

Pest Update (July 12, 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.

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Plant development for the growing season

We are right on schedule for plant development, maybe even a little ahead still. The smoke trees are blooming in Brookings just about on schedule. During cooler summer they often begin blooming in the middle of July.

Emerald ash bore - Update

The recent confirmation of emerald ash borer in Buena Vista County in Iowa, a mere 80 miles from South Dakota, is 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 confirmed finding.



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

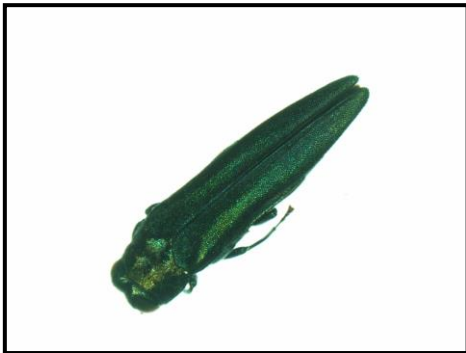
Cities of Minnesota; Buena Vista County and the counties in central Iowa and the Omaha-Council Bluff area of Nebraska and Iowa.



Since the Alta, Iowa find was in the news I have been receiving lots of calls and emails about emerald ash borer. The past week I have been receiving numerous samples of what people believe is the emerald ash borer. Most of the samples received have been the metallic wood borer (*Buprestis confluenta*). These insects are found on the sunny side of trees and logs (though one guy found it in his shirt!). They infest dead and dying aspens, cottonwoods and poplars. The adults are about 1/2-inch long and have fine yellow spots on their wing covers.



The other common adult sample has been the flatheaded appletree borer (*Chrysobothris femorata*). The adults are usually out earlier in the summer, but apparently a few are still about. This borer is a pest of a wide range of fruit tree, not just apple, but all the samples submitted so far were collected from crabapple trees. The adults are about 1/2-inch long and a deep greenish bronze. The wing covers have wavy indented bands.



The emerald ash borer adult is also out flying at this time of year (in areas of Minnesota, Iowa and Nebraska). It feeds on ash leaves so will usually be found in the vicinity of ash trees and can also be found walking on the sunny side of an ash tree. The adult emerald ash borer is about 1/2-inch long but slender with a tapered body. The insect is a metallic green with coppery hues. The upper body is flat and the wing covers do not have spots or

ridges. If anyone believes they have caught an emerald ash borer adult, please contact me via the phone number or email at the top of the *Pest Update*.

Timely Topics



The “growing” story is the widespread drought that is intensifying across much of South Dakota. While it was a nice winter for people, relatively warm and dry, it was tough on trees and most came into spring already under considerable moisture stress. Now a hot, dry summer has turned the moderate moisture stress to severe for many trees and shrubs.

The most common symptoms for moisture stress are leaves that are turning a lighter green than is typical for the species. Affected leaves also are turning brown between the veins and the margins are often crisp. Some trees in the west-central area of the state are already having the leaves curl and fall, a symptom of severe stress. Eventually trees showing severe moisture stress will begin to dieback.

Evergreen foliage on drought-stressed trees, particularly seedlings, is turning yellow to almost purple at the tips of the needles. Some of the older needles on drought-stressed trees, needles that formed three to five years ago, are beginning to drop prematurely.



There is not much that can be done at this time other than water. This is particularly important for new planting, whether they are seedlings in a new windbreak or a tree just planted in a yard. A seedling is going to need between a pint and quart of water per day while a newly planted ornamental tree will need several gallons per day at this time. Most young tree belts are probably not receiving anywhere close to this amount and I suspect there will be a lot of replanting next spring.

Established trees will not need daily watering but still require weekly watering to survive this dry, hot summer. A tree should be receiving an inch of water a week during the summer. If it doesn't rain during the week that translates to watering the equivalent amount of water. How much is that?

Tree roots typically extend out as far as the tree is tall but the critical watering zone is a distance out about 2/3's the height. As an example, if the tree is about 30 feet tall, the watering should occur within 20 feet of the trunk. If the tree is about 10 feet tall, apply about 50 gallons within 6 feet of the trunk. A 20-foot tall tree, apply about 300 gallons within 14 feet of the trunk and a 30-foot tall tree about 600 gallons within 20 feet of the trunk.

The typical lawn irrigation head delivers about 15 gallons a minute so that's about 40 minutes a week to irrigate a 20-foot tall tree. A hose end sprinkler may deliver about 20 gallons a minute (depending on the psi) so that may only mean about 30 minutes or so of watering each week.

E-samples

This is the time of year that the symptoms of rust disease begin to appear on the broadleaf hosts. Rust diseases generally require to different host species to complete their life cycle. The most common tree rust diseases in South Dakota have junipers (*Juniperus*), often referred to as cedars, as one host and the other host is apple (crabapple) (*Malus*), hawthorn (*Crataegus*), or serviceberry (*Amelanchier*).



Cedar-apple rust (*Gymnosporangium juniper-virginiana*) occurs on apples and crabapples. The infection results in yellow to bright orange spots on the leaves that enlarge as the season progresses. Infected leaves often begin to drop in mid-August. The primary Juniper host is the eastern redcedar.

