

Insect injury to plants (illustration next page)

Insects may injure plants in a number of ways including feeding on them directly, but some indirect damage from insect activity may also occur. You may observe the following injury:

Chewing damage - often described as devoured plant parts, skeletonization, notching, mining of leaves, eaten woodk bark, roots, stems, fruit and seeds. Symptoms include ragged leaves, holes in wood, bark, or fruit and seed, serpentine mines or blotches, wilted or dead plant parts, or presence of "worms".

Examples: cabbageworms, cutworms, grasshoppers, beetles, weevils, sawflies

Sucking injury - piercing the epidermis (skin) and sucking sap and cell contents from the cells. Hole is so small that it cannot be seen without magnification, but withdrawal of liquids results in off-color foliage, white, brown or red on leaves, fruits, twigs; curling or misshapen foliage and fruit, general wilting of plant, or wilting, browning and dying of entire plant.

Examples: aphids, scales, plant bugs, squash bugs, leafhoppers and spider mites

Gall formation - insect activities cause plant to produce a structure of deformed tissue. Often seen as a swelling of plant tissue. The insect develops in the "gall", food and shelter being readily available. The gall is initiated by the adult insect egg laying activities, and the larva may give off some sort of chemical stimulant which causes continued growth of the gall.

Examples: gall making wasps or flies

Egg laying (oviposition) injury - results in scars on stems, twigs, bark or fruit. Symptoms: scarring, splitting, breaking of stems and twigs, misshapen and sometimes infested fruit.

Examples: plant bugs, cicada, tree crickets, certain beetles

Excretions - honeydew deposits on plant lead to growth of sooty mold, a black fungus, and the plant parts cannot perform their manufacturing of food functions. A weakened plant results. Symptoms may include sweet sticky deposits on plant leaves, sooty black leaves, twigs, branches and fruit.

Examples: aphids, scale insects

Damage from **injection of toxic substances** - causes curling, stunting, dwarfing often accompanied by discoloration (yellowing or browning) of the foliage, or a tipburn known as hopperburn may occur.

Example: potato leafhopper, sharpshooter

Insects may serve as vectors of diseases - carrying diseases from plant to plant. Insects may introduce plant diseases in a number of ways including by feeding, laying eggs, or boring into plants. They may carry the disease agents on or in their bodies from one plant to another. Some insects inject disease organisms into the plant as they feed. Symptoms of some of the diseases they vector include wilt, dwarfing, off color foliage, blighting

Examples: elm bark beetles vector Dutch elm disease, various aphids vector certain virus diseases.

