

Leaf hopper

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Identification, Biology & Management

Leafhoppers are one of the largest families of plant-feeding insects. There are more leafhopper species worldwide than all species of birds, mammals, reptiles, and amphibians combined. Leafhoppers feed by sucking the sap of trees, and are commonly found throughout the UK. At least one leafhopper species can usually be found feeding on the each of the dominant tree species in the UK. Indeed it is not uncommon to find several leafhopper species coexisting on the same tree..

Symptoms

Leafhoppers injure plants either directly, through feeding (Figure 1) that can damage plant tissue and remove essential plant nutrients. Feeding damage is manifest as triangular, chlorotic areas that extend from the feeding sites to the leaf edge. A number of feedings sites on a leaf will cause the leaf to curve downward. If several leaves on a shoot are affected, shoot growth may be stunted. Feeding on leaf tissue can also indirectly injure trees through the transmission of plant pathogens such as viruses, mycoplasma-like organisms, or other microorganisms.

Figure 1: Leaf hopper damage on leaves



Causal Agents

The female (Figure 2) inserts several eggs into the living tissue of the host plant. The eggs either remain dormant for a period ranging from a month to over a year, or develop and hatch within a few weeks. The young, known as nymphs, feed on plant sap by inserting their stylets into the vascular or parenchyma tissues of the host plant and go through a series of five moults (shedding their exoskeleton), reaching the adult stage after a period of several weeks or months. Adult males and females seek each other out for mating, locating each other through specialized courtship calls.

Figure 2: Adult female leaf hopper



Control

Winter washes based on spray oil plus an insecticide on dormant trees during Dec-Jan are recommended to kill overwintering eggs. Contact

insecticides such as soap or spray oil are used on growing plants and kill mainly by direct contact. Due to the non-persistent nature of these chemicals re-infestation may soon occur and repeat sprays at 14-21 days may be necessary. When using these chemicals care should be taken to avoid phytotoxic effects and in the case of fruit bearing trees ensure that two weeks elapses before harvest after spraying. Synthetic insecticides provide excellent control of leaf hoppers feeding in protected situations such as rolled or curled leaves or on higher branches as these insecticides are absorbed by the plant tissues and poison the sap leaf hoppers feed on. Harvest fruit at least 3-4 weeks after application.

From flower bloom through petal fall, examine 50 leaves selected from leaf clusters in the inside of the tree. Treatment is recommended if there is an average of 0.5 nymphs or more per leaf. For the second generation, examine 50 leaves per tree from 10 trees for nymphs from late July through August. Treatment is recommended if there is an average of one or more nymphs per leaf. An additional spray may be needed because of the extended egg hatching period.

Leafhoppers have a great propensity for quickly developing resistance to insecticides. The insects are present on the undersides of the leaves, and thorough spray coverage of a plant is essential for control.



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