South Dakota State University Extension

# Tree Pest Alert

July 19, 2023 Volume 21, Number 22

## In This Issue



## Samples

John Ball, Professor, SDSU Extension Forestry Specialist & South Dakota Department of Agriculture and Natural Resources Forest Health Specialist

Email: john.ball@sdstate.edu

Phone: 605-688-4737 (office), 605-695-2503 (cell)

Samples sent to: John Ball
Agronomy, Horticulture and Plant Science Department Rm 314, Berg Agricultural Hall, Box 2207A
South Dakota State University
Brookings, SD 57007-0996

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

The long summer days for mid-July have been warm but not hot. But that may be changing as hot weather is in the forecast. We are still ahead of last year in growing degree days (GDD-base 50).

The peaches are beginning to mature. We may see a good crop this year – at least by South Dakota standards. Some areas of the state escaped the spring frosts that often kill peach flower blossoms.

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

| | |
|---|---|
| Aberdeen | 1,460 |
| Beresford | 1,740 |
| Chamberlain | 1,680 |
| Rapid City | 1,255 |
| Sioux Falls | 1,720 |

The drought classification has not changed much since last week. All West River except for Gregory and Tripp counties are classified as "None" on the US Drought Monitor. The drought has also broken for the northeastern quarter of the state except for the counties bordering Minnesota.

The southeastern quarter of the state has a drought intensity classified as either "Abnormally Dry" to "Severe." There is still one small spot in in Charles Mix County that is listed as "Extreme Drought."

## Treatments to Begin Now

The treatment time for the Zimmerman pine moth is usually in August, but this year the applications may start next week. The adult moths are flying at about 1,900

GDD. The expected hot weather may push us to that threshold in eastern South Dakota within a week or two.

The adult moths have dark gray wings with a zigzagging pattern and a span of about one inch. They will lay their eggs on the trunks of pines, usually near a branch attachment. These eggs hatch within a week or two and then the young larvae crawl along the bark to find somewhere to spend the winter, usually beneath bark flakes where the branches connect with the trunk. Any insecticide spray must reach and cover the trunk to kill these young larvae as they crawl over the bark.

The insecticides used to treat the larvae contain either bifenthrin or permethrin as the active ingredient and are labelled for this use.

## Timely Topics

### *Emerald ash borer update*

The eggs have been hatching during the past few weeks. Now small larvae are found burrowing into the inner bark (phloem) of ash trees. I could easily find second instar larvae in trees during the survey this past week. The period between the beginning of adult emergence to second instar larva is between five to nine weeks. Adults started emerging about eight weeks ago, so we are right on target.

These are small larvae, mostly only one-fourth inch long or slightly longer. The galleries in the inner bark are still short and shallow. These tiny tunnels are not yet disrupting the movement of sugars through the tree.

### *Pine looper update*

The pine defoliation along the ridges east and north of Pringle is becoming more apparent. The pine looper caterpillars are easy to find on the same trees that were defoliated by this insect last year. Since most of the new needles were devoured last summer, along with some of the older needles, these trees were left bare for the winter. The hills had a gray cast to them as the trunks and branches were no longer hidden by green needles.

New needles appeared on these trees this spring. Now the rapidly growing caterpillars are eating these needles. These caterpillars will continue to grow and consume needles over the next three or four weeks. I expect to see more defoliation.

The Black Hills and the nearby pine forests experience an outbreak of pine looper every few decades. We do not have a lot of data to predict what the impact of this defoliation will be on the affected pine stands. We can only look at the effects of defoliation by other caterpillars.

Pine butterfly (*Neophasia menapia*) is a more common defoliator. It feeds on the older needles but under outbreak conditions it does feed on the new needles as well. Pine butterfly caterpillar defoliation can be a tree-killer if it continues for two years or more. This does not mean every tree, but a third of the trees in a stand of pines.

It may be fall before we know whether this same fate occurs with the pine looper.

### *Grasshoppers update*

The hopper populations are high across the entire state. The dry weather last year helped a high population of grasshoppers to explode this year. There are several grasshopper species in the state but they all can devour plants quickly. We are seeing cedars being nibbled away (see July 12 issue of the Pest Alert) and small deciduous tree seedlings.

