

Pest Update (May 29, 2019)

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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 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 weather continues to be wet and cool. I have driven across the entire state on several occasions during the past week and had it rain all the way from Rapid City to Sioux Falls! Sounds like we might get some dry weather next week and the entire state could use it!

The nannyberries are in full bloom and the black locust are just beginning to bloom in Sioux Falls. Emerald ash borer adult emergence from trees occurs at about the same time as the black locust bloom (see more on emerald ash borer under Timely Topics).

Treatments to do very soon

Now that the growing season is in full swing there are numerous treatments to be applied. These treatments are necessary to protect the plant from becoming infested or infected by a pest or pathogen. Waiting until you see symptoms of an infestation or infection is usually too late for effective treatments.

Clearwing ash borer treatment with an insecticide containing permethrin as an active ingredient also begin now. The bark must be sprayed to protect the tree as the insecticide will kill the adults as they are walking on the bark to lay their eggs. The insecticide will also kill the newly hatched larvae before they burrow into the wood. Systemic treatments to kill the insect once it burrows into the tree are generally ineffective so injecting a pesticide or pouring one around the soil are not practical means of managing this borer.



The adults are usually out flying about a week or so after Vanhouttee spireas begin to bloom and the shrub started flowering a week ago. You will know the adults are flying when you see the pupa skins (picture above) sticking out of the emergent holes on infested trees.



The new shoots are expanding on spruce so it's time to apply a fungicide to protect against **rhizosphaera** or **stigmina needlecast**. These are the most common foliage diseases of blue spruce. These diseases cause the older foliage to turn yellow by midsummer and then purplish-brown. Usually small black fruit bodies can be found in the spring lining the stomata along the needles. Stigmina needlecast fruiting bodies have fuzzy edges (as pictured above) while

rhizosphaera fruiting bodies are smooth (as pictured to the right). The disease results in premature needle drop and a thin and discolored canopy. The disease can be managed by an application of chlorothalonil now and a second application in about two weeks. If the needlecast is due to Stigmina the applications may have to continue every 10-days till August. It is important to treat the entire canopy, not just the lower branches when treating for Stigmina.



Timely Topics

Emerald ash borers are beginning to fly in Sioux Falls.



Emerald ash borers are emerging now. The emergence will probably peak in late June and then slowly taper off until about August. The adults emerge from a D-shaped hole they cut through the bark. Once emerged, the adults feed on ash leaves (but will also feed on other tree leaves) but really its more nibbling on the leaves than chewing them. The extent of defoliation is so limited that most people will never even notice the feeding.

You probably will not see the adults either. The adult beetle is about 5/16 to 7/16-inch long, torpedo shaped with a metallic green covering. If you are lucky (or unlucky if it's your tree) you might see one walking on the bark. They prefer to be out during warm, sunny days, usually between 10 am and 3 pm.

The most common attractive host for a newly emergence beetle is the tree from which it just emerged. Emerald ash borer is a lazy insect and will not fly far if it does not have to. Most are content to stay close to home, wandering no farther than about 100 yards from the tree they emerged from. They can travel up to 10 miles if they must fly that far for food. This is one reason that communities do not try to remove every ash surrounding an infestation during the summer. You always miss a few infested trees and the beetles emerging from them are forced to migrate. Keeping the trees during the summer is a good means to slow the spread as these nearby trees (and the tree they emerged from) will be the likely candidate to lay the eggs on.

The female borer lays about 50 to 90 eggs, but one at a time rather than as a mass. The eggs are laid in bark crevices, often near when a branch is attached to the stem. The adults prefer to be in the sun, so you often find the infestation starts on the south side of the canopy and near the sun-lite top of the tree.

One way to monitor for emerald ash borer is placing purple panel traps in ash trees. These are not used to control the population – you never can catch enough to stop an infestation – but to determine the extent of the population, essentially where they are at in a community. You can expect to see these in ash trees across the state this summer – and quite a few in Sioux Falls to continue mapping out the spread.

Why are the leaves falling from ash trees?



