South Dakota State University Extension

Tree Pest Alert

May 24, 2023 Volume 21, Number 14

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Samples

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of 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.

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 as 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.

Reviewed by Master Gardeners: Carrie Moore, and Dawnee Lebeau

This publication made possible through a grant from the USDA Forest Service.

Plant development for the growing season

Spring weather is now staying warm with daytime temperatures in the mid-80s°F. The nights have been warm as well with only a few nights dipping into the high 30s°F.

Here are the growing degree days (GDD-base 50) for communities across the state.

Aberdeen	325
Beresford	529
Chamberlain	493
Rapid City	402
Sioux Falls	494

Apple, crabapples, and many of our spring flowering trees have finished blooming. Black locusts (*Robinia pseudoacacia*) are flowering now in the southeastern quarter of the state. The long racemes of white flowers are very fragrant and hard to miss both by the eyes and nose! The appearance of the blooms also coincides with the emergence of the emerald ash borer.

We are still dry despite the abundant snow this past winter. Except for the west-central and northeastern parts of the state, the rest is classified as either abnormally dry or moderate drought.

Treatments to Begin Now

Cedar-apple rust

Cedar-apple rust galls on the junipers have expanded during the past week; this is an indicator to begin treatments to protect susceptible apples and crabapples from cedar-apple rust. The galls have developed their gelatinous, orange telial horns that will release teliospores that infect the apples and crabapples. The horns expand during wet weather and then shrink down

during dry spells. They can expand and contract several times.

The teliospores can be carried as far as six miles, though most apple and crabapple infections occur within three hundred feet of the cedar. The infection on apples and crabapples results in discolored foliage and fruit and premature drop of the leaves. Fungicides containing myclobutanil as the active ingredients can be applied beginning now and repeated three more times at 7 to 10-day intervals. Captan, a common fungicide for apple scab control is NOT effective against cedar-apple rust.

Spruce needlecast disease

The new shoots are expanding on spruce, so it is 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, in the spring, small black fruit bodies can be found lining the stomata along the needles. Stigmina needlecast fruiting bodies have fuzzy edges while rhizosphaera fruiting bodies are smooth. The disease results in premature needle drop and a thin, discolored canopy.

The disease can be managed by an application of a fungicide containing chlorothalonil as the active ingredients and labelled for this use. The first application should be applied 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 until August. It is important to treat the entire canopy, not just the lower branches when treating for stigmina.

Timely Topics

Emerald ash borer update

Fully formed adults are appearing in the overwintering chambers in the sapwood. When these were extracted from their overwinter chamber, they reacted like anyone who was awakened a little early – confused and staggering about. They quickly recovered, however, and took flight. These adults would have taken a few more days to move themselves out of their pre-constructed tunnel and chew their way out of bark. Adult emergence should begin on Memorial Day.

Pine engraver beetle adults are burrowing into slash piles

We are seeing adult pine engraver beetles (*Ips pini*) burrowing into freshly down branches and slash piles. The first-generation adults are attracted to fresh pine branches as these still have inner bark that is a suitable food source for their young. Down branches also lack the resin defenses of living trees – the sticky resin - so the adults and their young can tunnel without the risk of drowning in sap.

The problem will be in about 40 days when the second-generation adults emerge from these down branches and slash. The wood will have dried out so it will not be attractive to the new adults. If the weather stays dry, nearby pine trees will not produce sufficient resin to prevent successful attacks.

Pine looper update

If you were driving east of Pringle on Hwy 385 last fall you saw a sight that we have not seen for almost twenty years. The long ridge along Beaver Creek had almost every pine from seeding to mature tree completely defoliated. The overall appearance was long ribbons of gray against the hills.

The culprit was the pine loopers (*Phaeoura mexicanaria* syn *Nacophora mexicanaria*). The pine looper is native across the West, including the Black Hills, but are rarely noticed as they are usually few in numbers. Defoliation is typically confined to a few trees scattering within the forest.

But occasionally the population explodes and the defoliation extends over tens to hundreds of acres. This defoliation is never widespread across the entire Black Hills; the last outbreak was in the early 2000s. That one also occurred in the Southern Black Hills - but against the backdrop of the mountain pine beetle epidemic was mostly ignored.

Healthy pines can withstand one year of defoliation but with the drought most pines are not healthy. This means that the defoliation, combined with the drought, may

increase the susceptibility of the trees to pine engraver beetles. Past defoliation episodes have experienced severe outbreaks of the engraver beetles in affected stands.

The trees are candling normally so new shoots and needles will be appearing soon. The pine engraver beetles are not attacking the trees. These are two good pieces of news for this forest. But there may be some note of concern.

Typically, the looper populations collapse as rapidly as they expand and defoliation is limited to a single year. During our survey last week, we were able to find numerous - and alive - pupae in the soil. There were some that had been eaten and a few that appear to be infected with a fungus. *Paecilomyces farinosus* has been identified as a pathogenic fungus that infects the pupae.

There are too many live pupae. If they all survive to the adult stage this might result in a second year of defoliation. The pines can survive one year of defoliation but two can be fatal.

