South Dakota State University Extension

Tree Pest Alert

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In This Issue

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 listing 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

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Plant development for the growing season

The weather has become a little warmer. We saw a few 90-degree days during the past week, but nights still dipped into the 40s. A little rain also fell in some areas of the state.

The warm weather has accelerated the growing degree day (GDD-base 50) accumulation. Many sites added another 100 GDD during the past week. Here is the current GDD for communities across the state.

Aberdeen	636
Beresford	797
Chamberlain	785
Rapid City	595
Sioux Falls	760

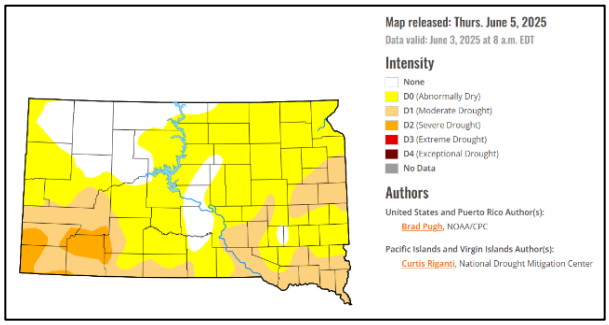
Japanese tree lilac (*Syringa reticulata*) is in bloom in Brookings (GDD 640). This is one of late spring flowering trees. The white flowers are showy, but not fragrant. At least not a fragrance you might enjoy. Some have a mushy privet-like odor. But there are others that have a sweet, honey-like fragrance. Cultivars have a nicer fragrance than the species.

Drought monitoring

The light rains during the past week have reduced the drought intensity in much of the state. About 20% of the state is no longer classified as drought. Another 50% of the state is classified as "Abnormally Dry." Only 4% of the state, the southwest corner, is classified as "Severe Drought."

Despite the improving conditions, my rain gauge – the Wall Drug sign at exit 131 I-90 – still is dry. Many years there is a pond surrounding the sign. This year there is only bare, cracked soil. We are still behind in subsoil moisture.

Here is the current map from the National Drought Mitigation Center at the University of Nebraska-Lincoln.



Treatments to Begin Now

Spruce needleminer

Spruce needleminer (*Taniva albolineana*) larvae dropped from their webbed nests several weeks ago and formed cocoons in the soil. They begin emerging as adults at about 800 GDD in South Dakota so the small gray moths are just starting to fly in southern South Dakota. Previously infested spruce trees can be sprayed with an insecticide containing Carbaryl as the active ingredient (and labelled for this use) to kill the adult moths before they lay eggs.

Timely Topics

Emerald ash borer update

Adult EABs are still emerging from their ash host in Minnehaha, Lincoln, and Union counties. Peak emergence – where half have emerged for the season – is not until about 1000 GDD. The adults live about three weeks.

The adult EAB is torpedo shaped and about 3/8 to 1/2 inch long but only 1/16 inch wide. They are a bright metallic green. These beetles fly during the day but are rarely seen as they stay in the sunny upper canopies of ash trees feeding on leaves.

The adults feed on ash leaves. The feeding does not defoliate the trees – more like nibbling. The female EAB adults must feed on the leaves before she begins to lay egg and will continue to feed on leaves between egg laying – maybe they taste like pickles.

Pine engraver beetle updates

We are surveying green slash piles in the Black Hills to monitor development of pine engraver beetles (*Ips pini*). The adult beetles were beginning to burrow into green slash in mid- to late May (see May 21 Tree Pest Alert). Now there are many nuptial chambers where the male and his group of two to three females mated.

The females have started constructing their own galleries off the chamber. There are small niches along these galleries where the females are laying eggs. The eggs will be hatching soon. The small white larva will burrow along from the egg gallery and feed for about two weeks before they pupate then emerging as adults.

The second generation of adults will be flying about June 25. If there is more green slash they will be content to burrow into this material. If there is no green slash, these adults may attack standing pine trees, especially drought stressed trees.

Trees are susceptible to attack if the April to June precipitation is less than 75 percent average. The average precipitation for this period is about 8.5 inches. So far, many areas of the Black Hills have received snow and rain to be at or near average for the spring. If we receive average June rainfall, we might be able to avoid significant losses of ponderosa pines to this beetle.

Siberian elms with foliage only at the branch tips

There are many Siberian elms (*Ulmus pumila*) that look tufted this spring. There is a cluster of leaves at the shoot tips but a long gap just behind them that is devoid of leaves. This odd display is more common West River than East River.

