Pest Update (October 25 – November 1, 2017)

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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/

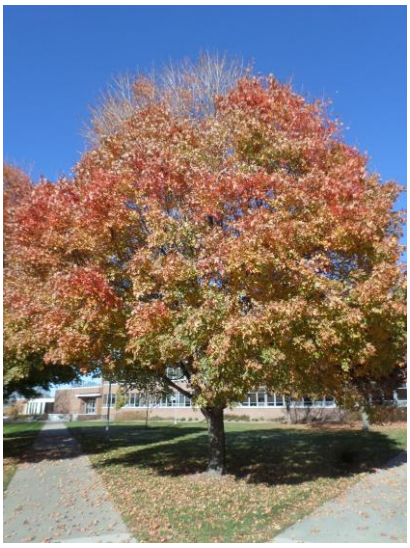
Any treatment recommendations, including those identifying specific pesticides, are for the convenience of the reader. Pesticides mentioned in this publication are generally those that are most commonly available to the public in South Dakota and the inclusion of a product shall not be taken as an endorsement 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.

Plant development for the growing season

During the past few weeks I have received numerous calls and pictures of interior needle yellowing (or browning) on pines and spruce. This is normal autumn

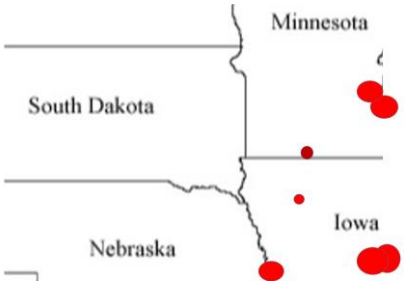
needle shedding that is very noticeable during sunny, mild Octobers. Now calls about arborvitaes turning color are coming in. The yellowing of the arborvitae foliage appear almost as ribbons of yellowing foliage throughout the entire plant. However if you look close it is the older foliage that is coloring. If instead, the tips are turning brown, it is due to a disorder, usually root-related.

The long relatively frost-free autumn is resulting in some spectacular foliage color we generally do not get to see in South Dakota. A number of trees noted for brilliant autumn foliage color east of our state rarely color here as our first frost appears before their leaves begin to change. But not this year! The long frost-free period has resulted in beautiful color on our campus 'Legacy' black maples (*Acer nigrum* 'Legacy'). The leaves of this cultivar usually turn brown in autumn as our first frost comes before the leaves begin to color. Since we just have started experiencing frosts in Brookings, these trees have had time to develop their color.



Emerald ash borer - Update

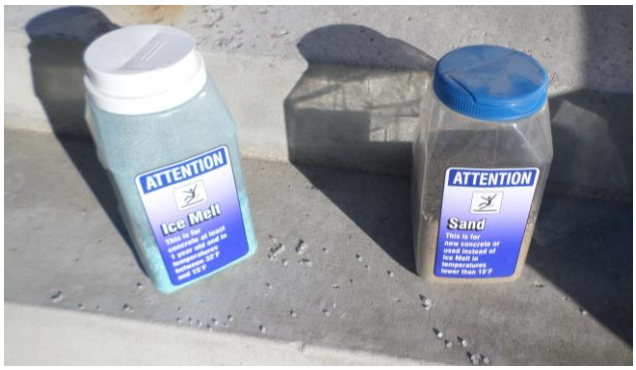
This summer's confirmation of emerald ash borer in Buena Vista County in Iowa, a mere 80 miles from South Dakota, has heightening concern about its eventual presence in South Dakota. The day is certainly getting closer. Confirmed infestations are found in the Omaha, Nebraska and Minneapolis-St. Paul Minnesota metro areas and now in about half the counties of Iowa. The most ominous finding with the Alta, Iowa discovery is that it was about 100 miles from the closest known population in Iowa meaning someone moved infested wood there.



The *Update* will provide weekly information on the location of emerald ash borer confirmed in South Dakota or a bordering county of an adjacent state. ***At this time no emerald ash borer infested trees have been identified in the state or an adjacent county of a bordering state.*** The nearest infestations are highlighted in red; the Twin Cities of Minnesota; Buena Vista County and the counties in central Iowa and the Omaha-Council Bluff area of Nebraska and Iowa.