Grasshoppers prefer grasses and broadleaf plants. But they are general feeders. As an example, lilacs are not one of their favorites, nor are spireas and junipers (cedars) but all these are being nibbled on during this outbreak.

There are numerous insecticidal options for grasshopper management in the ornamental landscape. Acephate is a common active ingredient that is used for grasshopper control as well as carbaryl. Neem oil can be used but expect some defoliation. Regardless of the insecticide selected, once the grasshopper population is high, it may take several applications at weekly intervals to kill the hoppers that continually migrate in from nearby areas.

## E-samples

### *Annual cicada*

The annual evening buzzing in the trees is subdued this year. The buzzing is usually loud and persistent during the dog days of summer but not this year. This is more like 2014 when the tree canopies in many neighborhoods were quiet. I am only receiving a few pictures of cicadas and their nymphal cast skins this year.

No one is sure why the population dropped during that year nor is there a specific reason for the decline this year. It may not be long-lasting. We are at the beginning of the cicada summer emergence. The ones that emerge last are the loudest so maybe the buzzing is yet to come.

### *Elm sawfly*

The large caterpillars on the leaves of elm and willow are the larvae of the elm sawfly (*Cimbex americanus*). They are not true caterpillars, sawflies are not closely related, but their general appearance and feeding is similar.

Elm sawfly larvae are yellowish white with a black stripe along their back. They are one of our largest sawfly larvae and can become almost two inches long at maturity. They feed on the foliage, coiling their posterior around the leaf. At night they will curl like a cat and nap on a leaf.

If there are only a few sawfly larvae on the branches, no control is necessary. The defoliation will not harm the tree. If larvae are found on most of the leaves on a branch, the treatment should be performed soon before the insects become larger. Most insecticides for leaf-feeding insects, such as those that contain Carbaryl, will be effective. Select one that is labelled for elms or broadleaf trees.

### *Oak leaf blister*

Oak leaf blisters are caused by a fungus, *Taphrina caerulescens*, is a common disease of oaks. The symptoms are raised, small greenish-yellow blisters on the upper leaf and corresponding dark, sunken dots on the underside. These spots enlarge during the season and infected leaves may fall prematurely. Once the symptoms appear, it is too late for treatment. Preventative fungicide applications are rarely done as the disease does not appear every year nor is the infection a threat to the tree's health.

There are some insects and mites that cause similar symptoms, so a sample was requested to confirm the diagnosis.

## Samples received/Site visits

### *Brookings County, Woolly apple aphid on cotoneaster*

This was a call about white q-tip material along the shoot of hedge cotoneaster (*Cotoneaster lucidia*). These tiny (1/8-inch long) cotton balls are woolly apple aphids (*Eriosoma lanigerum*). The aphids are purple, but they cover themselves with white, thread-like secretions. The cottony filaments protect the aphids from their natural enemies.

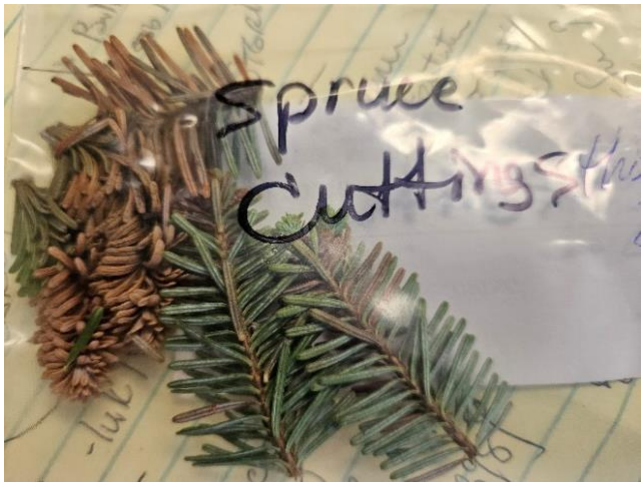
The aphids suck the sap from the shoots and roots. While they can penetrate the thin bark of a new shoot, they also rely on wounds, such as hail, to provide a convenient means of inserting their long, slender mouthparts into a shoot.

The common hosts of the woolly apple aphids are apple trees (and crabapples), cotoneaster and pyracantha (the last not a common shrub in South Dakota). They also feed on the roots of these hosts. Repeated feeding of roots causes galls to form at these sites. Galls can also form on shoots.

