

# Pest Update (June 24, 2020)

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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, 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 for the growing season

The lindens are beginning to bloom in Brookings which is just about average for our growing season calendar. The flowering of these trees coincides with the peak emergence of the emerald ash borer so your chances of seeing an adult beetle are at their best for the next couple of weeks. However, seeing an adult beetle is not very common (but does happen see the update below).

## Timely Topics

### *Emerald ash borer update*



Emerald ash borers are flying in Minnehaha and Lincoln Counties. I was able to take this picture of an adult that just landed on a branch in front of me. It was early afternoon on a warm, sunny day, just the time and conditions that emerald ash borer likes to travel. The adults will also walk along the bark either in search of a mate or to lay eggs.

The adult emerald ash borer is about 1/2-inch long (females may be slightly longer), slender (1/8-inch wide) torpedo-shaped, and metallic green (with a hint of gold) color. They also have very short antennae.

### *Why are my junipers (cedars) turning brown?*

This has been the most common call in the past two weeks and most of the calls are coming from Hughes, Hyde, and Sully Counties. Unfortunately, there is not one pest or problem causing all the browning.



The browning may be attributed to freeze injury from the May cold snap (24°F in Highmore on May 11<sup>th</sup>). Freeze injury presents as a browning (or more often bronzing) of shoot tips, though this sometimes extends to the entire plant. If you scrape the browning shoots, the tissue beneath is brown rather than greenish white. Freeze injury will also not to continue to develop into summer, while some disease may see the symptoms expand throughout the growing season.

We are also seeing diseases on junipers, including *Cercospora* twig blight, across the central part of the state. This is one of three needle blight on junipers along with *Kabatina* and *Phomopsis*. Collectively these are referred to as twig blight.

The reason for the appearance of these disease is the precipitation for the past two years provided the moisture for the diseases to develop.



Phomopsis (*Phomopsis juniperovora*) and Kabatina (*Kabatina juniperi*) twig blight have similar symptoms. The shoot terminals go from a normal bright green (or bluish-green) to yellow then gray. Kabatina symptoms appear in very early spring, usually April, and do not progress into the season. You will see the shoot tips turn yellow and the new growth later in the spring develops its normal color. Kabatina infection occurs through wounds in

the fall (hail or freeze injury) and there are no fungicides available to manage this disease.



Phomopsis twig blight has a similar color change to the tips, from normal green to yellow then gray but the infection and color change begins later, May, and the new growth that continues to form in the summer can also become infected and turn color. Generally older foliage is resistant so the disease is often limited to shoot tips, but entire branches can become infected as well. The symptom pattern generally begins near the top of the

evergreen and then progressing downward. Phomopsis infection begins in the spring and the disease can be managed with fungicide applications, mancozeb is often used (copper also works), beginning in early June with repeating treatments about every two weeks until the new growth slows. This usually occurs in July as the weather turns dry and growth stops.

Cercospora is caused by the fungus *Pseudo-cercospora juniperi*. The symptoms first appear on the lower branches which differs from the other two twig blights. The affected needles turn a dull brown by early summer before becoming gray and dropping. The disease progressively moved from the base to the top of the evergreen as well as from the branch base to the tip. Infected junipers will become thin and open – almost as if they were scorched by fire. This is more a problem on Rocky Mountain juniper than eastern redcedars and repeated years of infection can kill these evergreens. The most common treatment is fungicide applications of mancozeb or copper. The first application should be made a few weeks ago with a second a week ago and a third in mid-July if the weather stays wet.





There is no law that a juniper cannot have more than one of these pathogens and often the only way to tell disease is present is to examine discolored foliage for fruiting structures and spores. Fortunately, the treatment window for Phomopsis and Cercospora are very similar so managing one disease really manages both. However, the treatments should have been initiated several weeks ago and there is little value in starting now.

### ***Frost injury on Colorado blue spruce***



The common symptoms are curling shoot tips, and these often only appear on the south side of the tree (or south side of the windbreak row) or on trees that are in a low location. The spruce shoot tips curled and many tree owners attribute this incorrectly to herbicide drift. Much of this is spring frost injury to the expanding shoot and occurred last May – just the symptoms appear now.

The trees will not be killed by the loss of some of their shoot tips but may appear a little misshapen in the coming years as laterals assume the role of shoot tips. This is probably best corrected by pruning out the curled tips back to a live bud or side branch.

### ***Chlorosis appearing on trees***



I have seen numerous trees that are turned a bright yellow such as this pin oak (*Quercus palustris*) in Sioux Falls. Usually if you look close at these trees you notice that while the leaves are yellowish-green or even yellow, the veins in the leaves are still green. Typically, the youngest foliage, the leaves on the tips, are showing the most severe symptoms.

The most common reason for chlorosis is the lack of iron in the leaves (though manganese deficiencies may be a problem with maples). It is not that iron is lacking in the soil, it is just that the alkaline soils have rendered the iron insoluble and not available to the plant. The trees that are most

sensitive to an iron deficiency are red oak and swamp white oaks along with river birch. Silver and red maple may also suffer from iron deficiencies but chlorosis in maples may also be from a manganese deficiency or both iron and manganese. During stressful years, either too dry or too wet, where root growth is limited, we can also see chlorosis occurring on apples, crabapples, catalpas, and plums among other tree species.

