South Dakota State University Extension

Tree Pest Alert

June 28, 2023 Volume 21, Number 19

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 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

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

Plant development for the growing season

We are truly two states – East River and West River - in many ways but one current difference is the weather. The west is cool and moist, the east is hot and dry. Some of the grasslands in the west are as green as Ireland, while the southeast looks like Death Valley.

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

Aberdeen	1,110
Beresford	1,340
Chamberlain	1,230
Rapid City	910
Sioux Falls	1,295

Driving across the state you can see the native and naturalized elderberries (*Sambucus*) in bloom. The large flat clusters of white flowers are hard to miss.

All West River except for Lyman-Gregory-Tripp Counties are classified as "None" on the US Drought Monitor. It is their year for rain. The drought intensity for the rest of the state is either Abnormally Dry or Moderate Drought (except for a few East River counties – Edmunds, McPherson, and Walworth). The southeastern quarter of the state is still very dry. This area is under Severe or Extreme Drought.

Treatments to Begin Now

Apple maggot treatments should continue (see *Pest Alert* June 14 issue). Fungicide injections to protect American elms from Dutch elm disease should be started or repeated (they are done every three years).

Pine needle scale

The second generation of pine needle scale is beginning to hatch. The young nymphs (crawlers) have moved out from beneath mom's shell and are exploring the new needles for a place to settle down. This generation will feed this summer, become adults, and produce the overwintering eggs for next year's population.

A common treatment recommendation for controlling scale crawlers is 2% horticultural oil. Oil coats suffocate the crawlers but have far less impact on their nimbler natural enemies that can escape the spray (it does not last long). However, during hot (above 85ºF), humid (80%) weather when plants are drought stressed – most of East River - oils can damage the plant as they interfere with transpiration. The oil can plug up the stomates in tree leaves just as well as they do the spiracles on insects, and this reduces transpiration.

Unfortunately, many common insecticides do a decent job at killing the enemies of the scales as well as the scale crawlers. The only reason to resort to killing everything is if the pine is covered with scales (more than four per current year's needles). It is better to apply an insect growth regulator, such as products with the active ingredient (A.I.) pyriproxyfen. This A.I. has limited impact on the natural enemies of scales. It is available to commercial applicators.

If you are East River – water!

The one treatment most of our trees need right now is a surface application of H_2O; they need a drink – especially every tree in the southeast!

Timely Topics

Emerald ash borer update

The peak of adult beetle emergence has passed. This means there will soon be many eggs hatching. The tiny larvae will begin threading their way into the inner bark (phloem) to feed for the summer.

The early riser adults that emerge in late May laid eggs several weeks ago and these are already hatching. There are already a few first-instar larvae already feeding in ash trees.

Pine looper update

The adults have been flying in higher numbers during the past week. Our passive light traps are also capturing moths at night, some are night owls while others prefer flying during the day. While we find adult moths flying along the ridge that was defoliated last year, we need to see where they are laying eggs.

Hopefully, that question will be answered during our upcoming egg survey. If the eggs are concentrated on the new growth of the trees defoliated last year, then we expect to see significant pine mortality. If the eggs are laid in nearby stands that were not affected by defoliation, then the pines defoliated in 2022 have a good chance of surviving.

Larvae should begin to appear within two weeks. The staggered emergence as adults means that eggs will continue to be deposited in July with larvae appearing through August. Our survey will be finished before the egg hatch so there will be time to treat it if needed.

The time to treat high-value pines, those adjacent to homes nestled along the ridge defoliated last year, will be coming up beginning in mid-July. This insect so rarely appears there are no insecticides specifically labelled for its control. There are many insecticides, however, that are labelled for treatment of lepidopterous larvae on conifers.

If the pines defoliated last year are going to be infested again this year, treatment options will be provided in the *Pest Alert*.

E-samples

Bronze birch borer

All the focus on emerald ash borer means we forget about its close cousin, the bronze birch borer (*Agrilus anxius*). The two insects pose opposite challenges to tree owners. The emerald ash borer is native to Asia and is a threat to our native ash species. The bronze birch borer is native to North America and is a threat to Asian and European birch trees. Paper birch, our native birch, is also susceptible if stressed – and drought is the stress in the southeastern part of the state.

I received this image from Nathan, a forester with the SDDANR of an infested birch. It has the classic symptoms of being infested with the bronze birch borer. If you look closely at the white bark, you will see the winding ridges of bumpy callus tissue that overlay the tunnels made by larvae last year.