The reason is that Siberian elm had a bumper seed crop this spring. The small wafer-like samaras were in thick clusters along the expanding shoots. Flowering and fruiting preceded leaf development so a heavy seed crop creates a gap on the shoots between last year's growth and the leaves for the current year.

Spring temperature fluctuation injury

The May temperature fluctuations we experienced – 90s in one week and 30s in the next – caused injury to trees that were leafing out during that period. I am still receiving many images sent as text or emails.

Hackberry (pictured), honeylocust, and maple have been slow to leaf out this spring. Some began to leaf out only two weeks ago. The new leaves or leaflets are tattered and many have a black margin. These trees will recover this year if they receive adequate irrigation. Most trees will flush with a new set of leaves during June.

Viburnum clearwing borer

Duane, a retired city forester and entomologist, sent in this picture of an adult viburnum clearwing borer (*Synanthedon viburni*) in Sioux Falls. This borer infested the American cranberrybush viburnum (*Viburnum opulus* var *americanum*).

The adult borer mimic wasps, a protection from birds and other predators. The adults are bluish black with clear wings. They emerge in June (500 GDD) and lay eggs on the lower stems of viburnums.

Once the eggs hatch, the larvae tunnel just beneath the bark. Infected shrubs have swollen lower stems. These infested shrubs may dieback or have the stems snap where the larvae are feeding.

An insecticide containing Permethrin that is labelled for this use may be applied in early June to kill the adults as they are laying eggs.

E-samples

Apple scab infected leaves are falling

I am receiving many pictures of lawns, driveways, and sidewalks covered in apple and crabapple leaves. The fallen leaves are distorted and have dark blotches. The affected trees often have only a few leaves on their shoot tips. The rest of these trees are bare. It almost looks like fall.

The premature fall appearance is the result of a severe apple scab infection this spring. The state experienced mild, wet conditions for several weeks this spring. This was the perfect recipe for infection.

There is nothing that can be done now but to rake. The pathogen is already in the leaves. While a fungicide treatment now might reduce some secondary infection, the defoliation is so severe in many instances that the benefit of spraying will be minimum.

The time to begin spraying fungicide for apple scab came back in late April as the buds were swelling. These treatments were repeated every 10 days to provide a protective film to kill the scab spores as they germinated on the leaves.

Crown rust on common buckthorn

Crown rust (*Puccinia coronata*) is beginning to appear on common buckthorn leaves. The disease causes yellow to orange spots on buckthorn leaves and petioles. While no one cares about buckthorn (except for the few folks that think it is a non-flowering crabapple in their yard), I usually get a few pictures of this disease every year. As with apple scab, it may become a bad year for this disease as the cool, wet conditions were perfect for the development of the disease.

Crown rust, as with most rust diseases, alternates between two hosts. In this instance, the other host is oat. This is a serious disease of oats and can reduce yields to 20 percent. One common recommendation for management of this disease is to remove all buckthorn within a mile of the oat field. Considering the amount of buckthorn growing in windbreaks across the state, this is almost an impossible task.

Woolly oak gall

I am receiving numerous oak leaf pictures such as this one showing a fuzzy or woolly looking gall. These are one inch long reddish to whitish galls are formed by the larvae of a tiny cynipid wasp (they do not sting!).

These cynipid wasps are called ‘cell pirates’ as the larvae inject of growth regulating chemicals into the plant tissue causing it to form this gall around them. The young live inside the galls now perfectly protected from the environment and predators. Many of the galls form on the twigs, such as the horned oak gall, and others such as the hedgehog gall form on the leaves.

Treatment of oak galls is usually not necessary and most attempts at control are ineffective anyway. The lifecycles of these pests are poorly understood and complex, so treatment windows are not well defined.

Samples received/Site visits

Davison County, Native ash borers in dying ash trees

I was asked to look at a row of green ash with several trees presenting with severe dieback and decline. There were some watersprouts and light blonding on the bark of these trees. These symptoms are like those we often see with ash infested by emerald ash borer.