Curled and cupped ash leaflets.

This is ash anthracnose, a fungal disease (*Gloeosporium aridum*) that affects the leaves and occasionally the twigs of ash. Anthracnose is a general term to describe diseases that present as leaf curling, cupping or premature falling. These diseases occur on ash, buckeye, maple and oaks and while each are due to a different fungus, the symptoms are similar. They also are common during spring where we experience cool (50 to 70°F), wet weather – a perfect description of this year.

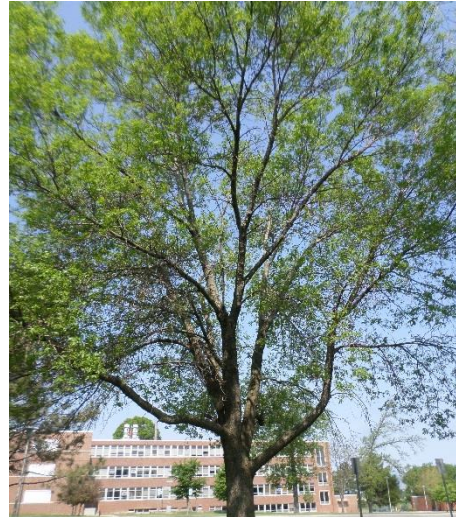
While I have seen anthracnose symptoms beginning to appear on buckeye and maples (and expect to see them on oaks in another week or so), ashes are already affected by the disease. Ash throughout the state are dropping leaves at an alarming rate (to the tree owners) and the fallen leaves are curled and cupped.

This is NOT emerald ash borer, nor are the symptoms even like what we see with this borer. However, there is a heightened awareness of ash across the state and everyone is noticing anything unusual with their trees.

The fungus responsible for ash anthracnose overwinters in infected twigs and in the spring spores “rain” down. This is the reason many of the defoliated ash trees only have foliage at the terminals or near the top of the tree. While this appears serious, it’s not, and the ash will re-leaf in the next couple of weeks. By midsummer the damage will be barely noticed.

There is nothing that can be done to treat the trees at this time or needs to be done. Once the leaves mature, they are resistant to the disease. Also, the spores need cool, wet conditions for the spores to germinate and infect the leaves, once the weather turns warmer and drier (every farmer’s hope), the disease tends to disappear.

Fungicide treatments are rarely effective as the sprays need to be applied just as the buds begin to open and then continued at a 10 to 14-day interval until the weather turns dry. Raking up and disposing of the fallen leaves is not a recommended treatment as the disease overwinters in the infected twigs, not the fallen leaves.



Canopy thinning in infected tree.

At this time, just wait it out and remember in 20 years this will not be much of a problem as emerald ash borer will have killed most of the ash (unless they are being treated for the borer) in the state.

Precautions with morels

Common lilac is in full bloom across the state, so the morel season is in full swing. I have received numerous pictures and samples of morels with the common question; “*Can I eat them?*”. As frequent readers of the *Update* know, don’t eat any fungus until you have gone out with an experienced mushroom hunter so you can learn the critical, but seemingly minor, difference between what is edible and what can make you sick – or kill you.

Morels are considered one of the “foolproof” four and along with chicken-of-the-woods, puffballs, and chanterelle are considered near impossible to confuse but don’t count on it and get some training on morel identification and harvesting (as well as how to prepare them for eating) before collecting.



Pick only true morels (note they have a hollow stem), free of any worms, discoloration, or rot. Harvest by cutting them above the soil level to avoid any contamination. Collect them in a paper bag – never plastic as this will hold too much humidity and increase the potential for rot. Clean and refrigerate as soon as possible.

This year we have the added caution as morels are appearing on land that was recently flooded. These morels should be avoided this year due to potential

chemical contaminants as well as run-off from upstream pastures and feed lots.

Finally, any morels must be thoroughly cooked and not mixed with alcohol. Morels do not mix with some medications and there are some people allergic to them so check medications first and for everyone, the first-time eating morels a taste is better than a meal to be sure they do not bother your digestive system.