The life cycles of the two insects, bronze birch borer and emerald ash borer, are similar. The young larvae will be feeding very soon so susceptible or infested birch should be treated in the spring to kill the adults before they lay eggs or the newly hatched larvae. Now is not too late, but injections of emamectin benzoate – a chemical used for emerald ash borer – should be done soon. The insecticide will take some time to be distributed throughout the tree and it is important to kill the larvae before they mature.

Jewel beetle – the native EAB imposter!

Usually during mid-summer, I receive images of an "emerald ash borer" from a concerned person. I appreciate their interest and willingness to alert me to an infestation. Fortunately, about 99.9 percent of the insects submitted are not emerald ash borer.

The most common insects submitted are jewel beetles with this one, *Buprestis confluenta*, the one I received from East River. The adults are about 3/4-inch long with a metallic green body with a slight purplish-blue hue. The wing covers have fine yellow flecks. The larvae are found in dead or dying aspen and poplars.

Severe chlorosis on maples

Severe chlorosis is appearing on maples throughout the state for the same reason – the lack of iron and manganese in the foliage. This is due to the inability of the roots to absorb adequate quantities of these microelements. The alkaline soils that are found throughout the state results in much of the iron and manganese present in the soils being unavailable to some trees. Tony, the SDDANR, forest health administrator, took this picture of a very chlorotic maple.

Silver and red maples along with their hybrids are sensitive to deficiencies in these two microelements iron and manganese. River birch and some oak species – pin oak, red oak, and swamp white oak – are sensitive to deficiencies in iron. Most other trees are not affected by these deficiencies, at least up to a soil pH of 7.5.

One means of avoiding these deficiencies is for the tree to continue to explore new soils to gather what little microelements are available. This is one reason that we see less chlorosis during years with rain appearing every two weeks or so. The problem this year is that half the state (the West) is having abundant rains and in some areas wet soils are restricting root growth. The other half of the state (the East) is too dry and that also restricts root growth.

Samples received/Site visits

Fall River County, Honeylocust pod midge

The plastic bag containing the sample had a dry paper towel (thank you) and honeylocust leaves with the leaflet curled into a pod-like gall. This is the work of the honeylocust pod gall midge (*Dasineura gleditchiae*).

They overwinter in the leaf litter as pupae or adults. The adults fly to the expanding honeylocust leaves to lay eggs, anywhere from one to several per leaflet, at about 200 GDD, when serviceberries are beginning to bloom. The feeding causes affected leaflets to become distorted with pods first appearing about 320 GDD, when weigela starts to bloom. The adults emerge from the galls to lay eggs on any new foliage.

There are usually two to three generations per year but most of the leaflet damage occurred with the first-generation due to the abundance of tender new leaflets. The second and third generations have fewer new leaflets upon which to lay eggs. They will not lay eggs on older leaves.

Treatments are focused on the first generation, so any foliage insecticide spray needed to be on just as the leaflets opened. No treatments are needed at this time.

Kingsbury County, Leaf tatters on Heritage oak

A common disorder that appears on oak during June is leaf tatters. This presents as leaves with holes or tattered margins with portions of the leaf blade missing but the veins remaining. The symptoms only appear on the first set of leaves. Leaves that unfold later appear normal.

Leaf tatters are a puzzle to the tree owner as they assume the problem is an insect, yet they never see one. The problem is not an insect by freeze injury. We had a few very warm days in April – almost 90 in some locations – and then the temperatures dropped into the 20s a week later.

This temperature change can result in the tender buds experiencing injury. The buds are not killed but some of the cells in the developing leaves die. Once these leaves open, spots that died appear as holes or tatters along the margins.

We see this a lot on bur oak, not every tree but enough of them that it is accepted as normal, just something that makes the tree a little unsightly in the spring. Fortunately, the second flush of leaves is not affected and these cover over the damaged leaves.

What is notable with this sample is the tree is not a bur oak but a Heritage oak (*Quercus* x *macdaniellii* "Clemons'). One characteristic of this cultivar is it is tatter resistant, so we rarely see the problem with this tree. The oak tree owner had not seen the problem with the tree since planting a decade ago. They were wondering what "bug" did the damage. The tree has already produced a second flush of leaves and these are tatter-free.

Pennington County, Needle miner in ponderosa pine

The sample had discoloration on the needles and some had snapped off near the tips. These are common symptoms of dothistroma, a needle disease. No signs of this fungal disease were found but affected needles had tunnels through their center and tiny holes where an insect emerged.

The problem is ponderosa pine needleminer (*Coleotechnites moreonella*). The needles had been tunneled along most of their length with a single small, round exit hole near the end. We were not able to find a larva, only the frass and tunnels, so lack the presence of the insect but all the symptoms lead to this insect being the problem. This needleminer has rarely been reported in South Dakota but does show up in the Black Hills from time to time.