We will monitor adult emergence and flight. If the population is high, landowners may want to consider treating their valuable pines - those around the homes for example – with an insecticide. The treatment would be applied at egg hatch – late July – to kill the young larvae before they do any damage.

E-samples

Inky Caps appearing in lawns

People are sending in pictures of mushrooms coming up in their lawn. The mushrooms are appearing in clusters and seem to appear almost overnight. These are inky caps.

Inky caps are a collective term for a large group of fungi that are common to Europe and North America. The name inky cap comes from the black liquid produced as the mushroom disintegrates. The mushrooms appear after a few spring rains but will disappear as the weather turns hot and dry.

Inky caps require a lot of organic matter in the soil as this material serves as its food source. We typically see them sprouting around spots where there was a large tree such as an elm. The tree may have been removed a decade ago but there is still enough organic matter produced by the decaying roots to feed the fungus.

Many inky caps are edible BUT there are look-a-likes that are deadly. Never collect mushrooms unless you are certain of their identification – do not Google it! Go with an experienced mushroom hunter.

Black knot on chokecherry

The elongated black galls around chokeberry branches are the fruiting structures of the fungal disease called black knot (*Apiosporina morbosa*). The infection results in darkened galls on common chokecherries and plums.

These galls can completely circle a branch. When this occurs, the infected branch is girdled and the leaves and shoots distal to the gall die. If the galls encircle the trunk, the entire tree may die.

The black galls are releasing spores now. These spores will infect other shoots. The first-year infection is barely noticed – it results in slight swelling to the twig. This will also produce a velvety olive covering in a year. The following year the blackened galls – the black knot – appear.

Fungicides have limited effectiveness but may be useful if combined with pruning. The most common are copper fungicides applied at bud break (before bloom).

Pruning out the knots alone rarely provides adequate control. There are always more infected shoots than can be seen as the slight swelling for the first-year infection is difficult to see. Also, once a tree is infected, it will always be infected. Sometimes the best treatment is basal pruning – removing the tree.

Samples received/Site visits

Custer County, Tent caterpillars

There are a lot of chokecherries West River covered with the silky, cotton-candy like nests of the western tent caterpillars (*Malacosoma californicum*). They are beginning to leave their nests to nibble on leaves but still return to the protective cover of silky threads. As the caterpillars continue to grow, the amount insecticide required to kill them increases.

Ideally the treatment is applied before the caterpillars are more than one-half-inch long and we are coming to that point within a week. Treating now will reduce most of the defoliation as the caterpillars have a lot of feeding ahead of them. Waiting until the caterpillars are about 2-inches long is merely revenge spraying. They will have already eaten about everything they can by that time.

Hughes County, Declining spruce follow-up

This is a follow-up to the spruce described in the May 17 issue of the *Pest Alert*. The problem was not due to winter injury but the soil. The site is the typical gumbo soils we see in the neighborhoods north of Pierre.

“Gumbo” is a generic term for heavy clay soils that are impermeable to water infiltration. Water tends to flow off these soils rather than soak in, but if they do soak in, the soil stays wet. This is the worse combination for trees – it is always either too dry or wet.

When you drive through these neighborhoods that dot the landscape north of Pierre, it is rare to see a healthy spruce. Most are stunted, thin or dead. The common question is – should we fertilize the trees? No, the problem is not lack of nutrients but obtaining moisture. This means careful irrigation, so the soil receives just enough water for the roots to grow, but not enough to drown them. Do not add sand – this will not improve drainage. It will make the problem worse.

The evergreen tree that thrives in these neighborhoods is the Austrian pine (*Pinus nigra*). Unfortunately, Austrian pine is very susceptible to pine wilt disease and this disease is common in the state.

Kingsbury County, Hackberry defoliation

The hackberries in the yard appeared defoliated with the sparse foliage drooping and tattered. The problem was not an insect or pathogen but the unpredictable spring weather common to our state.

We experienced some hot weather in April. It was almost 90^{o}F in Sioux Falls in the middle of the month but then we had freezing temperatures about a week later. This caught the hackberry just as the buds were beginning to expand. Expanding buds and young leaves are tender and susceptible to frost injury. Trees such as basswoods began leafing out earlier and were more resistant to frost. Other trees, such as oaks, were still in the bud stage so the leaves were well protected from frost.

Hackberries and ash are the two trees that seem to start leafing out just when frosts are most likely to occur. The good news is that the hackberries will soon put out new leaves and the damage will disappear.

Lake County, Ash anthracnose

This is a common fungal disease of ash and some years the disease can result in completely defoliated trees by the middle of June if we have wet, warm weather. We have not had a lot of this weather yet but there has been enough to start the disease on susceptible ash. I am already seeing ash trees with many of their leaves lying on the grass beneath them – it looks like early fall.

The common symptoms of ash anthracnose are blotches and distortions to the newly expanding leaves. The infected leaflets will often have a slight curl. These will fall individually rather than as the whole leaf. The ground beneath infected trees can be littered with tiny, deformed leaflets.

Usually, infected trees produce a second crop of leaves by the end of June, so the problem is short-lasting.