South Dakota State University Extension

Tree Pest Alert

June 17, 2026

Volume 24, Number 18

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

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

Plant development for the growing season

This past week weather was pleasant and mild. The daytime temperatures were in the 70s, not too hot or cold. These cooler than normal temperatures slowed the growing degree days (GDD-base 50) accumulations. We gained about another 100 GDDs. Here are the total GDDs for communities across the state.

Aberdeen	863
Beresford	1220
Chamberlain	1178
Rapid City	1026
Sioux Falls	1147

White mulberry (*Morus alba*) is a common tree in South Dakota. While this tree is native to Asia, the birds – which love the fruit – have spread it across North America. The fruit is about 1/2 -inch long and resembles a raspberry. It begins white and becomes deep purple when ripe.

Ripe fruit is beginning to appear on the trees now. It can be eaten right off the tree if you have never eaten anything with sugar (and do not eat too much at one sitting, you might get a tummy ache). They are more bland than sweet. The best use is in jams, jellies, and pie filling with plenty of sugar).

Drought monitor

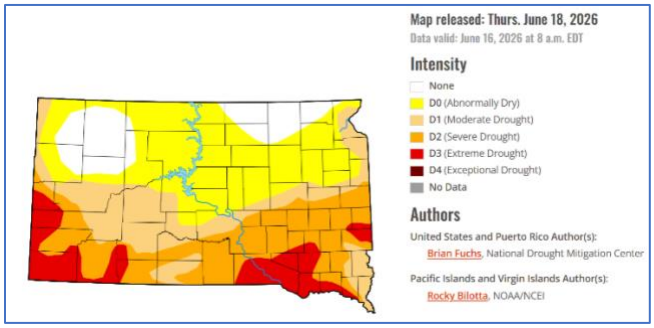
We still need rain. The drought-free region of the state has shrunk to 12%. Perkins county in the northwest and

McPherson, Brown, and Marshall counties in the northeast are the only drought-free areas of the state.

The farther south you go in the state, the greater the drought intensity. Most of the northern half of the state is classified as “Abnormally Dry” with a ribbon south of this classified as “Moderate Drought.”

About a quarter of the state from Brookings to Pennington counties are under “Severe Drought.” About 11% of the state, those counties in the southwestern corner of the state and those along the Missouri River in the east are under “Extreme Drought.”

Here is the current map from the National Drought Mitigation Center at the University of Nebraska-Lincoln. We still need more rain.



Treatments to Start Soon

Pine needle scale

The white, oyster-shell-shaped spots on the needles of pines and spruce are the adult pine needle scales. These are immobile so they are often overlooked as insects. They and their mobile young called crawlers feed by sucking the sap from the twigs and foliage.

The second generation of pine needle scale crawlers begin to hatch at about 1,200 GDD. They craw out onto the newest needles to find a place to settle and begin sucking sap. This crawler stage is most susceptible to treatments.

The second-generation crawlers hatch over a longer time than the first generation in the spring. Hatching can occur over a three-week period (till 1,500 GDD) so it may require two insecticide treatments to reduce the population, one now and another in a month.

Insecticides containing carbaryl, cyfluthrin, or permethrin and labelled for this use may be used as foliage/twig sprays. Insecticides containing dinotefuran may be used as a soil drench or foliage spray.

Timely Topics

Emerald ash borer update

We continue to monitor development of EAB but during mid-June the focus is adult emergence. There are no larvae in the trees right now. The evidence of an infestation is last year’s galleries in the inner bark with the overwinter chamber that has a small D-shaped hole leading out of the bark. This is where the adults emerged this spring.

The adults have been out for the past three weeks in Union and Lincoln counties. It takes a couple of weeks before the females lay eggs beneath bark flakes and crevices. The first eggs start hatching about a week or so after that. I expect to start seeing thread-like galleries of young larvae by next week.

Emerald ash borer continues to spread within the quarantined counties

We are seeing emerald ash borer infested trees in more areas. These pockets of infested trees are within the quarantined counties. Infested ash trees have been found in the Beresford area as well as west of Milbank. Infested windbreaks are appearing west and north of Brookings. It is becoming quite easy to find infested windbreaks throughout Lincoln and Minnehaha counties.

This spread is not too surprising. There are no restrictions on the movement of ash within counties, other than those imposed by some communities. Infested trees are being moved as wood debris or firewood throughout these counties.

Moving ash wood containing live larvae – most frequently as firewood – is the primary means of starting satellite infestations in different areas of quarantined county. A secondary one is the adult borers hitchhiking on cars and trucks. They can land in vehicle beds and tumble out as pickup or truck drives down the road.

The beetle is also capable of migrating from one windbreak to another. While they typically do not fly more than several hundred yards from the tree that they emerged from, they can fly up to fifteen miles in short hops. It is easy for them to fly from one infested windbreak to a nearby (one mile or so) one.

Pine engraver beetle update

The first-generation pine engraver adults (*Ips pini*) typically infest green slash piles and fallen tree branches. Down, green branches still have inner bark that is nutritious for their young, but they will not be suffocated by sticky sap.

We could find adults attacking slash about a month ago. These adults laid their eggs. The eggs hatched a few weeks ago. The small white C-shaped larvae are feeding in the inner bark. Some are already pupating and we are even seeing some new adults.

These adults will infest green down trees and slash. If this is not available, they will seek out standing trees.

