Horticulture 2010 Newsletter  
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Master Gardener Pepsi Refresh Project Grant
The Shawnee County Extension Master Gardeners have been accepted as a candidate for the Pepsi Refresh Project Grant opportunity. It is solely based on democratic voting. We are seeking a $250K grant called "Build a Master Gardener Demonstration/Education Greenhouse.” Voting continues from October 1 through October 31.
1. www.snco.us/greenhouse
2. on Facebook - search for Pepsi Refresh App.
3. by texting 103438 to 73774
"It ain't over till it's over." Thanks for voting! (Jamie Hancock, Shawnee County Horticultural Agent)

ORNAMENTALS

Spring-flowering Plants Blooming in the Fall
Whenever we have a summer that puts a lot of stress on plants, bloom may appear on ornamentals that normally flower in the spring. We have noticed flowering quince and crabapple blooming this fall. Iris that are blooming now are probably reblooming varieties that normally bloom twice a year. Fall flowering of plants is normally sparse and does not appreciably affect the amount of bloom the following spring. (WU)

“Apples” on an Ornamental Shrub
We have had a number of reports of misshapen or fuzzy “apples” developing on a thorny shrub in the landscape. This is most likely flowering quince. Flowering quince is grown for its attractive blooms in the spring. Normally fruit does not develop because frosts prevent fruit formation and plants fruit poorly without cross-pollination. Quince fruit are quite hard but are sometimes mixed with other fruit to make jellies and preserves. (WU)
Is It a Maple or an Oak?

Sometimes people are unsure on how to tell the difference between a maple and an oak. The easiest way is to look at how the leaves are arranged on the stem. Maples are opposite leaved and oaks are alternate. Opposite leaved plants such as maples and ash have leaves directly across from one another. Alternate leaved plants have leaves alternating up the stem — one on one side and the next, further up the stem, on the other. (WU)

TURFGRASS

Frost on Lawns

If you have ever walked across a frosted lawn that isn't dormant, you may have noticed your footprints showing up later in the day. Though this is unsightly, it does not kill the turf. Grass blades are damaged but the crown is not. Actively growing turf will often recover after two to four mowings. Damage that occurs late in the fall will continue to show damage until it is masked by the rest of the lawn turning brown due to cold weather. It is believed that the damage is caused by ice crystals killing plant cells when they are forced into the leaf by the weight of a wheel or foot. Remember to avoid damage by staying off of frosted turf. (WU)

VEGETABLES

Keeping Your Pumpkin Longer

If you buy your pumpkins early, there are some tricks to make them last. Make sure the pumpkin wasn't harvested too early; before the rind developed a hard, waxy layer to keep it from drying out and shriveling. Test the pumpkin with your thumbnail. If it penetrates the fruit easily, it was harvested too early. Pumpkins also keep better in cooler weather. Even mature pumpkins may benefit from a light application of wax such as a car wax.
Carving reduces the longevity of pumpkins as well with carved pumpkins doing well to last a week. (WU)

PESTS

Parsleyworm or Black Swallowtail Caterpillars

This is the time of year when we start getting inquires regarding parsleyworm or black swallowtail (Papilio polyxenes) caterpillars. These caterpillars primarily feed on the leaves of fennel, dill, and parsley although they will sometimes feed on plants such as Queen Anne’s lace, celery, and similar plants in the carrot family (Apiaceae).

