



**SOUTH DAKOTA STATE
UNIVERSITY EXTENSION**

Tree Pest Alert



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In This Issue

Plant Development.....	1
Treatments to start now	2
Locust borer.....	2
Timely topic	2
Emerald ash borer updates	2
How to know your ash is infested.....	2
Do not paint pruning cuts.....	3
E-samples	3
Chlorosis in river birch.....	3
Cracked honeylocust trunk – can this tree be saved?	4
Fall webworm nests in trees.....	4
Sample received/site visits.....	5
Brookings County (Cytospora canker in dwarf spruce)	5
Brown County (Cytospora canker in young spruce).....	5
Brown County (Diplodia tip blight in ponderosa pine).....	6
Marshall County (Bur oak blight)	6
Marshall County (Fall webworm)	7
Union County (Woolly aphids on bur oak)	7

Samples

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

Email: john.ball@sdsu.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 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

This past week's weather was warm with daytime temperatures in the mid to high 80s for much of the state. The mornings were cool and dry – a slight hint for fall.

The growing degree days (GDD-base 50) accumulation was another 120 to 160 GDDs during the past week. Here are the total GDDs for communities across the state.

Aberdeen	2,219
Beresford	2,658
Chamberlain	2,658
Rapid City	2,400
Sioux Falls	2,634

Plant development usually slows at this time of year as trees and shrubs are beginning to prepare for the winter. While they may not be growing, they still need water. This is especially true for any young trees being planted during the heat of August. Here is a tree that was recently planted but not watered enough during the past several weeks.

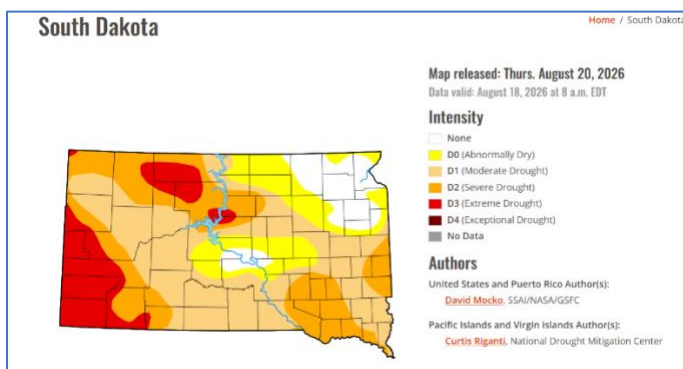


Drought monitor

This week is almost identical to last week. Only about 10% of the state is classified as drought free. The northeastern corner of the state from Brown to Roberts Counties have seems to dodge the drought this year. Last year at this time about 68% of the state was drought free.

About 14% of the state is under 'Extreme Drought.' The entire Black Hills from Lawrence to Fall River County has been under this drought intensity for most of the year.

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



Treatments to Start Now

Locust borer

Locust borers (*Megacyllene robiniae*) began emerging at about 2,300 GDD and will continue to 2,800 GDD. I am starting to see the adult borers land on locust trunks.

Adults are hard to miss. They are about an inch long with long antennae. The body is almost black but with bright yellow stripes running across their backs. Some of the stripes form a large W – that does not stand for wasp though they look like one!



You can also find these colorful adults on goldenrod flowers where they feed on pollen. But they are also laying eggs on the locust, as in the picture, and these will soon hatch to become larvae. The larvae tunnel through the inner bark and sapwood during their lives and become an inch long at maturity. The tunneling by the larvae weakens the trunk and may cause the infested branch or trunk to snap.

The locust borer only attacks locust (*Robinia*), not honeylocust (*Gleditsia*). Many black locusts survive the attacks and continue to grow though there may be a few broken limbs and knotty swelling on the trunks as signs the insect has called the tree home. Once the tree is about 10 years old, it is rarely attacked.

But good luck keeping the Purple Robe locust (*R. pseudoacacia* 'Purple Robe') alive that long. While this cultivar has attractive chains of purple pea-like flowers, it is borer candy. I rarely find one that lives even five years before being killed by locust borer.

Treatment is usually a saw to remove the dead, infested (and often snapped) tree but the trunks can be sprayed now with an insecticide to kill the insect. These bark sprays contain bifenthrin, carbaryl, or permethrin as the active ingredient and must be labelled for control of this insect. Most injectable products are ineffective against this insect.

Timely Topics

Emerald ash borer update

The adult emerald ash borers have finished their flight periods. The bookends for their flight are Memorial Day and Labor Day. We start seeing the first adults emerge after or during Memorial Day. The last emergence is in late July or early August. Since adults live for three to six weeks that means they are gone or their numbers are few by Labor Day.