Only stressed trees are vulnerable to attack, but the continuing drought is leaving many trees susceptible.

E-samples

Birch decline and the bronze birch borer

This is a picture of a row of Parkland Pillar birch (*Betula platyphylla* ‘Jefpark’). One of the three has dieback. The question is why?

The most common reason for the decline of a Parkland Pillar birch is an infestation by our native bronze birch borer (*Agrilus anixus*). This insect is a close cousin of the emerald ash borer but with major differences. The bronze birch borer is a native insect. Asian and European ash are highly susceptible to attacks.

Parkland Pillar birch is a cultivar of the Asian white birch. This cultivar is often attacked and killed by the bronze birch borer before the tree reaches ten years old. Not all trees, of course, but I do see cultivars of the Asian white birch attacks by the borer at an early age.

They often attack one tree in a row, rather than all the trees at once so this pattern is common. The solution is like that of emerald ash borer, injecting the trunk with an

insecticide in the spring. This treatment is repeated about every three years.

Transplant stress on fall planted linden tree

This is a picture of a small linden tree planted last fall. The tree was planted on the south side of Rapid City. The leaves are tattered and have necrotic spots.

The most probable cause of this leaf injury is water stress. Fall can be a good time to plant containers or balled-and-burlapped trees. But they must recover from the transplant stress before winter. If the trees go into winter with a water deficit desiccation injury can occur.

The tree can still recover if it receives weekly watering this summer. A coarse wood debris mulch around the base of the trunk would help hold the moisture. This will help the roots recover and reduce moisture stress for the coming fall.

Samples received/Site visits

Bon Homme County, Cedar blight in a windbreak

This was a young eastern redcedar (*Juniperus virginiana*) windbreak where some of the trees had branches with yellow, dead foliage. There are two common disease, Phomopsis (*Phomopsis juniperovora*) and Kabatina (*Kabatina juniperi*), that are associated with browning foliage. Tip blights on junipers cannot be identified solely from symptoms as they are similar for these two diseases and others.

The agent in the discoloration and death of the young trees in this windbreak was phyllostica needle bight (*Phyllostica*). This is a pathogen associated with arborvitate (*Thuja*) but phyllostica can also occur with other evergreens, such as juniper. It is considered a secondary pathogen with infection limited to stressed hosts.

The stress agent for this planting is the severe drought that this area has endured for several years. Irrigation is the key for reducing the impact of this pathogen in the planting. If the disease is limited to a few branches, these should be pruned during dry weather. If a plant has more than a third of the branches killed, it is probably best just to remove the plant.

Lawrence County, Dothistroma needle blight in lodgepole pine

Many people mistakenly believe that we have only one native pine, ponderosa pine (Pinus ponderosa), but we have two others. One is limber pine (*Pinus flexilis*) which is found in the Cathedral Spires and Black Elk peak area. The other is lodgepole pine (*Pinus contorta*) which is found in a small area of the Black Hills.

Tony, the SDDNAR forest health forester, was walking through this stand when he noticed discoloration on the needles of some trees. He sent me a sample since the symptoms were like those of dothistroma needle blight

(*Dothinstroma septosporum*). This is a disease with symptoms that fit many other disorders and diseases so it is best to send in a sample to see if the spores can be isolated.

Red to brown banding on the needles – the most common symptom for dothistroma infection – can appear for salt or drought injury. Brown spot disease also can produce these same symptoms.

It did turn out to be dothistroma. The disease can be treated with fungicides in urban landscapes. It is impractical to treat forest stands. Fortunately, the disease is not usually a lethal threat to the host. It can be stressful, however, and increase susceptibility to secondary insects such as pine beetles.

Minnehaha County, Carpenterworm in ash

While all the attention is on the emerald ash borer, we still have several native borers that attack ash. One insect that attacks stress ash trees, among other tree species, is the carpenterworm (*Prionoxystus robiniae*).

The carpenterworm is a moth as an adult. The larvae feed deep inside the host. The mature larvae are about three inches long – the longest larvae found in ash. They have a pinkish-white body and a dark head.

The larvae extensively tunnel through wood but maintain an opening to the bark which they use to clean the gallery of sawdust. Small piles of sawdust will be around the base of the tree or along the bark.

The pupal skin is left at the exit hole as the adult moth develops. It is also very large, almost three inches long. The clearwing ash borer (*Podosesia syringae*). also leaves a pupal skin at the exit hole, but it is only about one inch long.

Carpenterworm attacks declining and dying trees. The treatment is usually a chainsaw.

Moody County, Desiccation injury in Brandon arborvitae

This was a spring planting of container-grown Brandon arborvitae (*Thuja occidentalis* ‘Brandon’). Many of the evergreens have yellowing and browning foliage. Some of these scale-like foliage is brittle.

The reason for the discoloration is transplant stress. The roots cannot absorb enough water to meet the demands of the foliage. Arborvitaes are sensitive to this type of stress.

Watering is the treatment. The trees are being irrigated but there was another problem that inhibited water absorption. The trees were planted too deep. Setting the

root system deeper in the soil can restrict root expansion and water uptake.

Many of the trees can still recover. The interior foliage is still green. Much of the yellowing foliage is still alive. What is needed is carefully pulling away the soil until the upper most roots are reached. The soil should be left only a half inch above the roots.

Irrigation should be continued through the summer. But it needs to be monitored. The soil should be moistened to a depth of six inches and then allowed to dry before the next watering.