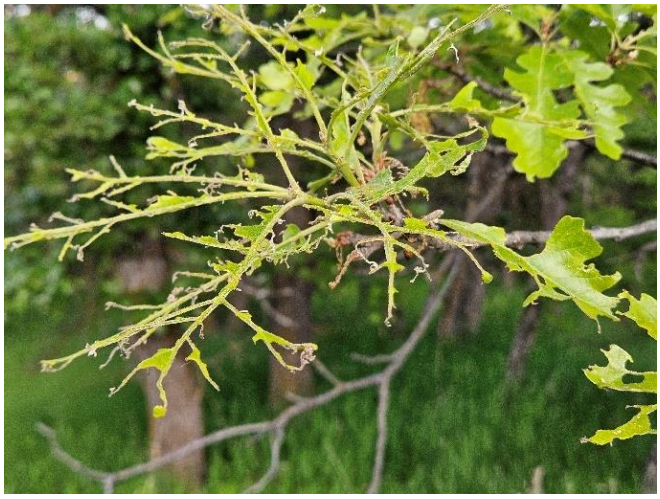
These trees are infested with our most common native ash borers. The large – pencil-size – holes are from the clearwing ash borer (*Podosesia syringae*). These borers will construct holes to the surface so there will sometimes be fine wood powder at and below the holes. These holes were created by last year's borer. This year's larvae are burrowing inside the tree during the summer.

The smaller, most oval-shaped holes are exit holes of either the banded ash borer (*Neoclytus caprea*) or the redheaded ash borer (*Neoclytus acuminatus*). These native ash borers create galleries that are like those made by the emerald ash borers, but their galleries are more meandering than the tight serpentine galleries constructed by EAB.

These native borers attack stressed and dying ash. The planting site is not ideal, growing in stone laid on plastic, surrounded by pavement.

Lawrence County, Fall cankerworms defoliating bur oak stands

The northwestern part of the state from Spearfish to Bison is experiencing a third year of defoliation on their native oak stands. The leaves are being devoured, except for their veins, by the fall cankerworm (*Alsophila pometaria*). Cankerworms are common on basswood, elm, linden, oak, and maple. Bur oaks stands are the ones experiencing heavy defoliation again this year.



This native insect is also known as a looper. This name comes from the larval form of locomotion. The caterpillars have three pairs of legs on their thorax near the front of their body and three pairs of prolegs near the end of their abdomen. They move by stretching their front legs out and gripping them, then pulling their back legs up; the motion is like a slinky toy going down the steps.

The larvae have two color forms: light green with white lines running along the body or dark brownish green with a black stripe along the body (pictured). The mature larvae are about one inch long.

There is one generation per year. The larvae feed until mid-June then they form a long thread and lower themselves to the ground where they form pupae in a cocoon of silk and soil debris. They remain in the soil until fall when the adult moths emerge. The female moth does not fly but crawls up the nearest tree to lay eggs which remain dormant until spring.

Since the larvae have almost completed their feeding there is little value for spraying. The treatment should have been applied two or three weeks ago.

Pennington County, Bronze birch borer in purple leaf birch

This stop was to look at two purple leaf birch with severe dieback. These are the Crimson Frost birch (*Betula* 'Crimson Frost') which is a cross between an Asian (*Betula platyphylla*) and a European birch (*Betula pendula*).

These two trees are very susceptible to attack by our native bronze birch borer (*Agrilus anxius*). Many trees survive less than ten years in the landscape until they receive preventative treatment for the borer.

These trees had been planted about ten years ago. The borer attacks were evident by the lumpy bark covering the serpentine galleries of the borer. While treatments are effective, these trees will not recover so removal is recommended.

Pennington County, Normal needle drop on Austrian pine

The tree owner was concerned about all the needles that were shed last fall from this Austrian pine (*Pinus nigra*). There was still a thick layer of detached needles lodged in the canopy. While this may appear alarming, it is normal needle drop.

Last year's foliage appeared as healthy dark green needles. The needles formed during 2023 and 2022 were also still attached and were their normal length and color. The four-year-old (2021) needles were shed last fall but that is completely normal.

Turner County, Fabric girdling junipers

Some of the junipers in the windbreak are beginning to discolor and die. They were planted as part of a windbreak about twenty years ago.

There were no symptoms or signs that are associated with the common twig blight pathogens. Instead, the decline is girdling by the fabric placed down when the windbreak was installed. Most of the fabric has become covered with soil and debris over the past two decades.

The covered fabric – protected from degradation by sunlight – is still intact. The discolored and declining shrubs have the fabric imbedded in the trunks. The landowner needs to remove the fabric from around the base of the trees with a sharp knife– hopefully done during a cool, cloudy day!