

Pest Update (August 10, 2016)

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of dying plants or insects from other states. If you live outside of South Dakota and have a question, instead please send a digital picture of the pest or problem.

Available on the net at:

<http://sdda.sd.gov/conservation-forestry/forest-health/tree-pest-alerts/>

Any treatment recommendations, including those identifying specific pesticides, are for the convenience of the reader. Pesticides mentioned in this publication are generally those that are most commonly available to the public in South Dakota and the inclusion of a product shall not be taken as an endorsement or the exclusion a criticism regarding effectiveness. Please read and follow all label instructions and the label is the final authority for a product's use on a particular pest or plant. Products requiring a commercial pesticide license are occasionally mentioned if there are limited options available. These products will be identified as such but it is the reader's responsibility to determine if they can legally apply any products identified in this publication.

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Plant development



The early season apples and crabapple fruit is beginning to ripen so the end of summer is not too far away. At this time of year most of the calls and questions relate to something wrong with the leaves, spots (usually a fungus) or yellowing, sticky leaves due to aphids and their honeydew. Most of these problems are not even problems and the tree will be just fine. This is not the time to treat most fungal problems and most of the

aphids are nearly finished with their feeding so my advice is put away the spray and grab a fishing pole and enjoy a lazy August day.

Timely topics



Is there a storm-resistant tree? This is becoming a common question after the series of storms that have swept the state this summer. Homeowners have been left with cleaning up fallen branches to removing fallen trees and are looking for some future relief from these chores.

First, damage can be due to a number of reasons, from decayed or dead branches to roots severed by construction. How the tree has been cared for (or neglected) has as much to do with failure as the species.

Almost all tree species can withstand winds if they have been properly pruned. This pruning starts out when the tree is young and the most important need is to develop a single leader. Trees that develop multiple leaders, two or three competing upright leaders, tend to split under ice or wind loads. These multiple leaders usually form on the lower six or eight feet of the trunk so are easily pruned off with hand pruners or a small pruning saw. This task should be performed while the tree is young and the competing leaders are less than 2 or 3 inches at their base. Once these leaders are more than 5 or 6 inches in diameter, their removal may result in decay as well as a misshapen tree.



Another frequent source of broken limbs are limbs that are similar diameter to the connected trunk. Strong limb attachments are created when the limb is less than 2/3's the diameter of the trunk. For example, if the limb is 2 inches at its base, the trunk at the attachment point should be at least 3 inches in diameter. This ratio is most critical for the lower limbs, those that form along the lower six to eight feet on the trunk, as these become the larger. Again, this can be easily corrected by pruning when the tree is young.

While pruning is the key to creating storm-resistant trees, some species naturally have better forms than others. Trees with a coarse branching pattern develop a more open canopy with less branch surface area. This results in less damage. There are also tree species that rarely develop multi-leaders and also tend to form limbs that are almost always smaller than the trunk.

Here are some trees that are the most susceptible to storm damage. These trees tend to form multi-leaders and also poorly attached limbs. However, they can be fairly resistance to storms if properly pruned.

Ash (Black, Green and White)
Basswood and lindens
Elms (Siberian and American)
Hackberry
Maples (Freeman and Silver)
Willow

Here are some trees that are the least susceptible to storm damage. They tend to develop good form without pruning though pruning is still recommended.

Black walnut
Buckeye
Bur oak
Ginkgo
Kentucky coffeetree
Sugar maple
Shagbark hickory

Mountain pine beetles are beginning to fly. This insect usually begins leaving its dead host about the time the Rally begins (perhaps the loud rumbling disturbs the beetles!). The beetles emerge from pines that have yellow to red needles. These are trees attacked last year. The beetle will now fly to healthy pines and attack these trees. The beetles depend upon attacking a tree in mass to overcome its pitch and burrow their way in. Fortunately since the epidemic is finally declining we are seeing fewer trees attacked this year.



What crabapples are resistant to fireblight?

I had this question from a number of people that are tired of cutting off the dying infected branches. Fireblight is a bacterial disease common on apples, crabapples, mountainash and pear. However, not all cultivars of these trees are equally susceptible. The crabapples that are most resistant to this disease are the following:

'Adam'
Centurion^R
Coralburst^R
'Kelsey'
'Prairifire'
Royal Raindrop^R

E-samples



Bur oak blight, otherwise known as BOB (*Tubakia iowensis* sp *novi*) is showing up more along the woody draws in Sioux Falls. The disease was first noticed on bur oaks in southern Minnesota, Iowa and eastern Nebraska back in the 1990s where it became associated with dying oaks. It has been reported in past *Update* issues and the disease has been found in most of the South Dakota counties bordering Minnesota and Iowa. The leaf symptoms do not really become noticeable until August so now is the time e-samples begin to come in. However, e-samples need to be followed-up with a physical sample as the symptoms can be confused with other oak foliage diseases.

The most common symptoms associated with the disease are leaves becoming discolored in late summer with purple-brown lesions appearing along the middle vein, yellow wedge shaped blotches on the leaf blade and black pustules at the base of the petiole. The infected leaves tend to persist on the tree throughout much of the winter. The symptoms generally occur on the lower branches but during successive years intensify and eventually cover the entire canopy.



The disease is a leaf disease and infected trees will produce new leaves the following spring. However, infected trees are more susceptible to secondary stress agents such as two-lined chestnut borer and often begin showing extensive dieback after a few years of the initial symptoms and may die if the disease and the secondary stresses are left unmanaged. It is common to see only one or two trees in an oak grove expressing symptoms so there appears to be some variation in resistance to the disease. The disease is also more prevalent on the bur oak botanical variety *Quercus macrocarpa* var. *oliviformis* which is more common to dry, upland sites. This variety is common in eastern South Dakota and produces slightly smaller acorns than most other bur oaks. Since the disease is specific to this subspecies of bur oak, we are not likely to see the disease appearing east of Highway 81 except along the Missouri River.