The larvae found during our sampling are mostly 3rd instar, though there are still a few 2nd instar around. Emerald ash borer larvae develop through four stages (instars) between mid-summer and fall. The 3rd instar, and the 4th that will be appearing soon, are the stages that are most destructive to their host. The most injury to an infestation is yet to come this year.

How to tell if an ash is infested by EAB

Some communities in which EAB has been confirmed are requiring tree owners to remove declining ash trees. The reason is that infested trees can fail in unpredictable ways. Ash trees that are dying from the tunneling by EAB fail differently than ash trees dying of drought or old age.

The wood becomes brittle. The root system also declines, reducing stability. Ash trees that have 20 to 30 percent decline from EAB infestation are a hazard. These should be removed.

Tree owners that receive a notice from the city that they need to remove their tree often contact me. They want proof that their ash is infested. This is not as simple as it seems.



Ash with 20 to 30 percent decline from EAB often do not have signs of the insect along the lower ten feet of the trunk. The D-shaped holes craved by emerging adults do not appear on the lower trunk until the tree is nearly dead. The holes are much higher in the canopy.

If you remove some branches from the upper canopy and strip the bark away, you may find the larvae in an infested tree. This is how we monitor EAB development and a requirement to confirm an infestation in a new county.

But this is an unreasonable requirement for cities to proof that every declining ash in a community in which EAB has been confirmed is infested. The common symptoms of an infested tree – canopy decline, blonded bark, woodpecker drills, thick clusters of watersprouts along the lower canopy – should be sufficient.

Do not paint pruning cuts

The recent wave of storms in Sioux Falls left many broken treetops and branches. Tree owners with damaged trees are pruning broken branches. They are also cutting off portions of trees that have split away from the trunk.

Once the pruning is done, these cuts are often painted with a wound dressing. This seems to be a good way to reduce infection – we sometimes paint our small cuts with a cream that is antibiotic ointment. But trees and people treat wounds very differently.



People heal; trees seal. A tree wound is sealed internally to retard the spread of decay into deeper tissue. Trees also gradually produce callus growth on the surface to enclose the wounds.

Paint placed on the tree wound traps moisture and restricts oxygen, creating an environment more favorable for pathogens. No paint or tar dressing has been shown to reduce decay.

The way to reduce decay is to make the proper pruning cuts, ones that are at the outside edge of the collar. Flush cut, where the pruning cut is made straight down from the trunk-branch union, will decay regardless of treatments.

E-samples

Chlorosis on river birch

This is a river birch (*Betula nigra*) in Sioux Falls with yellowing leaves. The leaves are chlorotic, yellowing leaf blades with green veins. The yellowing is from the lack of chlorophyll. Chlorosis on river birch is most often due to an iron deficiency.

The deficiency is not from a lack of iron in the soil. The iron is there but much of this microelement has been rendered unavailable because of a chemical reactive related to the soil alkalinity.



A common treatment is putting iron directly into the trunk. This delivers iron to the foliage through the trunk's vascular system, bypassing the roots. The tree owner had been doing this for that past several years without success.



It is unclear from the pictures whether this was by implants or injections, but the wounds appear due to implants. Injections use pressure to deliver an iron solution into the tree's vascular system. Implants are solid or capsule dry material that dissolve to release iron.

While both can be effective, generally injections deliver higher concentrations of iron to the foliage. This may be a better choice for this tree. But soil treatments might be best due to the repeated use of implants.

Soil treatments can be of two types. First, iron can be injected into the soil in a form that will remain available. Second, the tree can have cambistat – a growth regulator – applied as a soil drench. This application can result in the tree allocating more resources to create a denser root system.

Cracked honeylocust trunk – can this tree be saved?

One of the recent storms caused a weak union between a branch and trunk to fail. The trunk is split to the ground. While a small split can be repaired with bracing rods through and above the split, along with support cables placed higher to hold the branch and trunk, this is too large.



The large trunk and branch would be difficult to secure with a tree support system. The split is also completely through the trunk and to the ground which adds to the difficulty. The best option is to remove the tree and plant a new one. But the new tree should be trained for the first ten years in the landscape to avoid development of these weak connections.

Fall webworm nests in trees

Josh, one of the SDDANR urban and community foresters, took this picture (next page) of a fall webworm nest in a tree in Murdo. The webbing for the nests of fall webworm forms at the branch tips. It also gradually

enlarges as the caterpillars live in the nests throughout their lives.



More information on this insect is under Site Visits in this issue.

Samples received/Site visits

Brookings County, *Cytospora canker* in globe blue spruce

This is a Montgomery blue spruce (*Picea pungens* 'Montgomery.' It is a true dwarf conifer with a mature height of six to eight feet and an equal spread. Many owners tightly shear this cultivar to create a smaller, denser evergreen.



The shrub is about 25 years old. The top of the shrub is dying and the needles shedding. The first question was what was the reason for the dieback? The other question was what could be done?

