

Oak Vein Pocket Gall



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Hosts: Primarily pin oaks and oak trees in the Red Oak Family



*Figure 1:
Oak Vein
Pocket Gall
on the leaf
of a pin oak
tree.
Symptoms
include
swelling and
gall
formation
along the
leaf veins,
leaf curling,
and leaf
distortion.*

Description: Gall-like growth present on the underside of pin oak (*Quercus palustris*) leaves. Galls are elongated, pocket-like swellings on the leaf vein, and follows strictly along the midrib and lateral veins of the plant leaf. In some cases, pin oak trees have extensive galling on nearly all the leaves, with the leaves becoming twisted or distorted in appearance. In severe cases, nearly 100 percent of the tree can be infested with this gall.

The damage is caused by the maggots (larvae) of a small fly, called a midge (*Macrodiplosis quercusoruca*). These small insects lay eggs on the leaves of the tree as they begin to expand and flatten in the spring. The eggs hatch into maggots that move to the leaf veins and start feeding. The feeding by the maggot irritates the leaf tissue, and the plant responds by forming abnormal growth that surrounds the insect. This abnormal growth, called a gall, forms a protective covering for the maggots within several days. The insect remains in the leaf gall until development is complete.

The adult maggot is white and approximately 2.0 mm in length. Development is completed by mid-summer to late fall. The adult maggot eventually emerge from the gall, fall to the ground, and overwinter or enter diapause (a physiological state of arrested development, similar to a hibernation) until the next spring. There is one generation per year.



Figure 2: Leaf curling and distortion of pin oak tree leaves caused by oak vein pocket gall.



Figure 3: Oak vein pocket gall maggot (larvae) emerging from leaf gall. After the adult maggot emerges from the gall, they fall to the ground, and overwinter in the soil.

Recommendations: Oak vein pocket gall midges are difficult to control and do not cause significant damage to the host tree. Therefore, control is not warranted. Although the leaf galls can cause enough deformity to make a tree unsightly, the damage to the tree is primarily aesthetic and will not significantly impact the overall health of the tree. Severe infestations of galls can cause twig dieback; however, just because a twig is covered with galls does not mean the twig is dead.

Insecticides applied when galls are noticed are ineffective because damage has already occurred. The larvae are unaffected by most insecticides at this point because they are protected by the gall and do not come into contact with the insecticide. Insecticide sprays can kill emerging adult midges, but long emergence periods and short residual activity of most contact insecticides make this impractical. Therefore, the best option is to do nothing.

Note: The oak vein pocket gall should not be confused with other galls, such as the oak leaf marginal gall (*Figure 4*). Often times both oak vein pocket gall and oak leaf marginal gall are present on the same tree. It is important to note that the oak vein pocket gall is not associated with the oak leaf itch mite. The oak leaf itch mite is specific to the oak leaf marginal gall. Information on the oak leaf itch mite and the oak leaf marginal gall can be found at:

<https://www.bookstore.ksre.ksu.edu/pubs/MF2806.pdf>



Figure 4: Oak leaf marginal gall on the edge of a pin oak leaf. Often times both oak vein pocket gall and oak leaf marginal gall are present on the same tree, however, they are two separate types of galls.

Authors: Matthew McKernan & Raymond Cloyd, May 2016

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