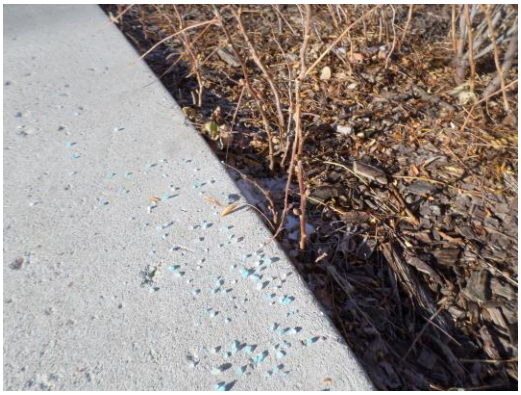
There have been no new infestations confirmed near the South Dakota border. The Omaha region, Alta, Iowa and Welcome, Minnesota are still the closest infestation. At this time of year new discoveries are rare so it appears South Dakota has dodged the EAB bullet one more year, however, we are unlikely to have our string of luck hold much longer and I anticipate finding the insect in the state within a year or two.

Timely Topics



The light snow we experienced this week left some icy sidewalks and driveways. Homeowners are combating these hazards through the use of ice melt products. While these are effective at melting ice, the use of these products may also result in damage to the lawn and ornamental trees and shrub come spring.

Ice melt salts are designed to break the bond between the pavement and the ice allowing the slush to be shoveled off the surface. The three different salts in ice melt products, used alone or in combination, are calcium chloride, magnesium chloride and sodium chloride. Homeowners sometimes wonder if any one of these salts is less harmful than the others in term of plant damage, but the injury is due to the chloride in the salt and all three of these contain chloride.



Chloride enters plants through two routes: 1) being absorbed by the roots though runoff or 2) absorbed through the buds and foliage from aerial deposition. Runoff can result in injury if the plants are growing in a slight depression where melt water can accumulate in the spring or if salt-laden snow has been piled on the plants during the winter. However, chloride quickly leaches through the soil so for most situations runoff and root absorption is not the primary means of chloride entering the plant. Instead, salt as small droplets or as dried dust particles are common means for plants to accumulate chloride.

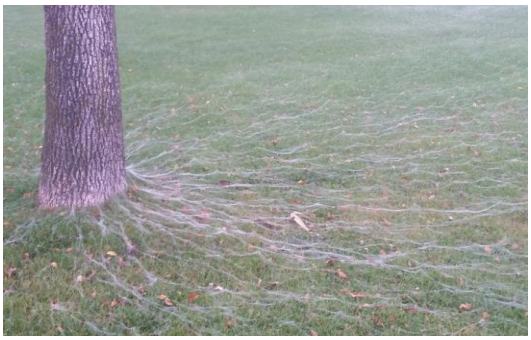
Homeowners can reduce damage to their lawn and ornamental trees and shrubs by 1) using salt substitutes, 2) minimizing their use of salts to clear ice and 3) flushing the salts from the soil and vegetation in the spring.

Sand, cat litter and even sawdust can be used to improve traction on ice. While the overuse of these materials can also create spring clean-up problems, they provide traction when the temperatures are lower than 10^{o}F as salts are not effective at or below this temperature. A little sand, less sand and more shoveling are the best ways to have a safe drive or walk and healthy plants.

The use of salts can be minimized by clearing the snow from the walk or drive and then spreading a light layer of salt over the icy surface. Only apply enough salt to break the bond of the ice to the surface. Once the bond is broken, the icy slush can be removed with a shovel or scoop. It is not necessary to completely melt the ice from the surface, just enough to break the bond.

Finally, once the weather begins to warm next spring, wash all the dried salt from the pavement and soak the surrounding grass and plants with water about three or four times during warm weather so the chloride leaches away from the surface. Next spray water on the buds of deciduous trees and shrubs and the needles of evergreens to wash the dried salt from the plants before it is absorbed.

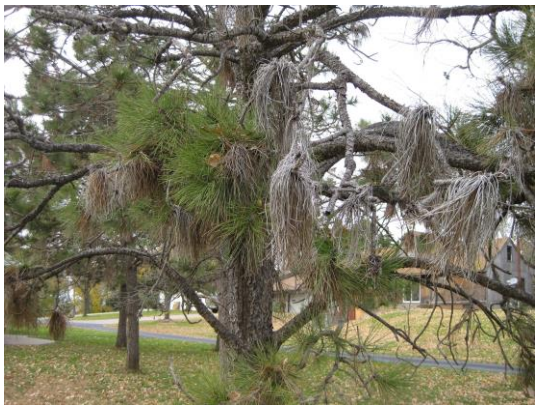
E-samples



Just in time for Halloween – free webbing! No, these are not Halloween decorations but the work of spiders. The long finger-like filaments are spider silk. Spiders can make a wide variety of silk, thick to suspend webbing to capture prey to thin for transporting newly hatched (and very tiny) spiders. This is a common occurrence in autumn (though it takes a morning with heavy dew to sometimes see them) with spiderlings shooting out long strands of fine filament (gossamer) to be captured by the wind and carry them over great distances. Sometime you can find lawns covered with this accumulation of silk or see it wrapped around the base of trees.