But for those that can accurately identify morels, know how to harvest, store and prepare them – this next couple of weeks is going to be great!

Tent caterpillars are on the move.



Tent caterpillars are beginning to create their webs in trees. The caterpillars are leaving their tents to feed so insecticide sprays are the only option for management and the sooner treatments are applied, the better. As the caterpillars continue to become larger, the amount of pesticide required to kill them increases. Ideally any spray is applied before the caterpillars are more than ½-inch long. Waiting until the caterpillars are about 2-inches long is

merely revenge spraying; they have already eaten about everything they can.

The most common available insecticides for managing this insect are ones that contain carbaryl or malathion as the active ingredient. Carbaryl is commonly sold as Sevin while malathion is sold as Malathion. *Remember spraying any fruit tree during flowering will have the undesired effect of also killing any bees that are pollinating the flowers so avoid this time period.*

Homeowners now have another option for managing tent caterpillars and other moth and beetle larvae, Captain Jack's Deadbug Brew™ from Bonide (you have to love the name). This product contains spinosad, a natural insecticide derived from an actinomycete bacterium. Spinosad has been available to commercial applicators for years but now products can be found in the market for homeowners. Spinosad exhibits low toxicity to mammals and while toxic to pollinators at the time of the application, once the residue has dried on the foliage (about 2 or 3 hours) there is little risk to honeybees (*Rev Environ Contam Toxicol* 2003: 179: 37-71). However, I still recommend avoid spraying trees in bloom.

E-samples

Ash bark beetles



I received this picture with the question wondering if these were emerald ash borer holes. No, these are the work of the ash bark beetle (*Hylesinus*). These are small insects that make their home in the twigs and branches of declining ash trees. The larvae are white, C-shaped grubs smaller than a rice grain. They burrow just beneath the bark in parallel tunnels to their siblings, so the emergent holes created by the adults as they exit the bark are in bands around the branch or twig.

The adults lay their eggs on recently dead or dying ash branches so are common in the light-starved branches in the canopies of ash trees. They are very common in windbreak ash trees. However, since they generally attack dead and dying tissue, they are no cause for alarm.

Attack of the checkered beetle



I received this picture with the text that the insect just bit them. This is a checkered beetle, one of the many clerid beetles that are found in our state. They are generally considered beneficial as many of the adult beetles are predators and feed on insects harmful to our trees such as woodborers. The larvae of many checkered beetles are also predators.

Since they are predators – they bite. They usually do not bite people, we don't look (or act) like a wood borer, however if they are disturbed, they will bite. The bite may hurt but the insects are not poisonous.

What are these galls on my arborvitae and what do I spray?



It seems like the reaction most people have when they see something unusual on their plants is to find something to spray. Kool-aid is probably the best treatment, it makes people happy as they got to mix something up and spray, and a very diluted spray of Kool-Aid, grape is good choice, is not likely to cause any harm (note Kool-Aid is not labelled as a treatment for any plant disease – don't try this at home).

Arborvitae (*Thuja*) as do all other conifers, produce two cones, a female cone that is the woody cone we associate with conifers and a male (pollen) cone that is often overlooked. The male cones on the arborvitae are the small (0.05-inch) bulb-like, light green growths at the tips of the foliage on the lower branches. The female cones also have a

similar appearance now, though will expand to a woody cone about 0.5-inch cones by late summer and you can see last year's female cones in the picture. The female cones are usually near the top of the plant and they will not release a dust (the pollen) when shaken.

Samples received/Site visits

Codington County

What is wrong with this spruce and mugo pine?

I could not find any problem with the mugo pine sample. The foliage is the normal color and there were no signs or symptoms of any pest or pathogen in the needle or twig.

The spruce had two problems; 1) spruce needleminer and 2) spruce bud scale. The needleminer had webbed small clusters of discolored needles tightly together and flattened against the branch. There were also some needles that were hollowed-out with small hole near the base. Treat trees with an insecticide containing carbaryl or permethrin in early July when the adult moth is active and laying eggs.