Treatment is as simple as a high-pressure stream of water through the shrub or tree. Heavily infested cotoneasters can be treated with labelled insecticides containing dinotefuran or imidacloprid as the active ingredient. These should be applied after flowering – which occurs in the spring – as these insecticides are toxic to pollinators.

### *Faulk County, Declining fir*

This was a sample of a balsam fir (*Abies balsamea*). It looks like what you would expect a balsam fir to look like in central South Dakota – dead.




The past few years of hot and dry conditions have not been kind to this northern species. These trees are adapted to the cooler, moist summers of Canada rather than most of the United States (northern Minnesota, Michigan, and Maine some of the exceptions).

One grew in Faith for many years, reaching a height of 20 feet, but it also died this spring from the two previous years of drought. Too bad. The cooler, wetter summer of 2023 might have given it a chance.

### *Lincoln County, Scorching on sugar maple leaves*

The discolored blotches along the margin of these leaves are due to scorch. This is due to the hot, dry conditions causing water deficiencies in the foliage. This presents as the brown tips as this is the portion of the foliage that dehydrates first.

Sugar maples are extremely sensitive to scorching as they are used to a cooler, moist growing environment. Watering these trees during the summer can help but the heat can result in water transpiring out of the leaves faster than can be added.

Scorch can be due to other causal agents that slow or stop water transports in a tree. A follow-up visit is scheduled.

### *Miner County, Pine needle scale on spruce*

These small (1/8-inch), white, oyster shell shaped bumps are pine needle scales (*Chionaspis pinifoliae).* These are the stationary adult females, so some people do not even notice they are insects. The adults females and their more mobile young, called crawlers (which are too small to be easily seen by the naked eye), feed by inserting their long mouthpart into the needle. High populations, as seen here, can result in needle discoloration and loss.

We see two generations of pine needle scale a year. The first crawlers hatch at 300 GDD and these are now the adults seen on the new growth of this spruce. The second generation of crawlers hatched at 1,400 GDD. The second generation of crawlers are out now. They are the life stage we direct treatments.

A common recommended treatment is an application of summer oil. These suffocate the crawlers and are soft on their natural enemies. But oils can be damaging to

needles if applied under hot, dry conditions which we are seeing in the southeastern part of the state.

The tree can be sprayed with an insecticide containing acephate, carbaryl or malathion labeled for control of scale on conifers. The treatment should be applied within the next week, but all will also kill the insects that feed on scales. An insect growth regulator, such as products with the active ingredient pyriproxyfen has limited impact on the natural enemies of scales. It is available to commercial applicators.

### *Minnehaha County, Aspen leaf spot*

This was an aspen sample that was infected with aspen leaf spot, sometimes called Marssonina leaf spot, after the genus name of the pathogen *Marssonina*. This is a common disease of aspen throughout the state, both in native forests and trees planted in towns.

The symptoms of an infection are small deep brown flecks scattered on the leaf blade. The flecks may have a white center or yellow halo. Heavily infested foliage can have the spots enlarge and merge into large black blotches. Occasionally the spots can also appear on the leaf petioles.

At this time of year there are no effective controls. The leaf tissue is already infected, and no treatments will kill a pathogen already inside the leaves. The best treatment for this year is to mow all the fallen leaves this autumn. The disease overwinters on the fallen leaves. If these are shredded into fine pieces, they will decompose and not produce spores next spring.

### *Minnehaha County, Spruce spider mite*

Mites are often blamed for spruce needle discoloration and loss, but they are rarely the causal agent. Not this time. The shoots were covered in mites!

This is the spruce spider mite (*Oligonychus ununguis*). It is a cool season mite, so we usually do not see them in the summer. The mite we occasionally see during the summer on spruce (and many other plants) is the two-spotted mite (*Tetranychus urticae*). The spruce spider mite is usually inactive during the summer when the temperatures climb past 90$^{o}$F.

The heaviest feeding periods are cooler spring and fall days. The mite punctures the needles to feed. This results in tiny yellow spots that give infested needles a bronze appearance. Heavily infested needles will drop prematurely – precisely what is happening on the shoot tips of this spruce.

The easiest treatment for homeowners to apply is a high-pressure stream of water to dislodge the mites. If pesticides are necessary, it is best to contact a commercial tree company as they have miticides that are highly effective but have limited impact on nontarget insects.