



# Tree Pest Alert



June 5, 2024

Volume 22, Number 15

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## Plant development for the growing season

Our warm temperatures during the past week caused the accumulated growing degree days (GDD- base 50) to jump up about 90 GDD from the week before. Here is the current GDD for communities across the state.

Aberdeen	560
Beresford	780
Chamberlain	690
Rapid City	590
Sioux Falls	730

Japanese tree lilac (*Syringa reticulata*) is just beginning to bloom across much of the southern half of the state along with arrowwood viburnum (*Viburnum dentatum*). These are among the last of their genus to bloom, only late lilac (*Syringa villosa*) is later.

## 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 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 was made possible through a grant from the USDA Forest Service.



## Drought monitor

The rains are continuing Only Fall River, Harding and Perkins counties are classified as "Abnormally Dry" or "Moderate Drought" according to the U.S. Drought Monitor. Much of the rest of the state has seen normal or above normal precipitation so far this spring.

## Soil temperatures

Soil temperatures at a 4-inch depth are in the high 60°sF or low 70°sF. The optimum soil temperatures for tree seedling root expansion are in the 60°sF. Once we reach soil temperatures above 75°F, root growth will slow.

## Treatments to begin soon

### ***Spruce bud scale***

Spruce bud scale (*Physokermes piceae*) crawlers will soon be hatching. The scale resembles a small round, reddish bud which can be found on the tips of the branches where the side branches attach to the shoot. They, and their mobile young called crawlers, suck the sap from the shoots resulting in dieback and decline of the lower branches. Since these are soft scales, they produce honeydew that results in a black, sooty appearance to the needles and twigs.

The scales have one generation per year and the crawlers' hatch about the time littleleaf lindens bloom, about 900 GDD, which should be in another week or two as our day temperatures become warmer.

The best treatments are insecticides containing Carbaryl as the active ingredient (and labelled for this use) applied on the foliage and shoots near the tips. Products containing imidacloprid can be effective as a soil drench but need to be applied in the fall or spring for controlling the insect during the summer.

### ***Spruce needleminer***

We are also coming up to the time to treat spruce needleminer. The needleminer (*Endothenia albolineana*) gets its name from the fact that the young larvae are so tiny they can live inside the needle, mining it as they feed. They eventually outgrow their home and then create a nest of webbed, detached needles to live in. The larvae usually feed on the lower exterior needles, almost stripping the tips of needles; however, they can also be found in the interior of the tree and even the tops of young trees.

The adults are small moths that will begin flying soon – later this week - and depositing eggs on the needles. The treatment is usually with a pesticide containing carbaryl as the active ingredient and labeled for this use. Infested trees should be treated in another two weeks or so as the adults should be flying by then.

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## Timely Topics

### ***Emerald ash borer update***

We are continuing to monitor emerald ash borer (EAB) development. The adults are beginning to emerge from their D-shaped exit hole. The picture at the top of the right column is an adult EAB just beginning to carve its way out of the overwintering chamber.

I mentioned in the May 29<sup>th</sup> *Tree Pest Alert* that adults are rarely seen despite being day fliers. When there are extremely high populations, however, they can be found landing on trees and even people! All the ashes in this community are dead or dying from an EAB infestation so the adult borer population is extremely high.



### ***Herbicide injury in trees***

I am visiting trees that are presenting with common symptoms of herbicide injury. These calls, however, are not due to drift but a surface application by the tree owner. Not reading the Weed and Feed or Weed product are to blame for these applications.

One site had several ash trees that rapidly declined this spring. The trees appeared fine last fall but failed to leaf out this spring or produced only a few random shoots of leaflets showing strapping – narrow, elongation, like someone stretched the leaflets. This is a common symptom for exposure to growth regulator herbicides. The tree owner had applied a lawn weed and feed product that had 2,4-D and Dicamba. The label specifically stated not to apply near desirable trees, but the tree owner did not read the precautions.



Another stop was a linden that failed to leaf out this spring. The other lindens along the property were fine. The only difference was the defoliated linden was growing in pea-gravel "mulch" that did not have a single weed in it. The tree owner had applied a weedkiller on the pea gravel mulch.

The herbicide contained imazapyr and pelargonic acid. The product is advertised as a vegetation killer that will provide up to a year of control on gravel or in patio block. The label specifically states not to apply on or around trees or over their root zone.

Always read and follow label instructions on any pesticide!



### **White pine blister rust in the native limber pine stand in Custer State Park**

The past week we were surveying the relic stands of limber pines (*Pinus flexilis*) sprinkled along the north-facing slopes of the Cathedral Spires in Custer State Park. We have located and measured about 270 trees in five separate populations. The trees range from one year to just under 200 years old.

These native trees, isolated by more than one hundred miles from their cousins, have clung to life for centuries enduring changing climates, fires, mountain pine beetle and competition from ponderosa pine and white spruce.

The trees have managed to survive despite these threats but are now declining from an introduced disease, white pine blister rust (*Cronartium ribicola*). This rust disease is native to eastern Asia where it infects 5-needled pines. The disease causes minor problems in its native land and hosts.