Cedar-hawthorn rust (*G. globosum*) occurs on apple, crabapple, hawthorn, pear and serviceberry.

The infection results in yellow spots on the leaves and, with hawthorn and serviceberry, distorted fruit with horn-like protrusions. The primary Juniper hosts are eastern redcedar and Rocky Mountain juniper.



Cedar-quince rust (*G. clavipes*) occurs on apple, crabapple, hawthorn, mountainash, pear and serviceberry. The infection results in yellow spots on the leaves and, with hawthorn, mountainash and

serviceberry, distorted fruit with horn-like protrusions. The primary Juniper hosts are eastern redcedar, Rocky Mountain juniper and Savin juniper.



Last week I looked at a pear that appears to be infected with a rust. It may be either the cedar-hawthorn or cedar-quince rust. We are looking at it this week and will provide an update next week. Rust on pear is a very rare occurrence.



I am getting a lot of calls regarding trees and shrubs with distorted, cupped and/or curled leaves. The most common woody plants afflicted with these symptoms are lilacs; including Japanese tree lilac, green ash, hackberry and lindens. The culprit is not 8-legged, 6-legged or even 4-legged – it's 2-legged. You guessed it – people. In fact primarily guys who appear to have nothing better to do on a hot, windy day than to spray their lawn with 2,4-D. I have seen several

of these individuals out spraying their lawn in 95°F heat (where the herbicide volatilizes even better, any temperature over 80°F increase the risk of non-target plant injury from herbicide drift) with a 10 to 15 mph wind (which can carry the herbicide several home yards away without any difficulty). This is not the best time to try and spray the weeds in your lawn and it is about the worst time to

spray in regards to the sensitivity of your woody plants. Remind these weed warriors to put the sprayer away until fall.



I am getting a lot of calls on chlorotic maples and many other species of trees. Chlorosis, a symptom where the leaf turns yellow yet the veins remain green, is commonly associated with iron deficiencies in maples and birches on alkaline soils but this year is even showing up on ash and a number of other species. The problem is not the lack of iron in the soil, but the iron becomes unavailable due to the alkaline

soils. Iron is not a mobile element meaning that the tree is not able to move the microelement from older leaves to newer leaves hence iron chlorosis most often shows up on the newest leaves by mid-summer. This summer is even more common perhaps due to the excessively dry soils further limiting root development. At this time of year the best treatment is watering, see the water recommendations under Timely Topics in this issue.



And once again Dog Vomit “fungus” is showing up in organic mulches in the eastern side of the state. While it does look like a dog vomited in your mulch, it’s not a fungus so the name is only half right. This is a mold that usually appears in June or July when the temperatures and humidity are high (and it seems Florida and Mitchell are equally hot and humid this summer). The fungus generally

forms in fresh mulch so most of the calls come in about mulches that have been placed this spring. The only treatment is to break up the mold with a rake to dry it out – it rarely reappears unless you add fresh mulch.

Samples received/site visits

Dewey County

What is wrong with these young cottonwoods? We are watering them.

This is marssonina leaf spot which results in rust-brown to black necrotic blotches throughout the leaves. The disease is beginning to appear on the succulent shoots of aspen and cottonwood trees during the past couple of weeks. The only treatment on young trees is to avoid overhead irrigation which tends to spread the disease better (and our dry summer helps reduce the spread – the only good thing about the drought) and thin out the plants to improve airflow. There are no chemical treatments.

**Kingsbury County
have wilted?**

What is wrong with these lilacs that

The shriveled, water-soaked leaves and blackening tips are common symptoms of the bacterium disease *Pseudomonas syringae*. Bacterial wilt can be found on all lilac but it seems to be prevalent on Japanese tree lilacs and white-flowered common lilacs. The only treatment is to remove infected stems at least one-foot farther down the infected shoots than the symptoms appear and do this pruning during dry weather. I also suggest that the pruners be sprayed with Lysol Disinfectant between cuts to avoid spreading the disease. The disease can also be managed with a spray of a copper containing fungicide made in the spring at bud break.

**Minnehaha County
the pear leaves?**

What is causing this discoloration of

This is pear scab, a disease of pear that is closely related to apple scab. The lesions are usually more blotchy and darker in color than what we typically see on apple and I have even had some people confuse the symptoms with fire blight (though the terminal shoots do not exhibit blackening and curling). The treatment is similar to that for apple scab, fungicide applications in the spring.

Pennington County

What is wrong with my honeylocust?



This is honeylocust pod gall which is caused by a small midge (fly). The adult fly lays eggs in the expanding leaves during the spring. Once these eggs hatch, the larvae feed on the leaflet and this also causes the leaflet to form a pod or ball around the insect. There are about five or so generations a year so as new leaves form during the summer, more pods will also form. The trees are not killed by this feeding activity, the trees just look a little uglier when

all these pods turn brown and begin to drop in late summer. The treatment is to application of an insecticide containing Spinosad on the foliage as it first emerges or an imidacloprid soil drench in the early spring.

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