Young caterpillars are mottled black and white, which results in them resembling bird droppings. More mature caterpillars possess bands of green, yellow, white, and black. In addition, there are six yellow spots within each black band. Full-grown caterpillars are about 5.0 cm in length. Parsleyworm overwinters as a pupa or chrysalis that is attached to the bark of trees, sides of buildings, or other protected habitats. Adults typically emerge in May and June, and females deposit eggs on plants in the Apiaceae family—only laying several eggs per location. After eggs hatch, caterpillars feed for 3 to 4 weeks in which they undergo a series of color changes as they mature. Full-grown caterpillars eventually migrate off plants to find a place to pupate. They form a gray pupa, which blends in with the surrounding background. After approximately two weeks, adults emerge from the pupa or chrysalis. Adults are large black swallowtail butterflies with a wingspan of 2.0 to 3.5 inches. They are shiny black in color, occasionally with iridescent blue; and yellow bands or spots along the edge of the forewings and hindwings. Adults feed on the nectar of many different flowers. Females and males mate, then females lay eggs that will result in the occurrence of the second generation sometime in August. There are usually two generations per year. (RC)

The Impact of Horticultural Practices on Insect and Mite Pests

The proper implementation of sound horticultural practices has the greatest impact in maintaining healthy plants in gardens and landscapes and limits problems with insect pests, especially wood-boring insects (e.g., beetles and caterpillars). Horticultural practices such as watering, mulching, pruning, fertilizing, and plant selection and placement—when properly performed—reduce plant stress, which is the major cause of most insect and mite pest problems.

**Watering:** Providing too much or not enough water to plants in gardens and landscapes often leads to “stress,” thus increasing susceptibility to wood-boring insects. For example, certain “stressed”
plants emit volatile chemicals that attract many different types of wood-boring beetles. These beetles use the chemicals emitted to assist them in easily locating plants whose natural defenses have been compromised by improper watering practices. Underwatering plants may result in higher populations of the two-spotted spider mite (Tetranychus urticae) because there is less moisture in the air from ground and foliar evaporation; resulting in lower relative humidities and drier air conditions, which are favorable for twospotted spider mite development and reproduction.

Extreme fluctuations of wet and dry soil conditions such as we experience in Kansas may be detrimental to plant health and thus promote “stress.” Extended periods of wet soil may kill plant roots due to a lack of oxygen. These roots are not available later on to up-take water when dry conditions persist. The visual symptoms resulting from this kind of stress (e.g., leaf yellowing, premature leaf coloration, and possibly branch dieback,) may not be expressed by large trees for 3 to 4 years; however, the trees are susceptible to attack from wood-boring insects. This often times leads to confusion as to the actual cause of plant decline and eventual death. In this case, wood-boring insects are secondary, whereas the “stress” due to extreme wet and dry soil conditions was the primary factor responsible for plant death.

**Mulching:** Proper mulching tends to moderate soil temperatures, conserves soil moisture, reduces competition from other plants, reduces weed populations, prevents soil compaction, and minimizes soil erosion. However, improper use of mulches may lead to increased plant susceptibility to insect and vertebrate pests. For example, applying “too much mulch” or covering the plant crown prevents the bark from exchanging oxygen, and the plant suffers from asphyxiation. As such, this leads to plant “stress” and a higher likelihood of attack from wood-boring insects. It is recommended to keep mulch at least 2 inches away from the crown or base of trees. Thick mulches, those more than 6 inches, also provide a moist, protective habitat that voles find attractive. Voles hide in the mulch and feed on the bark (cambium) and may girdle plants—eventually killing them.

**Pruning:** Proper pruning during the growing season generally involves removing dead, diseased, damaged, and weakened growth to maintain plant health and vigor. But excessive pruning during the growing season such as removing large portions of the plant canopy results in “spurts” of succulent growth that tends to be susceptible to insect pests. Suckers produced from heavy pruning are also susceptible to aphids and other insect pests because this succulent tissue has a thin cuticle, which is easier for insect pests with piercing-sucking mouthparts including aphids, leafhoppers, and plant bugs to penetrate. Improper pruning leaves stubs that may emit volatile odors that attract and provide easy entry sites from wood-boring insects.

Pruning trees or shrubs at certain times of the year may increase problems associated with certain wood-boring insects. It is generally recommended, for example, to avoid pruning birch trees, especially white birch, from May through August because the bronze birch borer (Agrilus anxius) adult females are flying around looking for places to lay eggs. So, pruning during this time interval creates wounds that emit odors that attract the females.

