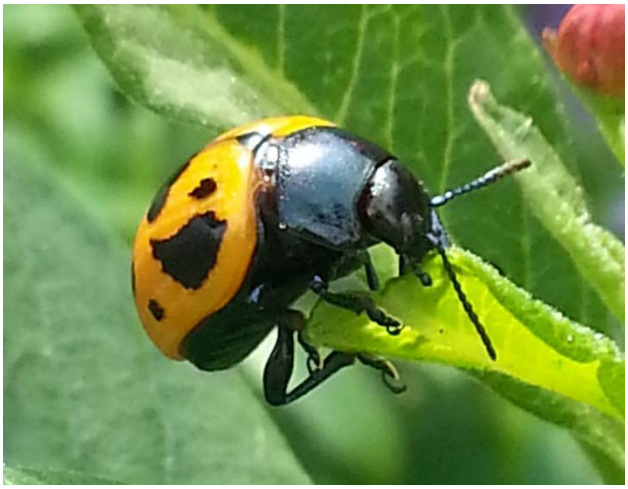
TEXAS A&M AGRILIFE EXTENSION

Plant Damage

When you are perusing your garden and come across a plant that isn't quite as pristine as you would like, what do you do? Do you keep walking, go into panic mode and run to get a pesticide, or do you look around to collect a bit more information? Hopefully, you went with option three.

If you fail to inspect plants in your garden, then you may miss problems when they first begin and are easier to manage. Conversely, if you treat with a pesticide right away, then you may applying unwarranted pesticide for insects that are no longer there. If you continue your inspection to gather more information, then you can make an educated decision on how to proceed.

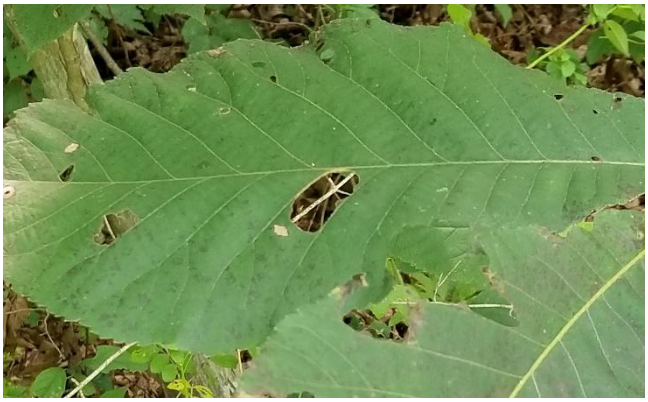
Chewing pests include insects such as grasshoppers and katydids in both adult and immature stages, caterpillars, sawfly larvae, termites, and some adult and immature beetles.



If you discover chewing damage, you need to determine if damage is new or old. New damage has green edges and can mean the insect that caused the damage is still nearby. Old damage has brown edges where the plant was chewed and insects that did the chewing are most likely no longer on the plant.

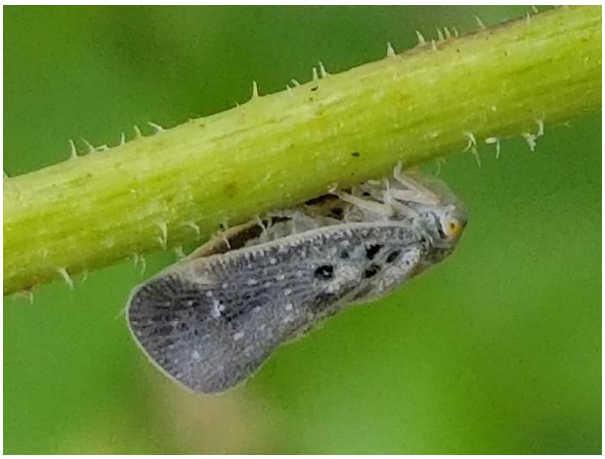
If you have new chewing damage but cannot locate insects, then you need to determine the possible size of the insects to figure out possible methods of management. Non-chemical and less-toxic options work best on smaller stages of insects and you also need to consider if the pest can fly away from your treatment.

Smaller chewing insects consume softer parts of plants- new growth or leaf surfaces- but not veins; and their damage can have a lacy or windowpane appearance. Medium sized chewing insects consume more parts of the plant including surface of leaves and smaller veins, leaving small ratty-looking holes or chewing along edges. Large chewing insects consume much of the leaf or fruiting bodies and may sometimes eat everything or only leave behind major leaf veins.



Non-chemical management for chewing pests include preemptive tactics such as plant collars, row cover, and removing eggs before they hatch. Less-toxic pesticide options are active ingredients such as *Bacillus thuringiensis* var. *kurstaki* (targets caterpillars only), spinosad (targets chewing insects), kaolin clay (coats the plant with a whitish-gray clay substance, gums up mouthparts, and needs to be reapplied when it washes off), and pyrethrins or azadirachtin (which are plant derived, but broad spectrum so kill any insects that come into contact).

Plant feeding insects with piercing-sucking mouthparts include insects such as stink bugs, leaffooted bugs, chinch bugs, lace bugs, aphids, hoppers, mealybugs, scale insects and whiteflies.



Piercing-sucking mouthparts form a long tube that is tucked between the legs of the insect on the underside of the body. The mouthparts consist of a hardened outer layer used to puncture plant tissue and a middle softer tube-like structure that is used to suck up plant juices.

Damage from piercing-sucking mouthparts causes yellowing, curling, deformation, and stunting of plant foliage or fruiting bodies. Feeding by these insects can transmit viruses and causes puncture wounds that can lead to secondary infection by fungus, bacteria, etc. and scarring. Since there is a wide range of insects with this type of mouthpart, damage may can manifest in other ways too.

A subset of insects with piercing-sucking mouthparts (e.g. aphids, whiteflies, scale insects) exude waste material called honeydew. Honeydew is a sticky sweet substance that can drop onto the host plant and surrounding areas, causing stickiness and a shiny appearance. A dark fungus called sooty mold grows on honeydew which can lead to secondary plant damage by blocking sunlight and reducing photosynthesis. If you discover sooty mold on your plants, you need to look for insects exuding honeydew.

Non-chemical management for pests with piercing-sucking mouthparts include preemptive tactics such as row cover, reflective mulch, and removing eggs before they hatch. High pressure water sprays can be used to remove small, soft-bodied insects such as aphids and scale insects. Less-toxic pesticide options use active ingredients such as insecticidal soap, horticultural oils, or plant-based pesticides like pyrethrins, azadirachtin, limonene, and others. Remember, less-toxic methods tend to work better on smaller stages of insects because of their size and often many of them are wingless and cannot escape the treatment area easily.

For more information or help with identification, contact Wizzie Brown, Texas A&M AgriLife Extension Service Program Specialist at 512.854.9600. Check out my blog at www.urban-ipm.blogspot.com

This work is supported by Crops Protection and Pest Management Competitive Grants Program [grant no. 2017-70006-27188 /project accession no. 1013905] from the USDA National Institute of Food and Agriculture.