use Resistant Maples** - Norway maples and some of the named cultivars of maples with outstanding red or yellow leaf color appear to be resistant to these gall mites and midges

**Strategy 2: Dormant Oils** - Some reports of success have been made where the trunk has been drenched with dormant oil to kill the overwintering stages of the bladder gall and spindle gall mites.

**Strategy 3: Standard Insecticide/Miticide Sprays** - Several insecticides and miticides are registered for control of gall mites (eriophyid mites) and gall midges. If these products are to be used they have to be applied precisely when the new leaf buds are opening. Most sprays have little, if any, effect because the window of opportunity is very short. Once the gall has formed, it is too late to make an application.

**Strategy 4: Systemic Insecticides/Miticides** - Several systemic pesticides (sprayed, soil injected or trunk injected) have been recommended as useful in controlling these gall forming pests. However, little evidence of success has been found in the current literature. Once the gall has formed, it is too late to make an application.

Information obtained Through the Ohio State University Extension Factsheet HYG-2004-95



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