Fertilizing: Similar to watering, over and under-fertilizing plants often leads to “stress” or the production of susceptible plant growth. Excessive applications of highly-soluble nitrogen-based fertilizers results in the production of lush, weak growth that is susceptible to attack by insect
pests (aphids in particular). Moreover, plants that receive excessive amounts of fertilizer may allocate resources to growth (e.g., leaf production) and divert resources away from the metabolism of secondary plant metabolites or plant defensive compounds. This tends to increase susceptibility to wood-boring insects. Conversely, plants unable to obtain sufficient amounts of nutrients are also more prone to attack by insect and/or mite pests because their natural defense system has been compromised.

In addition to the horticultural practices mentioned above, other practices may also increase problems with wood-boring insects. First, it is important to avoid injuring the base of trees and shrubs with lawnmowers or weed whackers because this removes essential cambium tissue that is responsible for transporting food upward to the leaves. This type of injury, which can easily be avoided by mulching around the base of plants, places extreme “stress” on plants. As previously mentioned, many wood-boring insects are opportunistic and tend to thrive on “stressed” plants. Second, newly planted or transplanted trees and shrubs may be susceptible to attack by wood-boring insects. For example, the flat-headed apple tree borer (Chrysobothris femorata) attacks recently planted trees or shrubs because these trees (or shrubs) are initially “stressed.” As such, it is essential to properly water plants, provide adequate drainage, and mulch young plants to minimize “stress.”

Plant selection and placement: proper selection of a planting site results in the establishment of ‘healthy’ plants that are better able to defend themselves and are less susceptible to attack by certain insect pests. For example, white birch trees located on the south-side of a white house are more susceptible to attack by bronze birch borer because white birches are unable to tolerate the extreme sunlight conditions and reflective heat projected, which causes “stress.” It is recommended to plant a tree or shrub that tolerates these types of conditions. Furthermore, be sure to consult (and read) available resources for information pertaining to proper planting zone, soil pH, mature plant size, and other factors (e.g., environmental and biological) before selecting or purchasing any plant material.

Proper implementation of sound horticultural practices including watering, mulching, pruning, fertilizing, and plant selection and placement is important in maintaining plant health and avoiding “stress.” However, when these practices are improperly performed, problems with insect and mite pests may be prevalent, which then requires the use of pesticides (in this case, insecticides and miticides). As such, maintaining proper horticultural practices often times avoids outbreaks of plant-feeding insects and mites and thus the need to apply pesticides. (RC)

MISCELLANEOUS

Fall a Good Time for Soil Testing

Though we often think of soil testing as a spring chore, fall can actually be a better time. Soil-testing laboratories are often very busy during the spring resulting in a longer turnaround from submission to recommendations. Also, soils in the spring are often waterlogged, making taking samples difficult.
If your soil test suggests more organic matter, fall is a much better season because materials are much more available than in the spring, and fresher materials can be used without harming young tender plants.

Begin by taking a representative sample from several locations in the garden or lawn. Each sample should contain soil from the surface to about 6 to 8 inches deep. This is most easily done with a soil sampler. Many K-State Research and Extension offices have such samplers available for checkout. If you don’t have a sampler, use a shovel to dig straight down into the soil. Then shave a small layer off the back of the hole for your sample. Mix the samples together in a clean plastic container and select about 1 to 1.5 cups of soil. This can be placed in a plastic container such as a resealable plastic bag. Take the soil to your county extension office to have tests done at the K-State soil-testing laboratory for a small charge. A soil test determines fertility problems, not other conditions that may exist such as poor drainage, poor soil structure, soil borne diseases or insects, chemical contaminants or damage, or shade with root competition from other plants. All of these conditions may reduce plant performance but cannot be evaluated by a soil test.

(WU)

**Contributors:**
Ward Upham, Extension Associate; Ray Cloyd, Entomologist

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