The soil pH is the real problem. Ideally the pH is less than 6.5 but even up to 7.3 we do not see a lot of symptoms appearing. Many of our urban soils have a soil pH of 7.8 to 8.0! Trying to lower soil pH is difficult in South Dakota as our soils are buffered and the amount of sulfur to be added would almost make the ground crunch! While changing the pH may not work, increasing the organic matter of the soil with a layer of leaf compost/wood mulch place on the surface will help over time by increasing the array of soil micro-organisms that may aid in element uptake.

Adding iron to the soil will not usually help as this added iron also becomes unavailable due to the alkalinity (though adding a chelated form of iron will work). Iron and manganese can be directly injected in the trunk, a means of bypassing the roots, and this technique is highly effective but needs to be repeated about every two to three years. Mild symptoms may lessen this year if the tree owners just are sure to water during the hot summer, but the real problem is the tree is in the wrong spot. Always know the pH of the soil *before* choosing which tree to plant.

## E-samples

### *Birch leafminer*



This is a river birch with blotches on the leaf. If you look closely at the blotches, you will notice that the upper and lower leaf tissue is intact, but the interior is gone and replaced with tiny pellets. The pellets are frass (insect poop) and the missing tissue is due to the feeding by the birch leafminer (*Fenusa pusilla*) a small insect that feeds in the larval stage inside the leaf. The larvae hatch on the newly expanded leaf and feed for several weeks before dropping to the soil and pupating.

There are two generations per year so adults are usually out in mid to late June and lay eggs on the newest foliage and the cycle begins again. This insect feeds on the leaves of all birch but seems to be most noticeable on river birch. Generally, treatments are not necessary as an otherwise healthy birch can withstand having almost 2/3's of its leaves mined before it is significantly stressed by the event.

### ***Emerald ash borer look-a-like***



Pictures are often sent in of what people believe is an emerald ash borer. So far, none have been this insect. The most common one submitted is the green metallic wood borer (*Buprestis confluenta*). This insect is native to the Great Plains and Front Range and contents with feeding in dying poplars and cottonwoods among other hosts. No one would even notice them if not for its relative the emerald ash borer.

### ***Plum pockets***



The swollen fruit is usually larger than the normal plum and has a leathery surface. If you cut open an infected fruit, you will find it is hollow and lacks the large “stone”, the seed. The disease is common on our native American plums but rarely is found on the European or Japanese fruit plums. There is no effective treatment at this time of year other than remove and dispose of any infected fruit. Treatments at the proper time, early spring just before the buds open,

are rarely effective due to the difficulty of spraying at just the right time. If treatments are desired, use a fungicide containing copper or chlorothalonil as the active ingredient.

### ***Spindle galls on cherries***



Elongated galls are appearing on cherries and other tree species such as basswood and elm. These slender, elongated galls on the upper surface of the leaves begin green but often turn red as the season progresses. The galls are due to the activity of eriophyid mites. While they are not attractive, the galls do not harm the tree and no treatments are recommended. No worse than pimples on a teenager.

### **Samples received/site visits**

Bon Homme County

**What is wrong with my ash tree?**



This is the **ash leaf curl aphid** also known as the woolly ash aphid (*Prociphilus fraxinifolii*) and it is showing up across the state again this year as it frequently does each summer. The symptoms are curled leaves forming rosettes at the ends of ash shoots, especially the rapid growing terminal shoots. If you unfolded these curled leaves, you find these little “fuzzballs” that are aphids (and they move very quickly once you open the bag they are in).

Treatment is usually either letting it be – since any treatment will not uncurl the leaves and lady beetles do a pretty good job of control – or a trunk injection of an insecticide containing acephate or dinotefuran as the active ingredient. These work as a systemic and will kill the aphids as they feed on the leaves (but this should be done in early spring, just after the leaves open) Most foliage applied insecticides are contact poisons and will not reach the aphids living inside the curls.

#### Brule County

#### Why are the leaves on this maple full of holes?



The holes and ragged margin to these Norway maple leaves is called leaf tatters. This is a common problem with Norway maples this year and the injury is believed to occur from cold weather injury just as the buds or leaves are expanding. Small groups of cells are killed, and this creates pockets or holes as the leaf reaches full size.

This is a major problem with Norway maples and catalpas this year. The May 10-11<sup>th</sup> frost caught both these trees at the worst possible times. The buds were just beginning to expand and susceptible to this type of injury.

#### Minnehaha County

#### What is causing this distortion and discoloration on the bur oak leaves?



This is oak anthracnose, a fungal disease we occasionally see on oaks when we experience a wet spring. Common symptoms of an infection are necrotic spots and distortions on the mature leaves. The young foliage may shrivel and hang from the twigs. Severe infections may also result in twig dieback. There is no effective treatment once the symptoms begin to appear, but the disease is not a serious threat to the health of the tree. We do not see the disease that much, but the past two wet years have built up the problem.

Turner County

### **What are these spots on the silver maple leaves?**



These are maple bladder galls and they are created by the feeding activity of a very small mite. The pin-size bumps on the leaves turn several colors, green, red, and black, as the season progresses and by August some leaves are completely covered with the galls. Surprisingly, the galls do little harm to the tree, so no treatments are needed (nor do they work once the galls have formed).

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