The very fine webbing on the lower trunks of hackberries and other smooth barked trees is also a common occurrence at this time of year but this is the work of Psocids, **barklice**, insects that construct fine silky webbing in which colonies of the insect live (they are also known as “bark cattle” since they feed in herds). They feed on microscopic mold, fungi and lichens (as well as other sources of organic matter) so do not harm the tree. They are merely

living on the tree. The webs begin to fall apart around Halloween but may appear again as the insects resume activity in the spring. A high pressure stream of water is sufficient to remove the webbing.



Diplodia tip blight is probably the most common disease of ponderosa pines and I receive pictures like this throughout the year. The disease may be caused by one of two Diplodia fungi, *D. pini* or *D. scrobiculata* and they are both pathogens of 2-needled pines, Austrian and ponderosa the most common hosts. Symptoms of the disease in early summer are the new needles turning straw color and remaining stunted rather than continuing to expand. The infected twigs will become deformed and resin soaked with the older foliage turning gray and hanging from the twig. The treatment is a fungicide containing thiophanate-methyl, propriconazole or chlorothalonil (labeled for treatment of this disease) just before the buds sheaths have opened. Timing is critical, once the bud sheaths have opened and the candle begins to form, it's be a little late to begin the first application and this is the one that provides most of the protection.

Samples received/site visits

Custer County **What is the problem with this ponderosa pine?**

This is dothistroma needle blight (*Dothistroma septosporum*) a common folige disease of ponderosa pines across the state. The most common symptoms are reddish brown spots scattered on green needles. The spots develop a lighter band at the margins and the tips often break beyond these bands leaving a cigarette-like end that is ash-colored. Eventually the remaining needles turn almost complete brown and are shed. The disease is usually more often seen in the older needles near the center of the tree than those towards the tips where they are exposed to drying sunlight. The disease can be confused with many abiotic agents so always best to send in a sample. The disease is managed (but not eliminated) with applications of a copper or mancozeb fungicide made in the spring as the buds open and repeated when the needles are at their full expansion. Ponderosa pines are often treated a third time in mid-July.

Moody County **Why is the cotoneaster row in the belt dying?**

Hedge cotoneaster (*Cotoneaster lucida*) is a tough tall shrub for a windbreak row. It, along with the European cotoneaster (*C. integerrimus*), are hardy throughout the state and adaptable to most soils except those that are wet or moderately alkaline. However, they do suffer from a few serious pests and oystershell scale (*Lepidosaphes ulmi*) is one of them. These scales feed by sucking fluids from the shrub canes and in high populations this feeding can result in cane dieback or even the death of the shrub. The adult scale is sessile, it does not move, and is gray to brown with a shape of a very small (1/8-inch) oyster's shell. The scale is not unique to cotoneaster, but can be found infesting a wide variety of trees and shrubs, cotoneaster just seems to be one of their favorites.

Usually the natural enemies of this scale do a good job of keeping the population under control. Unfortunately they must have been taking a break because every inch of the canes are covered by new or old scales in this belt. The insect can be treated by pesticide sprays either as dormant oil applied in March to kill the overwintering eggs or as a conventional insecticide (active ingredients such as carbaryl, malathion, or permethrin) to kill the crawlers – the young, mobile scales – after they hatch. Dormant oils are sometimes not very effective at high populations as the eggs are very well protected from the oils as they are under the thick shell of (the dead) mom. Conventional insecticides can kill a lot of scales, but might also kill a lot of their natural enemies.

Another treatment is to prune the entire row to within 2 to 3 inches of the ground sometime during March and destroy (burn) all the pruned off canes. This will eliminate the scale population and the new canes will sprout back scale-free. This only works if the cotoneasters are still alive and have not yet died back too much. Cotoneaster sprouts back very quickly and can reach their former height in a few years.

Yankton County **Is my tree safe?**

These are tough calls as everyone want to be assured that their tree is absolutely, positively at NO risk of falling and if there is a chance of failure, the exact time it will fall (Tuesday, the 31st, about 2 pm). Unfortunately our predictive abilities are not that good. Instead we use terms such as probability and likelihood to discuss the risk of failure and its consequences. This means that it's not usually a simple thumbs up or down regarding the fate of the tree and it can be a hard decision to make. You hate to see a tree removed just because it might fall someday.

However, this tree is definitely in the 'cut it now' category. The canopy had been severely pruned back as the limbs died and base of the tree is now covered with the fruiting structures of decay fungi. The fungus, dead man's finger (*Xylaria polymorpha*), was in the soil next to the trunk. This is a wood-rotting fungus that degrades the bind between cellulose and lignin in the wood. The tree had some large root severed to redo the sidewalk and this activity probably contributed to the decline and infection.

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