The disease really needs a wet spring (like we had this year) to get it going. When we experience wet weather during the initial shoot expansion in May the disease proliferates and mature bur oaks can develop symptoms throughout the canopy during August, sometime almost appearing overnight. If we have a series of dry springs, infected trees can make a recovery.

The most common treatment for BOB is an injection of propiconazole, a chemical used to treat oak wilt (Alamo), made during the early growing season (May or June), but at a lower rate than used for oak wilt. Since the disease has only recently been studied; treatments, rates and timing are still being investigated. An additional approach is to manage the overall health of the tree, reducing the impact of any other stress agents, construction and borers being two common ones.



Cicada killer wasps (*Sphecius speciosus*) are out in force taking care of that “buzzing” heard in the trees in the evening. These are solitary wasps that hunt down cicadas, paralyzing them and then carrying the immobile insect back to the nest when she lays a single egg on it before closing it off in a chamber. Once the egg hatches, the larvae consumes the cicada then settles down for a long nap over the winter before emerging next summer. Cicada killer are big and tend to scare

people but as long as you are not small and sitting up in a tree making that annoying buzzing sound you are safe.



Chlorosis is appearing on maples everywhere. This is fairly common by this time of year. The reason for the yellowing is due to a micronutrient deficiency either iron (most common) or manganese. The problem is not that the soils lack sufficient amounts of these nutrients, but they are not in a form available to the tree due to the alkalinity of the soil. Usually by this time of year the trees have exhausted all the available iron or manganese and cannot obtain any more. The solution is to water the tree during these drought times so the roots continue to grow and absorb what iron or manganese is available. The tree can also be fertilized with a chelated form of iron but only if the tree is being watered.



Fall webworm (*Hyphantria cunea*) nests are appearing on many trees this year. You can see the nests on trees throughout the state. If you tear open one of these nests you'll find fall webworm larvae. The yellow to brown, tufted, larvae are about 1/2-inch long and actively moving within, and beyond, the nest at this time. The webworm differs from tent caterpillars in time of feeding (spring for tent caterpillars and late summer for webworms) and where they form their nests

(interior, near branch crotches, for tent caterpillars and exterior, out on the branches for webworms). The fall webworm favorite foods are cottonwoods, chokecherries and walnut, but almost any hardwood tree species will do. It is a myth that since they are feeding on leaves that will soon drop anyway that no damage is caused – the next month or so is a time of high productive for these leaves and the loss of them will leave the tree going into winter with fewer reserves. If you catch them now, an insecticide containing Carbaryl or Malathion sprayed on the foliage can reduce the defoliation.



Tar spot (*Rhytisma*) is showing up even more across the state and this, along with chlorosis, is making for a lot of unsightly Freeman, red and silver maple trees. The disease began as greenish-yellow spot in late June and then develops into these black tar-like structures we are seeing now. The remaining leaf tissue is usually chlorotic. The treatment for the disease is two-fold. First, a common recommendation is to remove and destroy the fallen leaves this autumn to reduce the overwintering fungus, usually not a practical treatment unless you are able to go through an entire

neighborhood. Next year treat the tree with a Bordeaux mixture as the leaves expand and repeat the application about two weeks later. However, if we do not have another wet spring the disease is not likely to be as severe.

Samples received/site visits

Brookings County **What is wrong with this apple tree? The leaves starting falling off about three weeks ago and there are scabby lesions on the leaves.**

Apple scab symptoms are showing up across the state and some trees have become almost completely defoliated by this disease. At this time of year the only treatment is a rake. This will not reduce the disease for next year but it does clean up the yard.

Minnehaha County

Why are the new leaves so small and yellow on this tree we planted this spring?



I had to visit the tree as the sample was not enough to tell for sure but when I saw the tree, the answer was apparent – planted too deep. The trunk of this linden was going straight into the ground without any indication of a flare. When I spoke with the tree owner they said they planted it at the same depth it was in the container. Unfortunately, trees come too deep in the container and the planting depth must be determined by the first root (place it just below the surface) rather than the top of the soil in the container.

McCook County

The leaves on this maple are pale yellow and becoming black on the edge. What is wrong?

The maple, a silver maple, is afflicted with chlorosis. The high pH make the iron present in the soil less available to the tree and this lack of iron results in pale yellow leaves (usually the veins remain green) that may, if the problem is very serious, turn black along the margins.

Turner County

What is wrong with this Amur maple?

The yellowing to the leaves is chlorosis, an iron deficiency due to the alkaline soils rendering iron into an unavailable form. There is no cure for this problem, other than never plant Amur maples in soils with pH above 7.5. The blackening to the margins of the leaves is due to a disease called Pseudomonas bacterial blight. The disease appears every few years. Since it is a bacteria, not a fungus, most fungicides will not manage the disease. A dormant application – applied just before bud break – of a copper-based fungicide will provide some control.

Union County

What is wrong with this silver maple? It was transplanted this year and the leaves are browning.

This is just transplant stress made worse by the hot, dry weather we experienced this summer – you almost cannot have added too much water then. I recommend mulching around young trees, at least a foot or two out, no deeper than 2 or 3 inches (and leaves a 6 inch open area around the base to keep the mulch from becoming a rodent home). The mulch helps conserve moisture and provide a cooler environment for the roots.

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