Unfortunately, white pine blister rust was carried to Europe where it infected our native eastern white pine (*P. strobus*). The disease was carried to North America sometime during the late 1800s or early 1900s on white pine seedlings grown by European nurseries. The disease has spread throughout much of the country including South Dakota.

White pine blister rust was confirmed in Cathedral Spires in 1992. The blister rust has two hosts which alternate, a five-needled pine and currants or gooseberries. The disease was found on the limber pines along the Spires and an alternate host, the wax currant (*Ribes cereum*).

Not all the limber pines in the Spires have become infected or the disease has been limited to a lower branch or two. We have been pruning out infections on the lower branches before they reach the trunk and girdle the tree. This has been successful on many trees but for others it has been “death by amputation” as the disease reappears every year until all the branches were infested.

We have been collecting seeds from the trees that have some resistance to the disease and hope we can establish trees that can survive the infection.

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## **E-samples**

### **Ash flower galls**

The irregularly branched, fringed burl-like masses on the ash shoot are causing some unneeded concern. These are ash flower galls caused by the ash flower gall mite. The mite only feeds on the staminate (male) flowers that appear on ash. Since no one wants ash seeds, most of our cultivars produce only staminate flowers.



The mite does not harm the tree, only its appearance. The green galls turn black by fall. They stand out on a bare winter tree.

### **Ash leaf rust**

This is another foliage disease that is making an appearance this year. The disease is called ash leaf rust (*Puccinia sparganoides*). The infection occurs on the leaflets and petioles. Affected leaflets have bright yellow to yellow-orange wart-like galls. The galls can also occur on the petioles which cause a sharp bend to the stalk. Infections can cause premature leaf drop.



This rust disease, as true with many other rust diseases, requires two hosts. One host is ash, the other is one of several species of cord grasses. The two most common cord grasses in South Dakota are prairie cordgrass (*Spartina pectinata*) and alkali cordgrass (*S. gracilis*). Both cordgrasses are found along sloughs and wet prairies.

Since the arrival of emerald ash borer, few ash tree owners are worried about ash leaf rust. Fungicide treatments are by a product containing myclobutanil as the active ingredient labelled for this use. The fungicide is applied as the leaves are expanding and repeated twice at a 10-day interval.

### **Mildew on Summer Wine ninebark**

Ninebarks have become extremely popular shrubs over the past thirty years. The purple to yellow leaves of many cultivars contrasted with the light-colored bark that peels off in papery sheets. Ninebarks are also tough shrubs that are adapted to our soil and climate.

Unfortunately, they suffer from powdery mildew (*Podosphaera physocarpi*). This fungal disease lives on the surface of the leaves and causes the infected leaves to have a whitish surface. The infected leaves may become curled and form witches'-brooms.

The disease requires high humidity but a dry leaf surface. Humid, cloudy, dry days are perfect for the development of the disease. These conditions are beginning to occur in the eastern side of the state as well as the Black Hills.

Fungicides containing either (or both) chlorothalonil or propiconazole and labelled for this purpose can be used to manage the disease. Treatments begin now and continue every 10 days until mid-summer.

Many ninebark cultivars have resistance to the disease. Seward Summer Wine (dark purple leaves) and Luteus (yellow leaves) are two cultivars that seldom show symptoms – except this year as seen by this picture!



### **Samples received/Site visit Brookings County, Aphid in chokecherry leaves**

Not all curled leaves are due to herbicide drift. When I opened the curled leaves of this chokecherry, the interior was alive with aphids. As discussed in the May 29th issue of the *Tree Pest Alert*, this is the year for aphids. They are on many trees and shrubs.



The treatment now is either a high-pressure stream of water to dislodge them or insecticidal soap. If the water or soap cannot reach the aphids, a systemic treatment of an insecticide containing acephate and labelled for this use. This will be absorbed into the leaf and kill the aphids as they feed.

### **Hamlin County, Cottonwood petiole gall**

This is the cottonwood petiole gall formed by a small green aphid known as (you guessed it!) the cottonwood petiole gall aphid (*Pemphigus* spp). The insects begin feeding on the leaves in the spring and the galls form around them. The aphids usually mature by July and the winged adults emerge from the galls and fly to another host. The alternate host is a plant that is a member of the mustard family. The aphid feeds on the roots.



The cottonwood damage from this insect is annoying to us – who wants to rake in July – but it does not harm the tree. The fallen leaves do not need to be burned; the insect has already left, so leaving these leaves will not increase the problem next year.

An application of dormant oil can be applied on the tree to kill the aphids before they move out from the bark fissures next April. Most people do not bother with spraying, just raking.

### ***Stanley County, Ash bullet gall***

This was another ash call that turned out not to be the borer but an interesting pest. These colorful green to red bumps that appear along the veins are not due to a mite but a fly. This is the work of the ash bullet gall midge (*Dasineura pellex*).



This midge does not harm the tree or the leaf. The bullet-shaped galls may be considered unsightly by some but that is the only concern. Ash has far bigger problems right now.