



Diagnosing Injury to Woody Ornamentals

Adapted from Johnson, W.T. and H.H. Lyon. 1991. Insects that feed on trees and shrubs. 2nd ed., Cornell Univ. Press, Ithaca, New York, 560 pp.

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- Distortion (swelling, twisting, or cupping of plant parts)
- Dieback of twigs, shoots, or entire plant; sometimes with holes in bark

➤ Signs - Presence of the Insect or Insect-related Products on Plants

- Honeydew and subsequent sooty mold
- Fecal specks on leaves
- Tents, webs, and silken mats
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Possible Causes of Injury to Plants

Abiotic Environment

HUMAN-CONTROLLED

- Industrial wastes
- Air pollution
- Phytotoxicity (pesticides)

- Salt (chemical) accumulations
- Concrete and macadam
- Soil compaction
- Changes in soil level
- Changes in groundwater level
- Mechanical injury by auto, machinery, and vandalism

NATURAL

- Mineral deficiencies
- Frost and freeze
- Sun scorch

- Drought
- Lightning
- Wind
- Hail
- Blowing sand
- Flood

Biotic Environment

ANIMAL

- Insects
- Mites
- Nematodes
- Millipedes
- Slugs and snails
- Birds (woodpeckers)
- Rabbits, mice, moles and other rodents
- Dogs
- Humans

PLANTS

- Viruses
- Phytoplasmas
- Bacteria
- Rickettsialike organisms
- Fungi
- Dodder
- Mistletoe
- Algae
- Moss
- Weeds
- Strangling vines
- Strangling roots

Symptoms of Insect Attack

Chewed foliage or blossoms

- Larvae of moths and butterflies
- Sawfly larvae
- Beetle larvae or adults
- Tree crickets, grasshoppers, and walkingsticks
- Snails and slugs

Bleached, bronzed, silvered, stippled, streaked or mined foliage

- Leafhoppers
- Aphids
- Lace bugs
- Psyllids
- Plant bugs
- Spider mites
- Thrips
- Leafminers

Distortion (swelling, twisting, or cupping of plant parts)

- Thrips
- Aphids
- Eriophyid mites
- Gall makers
- Psyllids

Dieback of twigs, shoots, or entire plant; sometimes with holes in bark

- Wood borers
- Bark beetles
- Scale insects
- Gall makers
- Root-feeding beetle larvae

Signs - Presence of the Insect or Insect-related Products on Plants

Honeydew and subsequent sooty mold

- Aphids
- Mealybugs
- Soft scales
- Psyllids
- Leafhoppers
- Whiteflies

Fecal specks on leaves

- Lace bugs
- Greenhouse thrips
- Some leaf beetles
- Some plant bugs
- Some sawfly larvae

Tents, webs, and silken mats

- Tent caterpillars
- Leaf tiers
- Webworms

Bags and Cases

- Bagworms
- Casebearers

Spittle

- Spittlebugs

Cottony fibrous materials

- Adelgids

- Some scales
- Mealybugs
- Some whiteflies
- Some aphids
- Flatids

Slime

- Snails
- Slugs

Pitch tubes

- Some bark beetles

Pitch or gum masses and sap flow

- Larvae of some moths
- Larvae of some beetles
- Larvae of some midges

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