The spruce bud scales are the small reddish-brown globular objects found in clusters at the base of twigs. They resemble buds so are often overlooked. Treat the tree when lindens begin to bloom (mid-June) with an insecticide containing carbaryl or dinotefuran. Imidacloprid can be used as a soil drench in early fall for control the following season.

I suspect there are more problems with the spruce than these two insects. The shoot expansion last year was very short which indicates there was some stress last year – most likely soil-related – that also impacted the trees.

Lawrence County

Why is my hedge dying?

The shoot dieback and wilting leaves are common symptoms of the most prevalent disease of hedge cotoneaster – fireblight. While this disease is often associated with apple, pear, and mountainash trees, it is also common on cotoneasters. Fortunately, the “cure” for cotoneaster is simple. Prune out the dying canes to a height of about 2 inches and then next March rejuvenate the entire 20 feet of hedge by cutting all the canes to a height of 2 inches. The new growth is generally free of the disease and often grows to about 3 feet tall that same year.

Meade County (Mud Butte)

What is wrong with this ponderosa pine?

Are there any trees in Mud Butte? Ponderosa pine is a good tree for this region of the state, but we have seen a few problems out on the plains. First, we have had pine engraver beetles attack pines in the northwest area of the state. The engraver beetles attack stressed trees and the previous season’s droughts have left the trees vulnerable though that may switch with the rains this year.



The other problem, and the one found on the sample, is dothistroma needle blight. This is a common foliage disease of ponderosa pine and infected needles have yellow and tan spots that become red to brown bands with yellow halos. The base of needle remains green and the broken tips have a gray end – almost like a cigarette butt. This is one of the most common disidentified diseases as there are other agents that can produce similar symptoms hence identification of the

pathogen is key for the diagnosis.



Meade County (Sturgis) **What is wrong with this ponderosa pine?**

The symptoms for this samples were almost uniformly pale needles without banding. Some tips had a black discoloration. There were no pests or pathogens associated with the sample so the reason for the needle symptoms must be in the trunk or roots.

Minnehaha County

What might be the problem with this spruce?

The sample had the fruiting structures of *Stigmina* needlecast. This is the most common needlecast disease of spruce and its management is covered in this issue under *Treatments to do very soon*.

Moody County
and Austrian pines?

What is killing the tops of these blue spruce



This was an unusual, though not unheard of, problem with the spruce. If you crawled up to the tops of these 15 to 20-foot trees you noticed globs of pitch, like what you can find on the branch whorls of Austrian and ponderosa pines. And it's a similar problem, a borer, but in this instance, it is the pitch mass borer (*Synanthedon pini*). This insect will attack Austrian, Scotch, and white pine, but we find it sometimes on Colorado (blue) spruce.

The adults, which resemble yellowjackets, are a clearwing moth and they will be flying in June to August. The eggs are laid on the trunks and the larvae, a greenish-yellow caterpillar with a yellowish-brown head will be burrowing into the trunks where it will remain for two or three years before forming a pupa and emerging as an adult.

We typically see this insect only on the eastern fringe of the state and usually do not recommend preventative treatments. The best advice is to remove the infested trees and destroy the wood.

Spink County

Why are the spruce dying?

Last week I drove around with the Dennis from the Spink Conservation District and we stopped at about three places with declining Colorado (blue) spruce. The trees



ranged from 4 feet to 25 feet and some had the usual problems of branch cankers and needle diseases. However, the real problem was below ground. A common symptom of soil-related problems on spruce is purpling needles. While this same symptom occurs with needlecast disease, you can also find purple needles if the trees are too dry or too wet. These trees had both problems. Last year was dry in central South Dakota so the trees were not receiving enough moisture and this year the same trees are standing in water! The one-two punch means that root growth has been limited and the result is shedding of the older needles and discoloration of last year's needles.

Not much can be done except another reminder that spruce, particularly Colorado spruce perform best on good soils that are well-drained and are not adapted to droughty or wet soils.

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