Once the branches in the dead top were pulled away, the problem was apparent. It was cytospora canker, a common disease of Colorado blue spruce. The disease was discussed in August 5, 2026 *Pest Alert*. The bluish white sap was oozing out of the small cankers.



The appearance of the disease in a dwarf spruce may seem surprising, since we often see the disease when the trees are about 25 to 30 feet tall. But is more an age than a height issue as the older trees is more vulnerable to the disease. They are more susceptible to environmental stresses which allow the pathogen to become a lethal threat.

The best solution here is to remove the shrub and plant a new Montgomery spruce. The disease does not reside in the soil so there is no concern about infecting the new tree. They will probably have another 25 years before they need to be replaced. Two or three decades is about the shelf life of Colorado spruce in eastern South Dakota.

Brown County, *Cytospora canker* in young spruce

This is example of cytospora canker disfiguring young spruce. The high temperatures of this summer result in heat stress on spruce. They do not perform well in this heat, even if irrigated.

This canker disease is rare in spruces younger than 15 years. It is very common in trees more than 25 years old. The reason is being old is stressful but any stressed spruce regardless of age is vulnerable to the disease.

The disease was appearing in the small stems of a few of the spruce trees. The solution is to prune out the dead stem back to live branches. Then bend the longest branches in an upright position to eventually become a new leader.



Brown County, *Diplodia* tip blight in ponderosa pine

This mature ponderosa pine (*Pinus ponderosa*) had needles at the tips turning brown and hanging. The tips of these affected shoots had small, stunted new needles. These are classic symptoms of the fungal disease diplodia tip blight (*Diplodia pinea*).



The symptoms of the disease were appearing on one side of the canopy but from the top to the bottom. While this disease usually presents symptoms first in the lower canopy, they can also be one-sided as with this tree.

The disease is more a disfiguring problem than a lethal thread. Trees have lived for decades with the disease though they were not attractive trees! The disease can be treated, though not eliminated, with fungicide applications.

These are performed in the spring as the new shoot buds start to swell. A second treatment is applied about two weeks later as the young shoots are expanding.

Marshall County, *Bur oak* blight

If you drive through the oak draws in the northeastern part of the state, you will come across bur oak with browning and yellowing leaves. There will also be recently fallen leaves beneath these trees.



The leaves on these trees had common symptoms of fungal disease bur oak blight (BOB) (*Tubakia iowensis*). They had dark veins on the underside, and the tops showed the characteristic yellowish wedge-shaped patches that followed the major veins.



The trees are the small acorn variety of bur oak, *Quercus macrocarpa* var *oliviformis*. This is the variety that is most susceptible to the disease. It is also the bur oak native to the South Dakota counties bordering Minnesota and Iowa.

The disease is not a death sentence for an infected tree - at least not initially. It takes four or five years of consecutive attacks to kill a tree. The tree's new leaves in the spring appear fine but by late summer the foliage becomes infected and drops. The next year the tree puts out new leaves again but this time fewer and these become infected and drop. It is slow starvation due to the continual loss of foliage.

The infection overwinters on the petioles of infected leaves. But pruning out dying branches or raking up infected leaves are not effective management activities. Fungicide (propiconazole) treatments for infected trees can be injected in late spring just after full leaf expansion or mid-fall. This treatment can prevent the dormant infection from becoming active.

Marshall County, Fall webworm nests in trees

Fall webworm nests were lining the tips of this cottonwood tree like cotton candy. Fall webworms form their nests on the tips of branches, not at the branch unions as the tent caterpillars do. The webworms do not leave the nests but continue to enlarge them as they feed.



There is only one generation per year of fall webworm in most of South Dakota. These nests were still filled with crawling larvae. The caterpillars are green with darker spots and stripes, a little longer than 1-inch and hairy.

They are feeding on the leaves in the nest, but they do not devour the entire leaf. They do not feed on the tough veins - like children who refuse to eat the crust on toast. The interiors of these nests are filled with partially eaten leaves.

The caterpillars are just about finished feeding here. They are finished in the southern part of the state, so those nests are empty. The insect pupates in the soil where it will remain until adults emerge from the cocoons in early summer.

Union County, Woolly aphids on bur oak

The leaves on this tree appeared discolored. Once I was closer to the leaves the discoloration was small flecks of yellow that were coalescing into larger spots. The undersides of the leaves were covered with waxy, woolly, white filaments.



This was the work of woolly aphids. These aphids feed by sucking sap from the foliage. This results in yellowing leaves. The aphids also excrete honeydew - a sugary, sticky substance - as they feed. This leaves the foliage with a shiny, sticky surface. The honeydew can become infected with a sooty mold fungus.

The damage is done and the aphids are leaving. The feeding damage is more aesthetic than life threatening. Nothing needs to be done at this time.