South Dakota State University Extension

Tree Pest Alert

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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

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Plant development for the growing season

This past week started out cool with day temperatures in the 60s but these rose to the 80s by week's end. A typical late spring week in South Dakota; warm days and cool nights. A great start to the summer.

But do not put the snow shovels away just yet if you live in the Northern Black Hills. Lead had over 11 inches of snow the first week of June back in 1995!

We accumulated another 100 to 120 growing degree days (GDD-base 50) during the past week. Here are the total GDDs for communities across the state.

Aberdeen	468
Beresford	769
Chamberlain	761
Rapid City	700
Sioux Falls	702

The buckeyes and horsechestnuts are flowering across the state. Aaron Kiesz, the city forester in Aberdeen, sent in a picture of this Fort McNair horsechestnut (*Aesculus* x *carnea* 'Fort McNair') in full bloom.

We have more buckeyes than horsechestnuts in South Dakota. Buckeye is the term used for North American *Aesculus* while horsechestnut is reserved for Asian and European trees. Buckeyes have five palmately compound leaflets while horsechestnuts have seven.

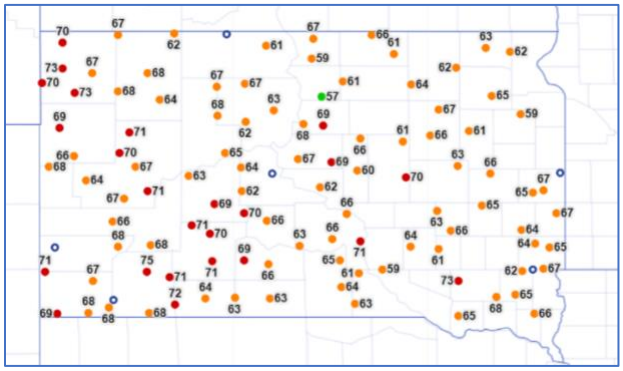
There are other differences. Horsechestnut fruits have a thorny husk while the husks of buckeyes are smooth or with small pricks. The winter buds to horsechestnuts are plump and sticky. Buckeye winter buds are slender and dry. Another crucial difference to South Dakotans is horsechestnuts are not hardy for much of the state. We have some nice specimens in Sturgis, Spearfish and Vermillion, but they are rare elsewhere in the state. Buckeyes are far more common.

Fort McNair horsechestnut is a cross between the common horsechestnut (*A. hippocastanum*) and the red buckeye (*A pavia*). These hybrids are called red horsechestnuts. They are noted for their bell-shaped flowers that open pink and gradually darken to a rose.

A particularly attractive one found at Fort Lesley J. McNair, Washington DC became the cultivar, Fort McNair. It is a smaller tree, about 25 to 30 feet tall at maturity. It is less affected by the leaf blotch disease that affects most buckeyes and horsechestnuts. The upright panicles of pink flowers that appear in mid-spring are the primary ornamental feature of this cultivar.

Soil temperatures

The soil temperatures at a 4-inch depth are in the 60s across the state. The soil temperatures are perfect for woody plant root expansion. We just need water!



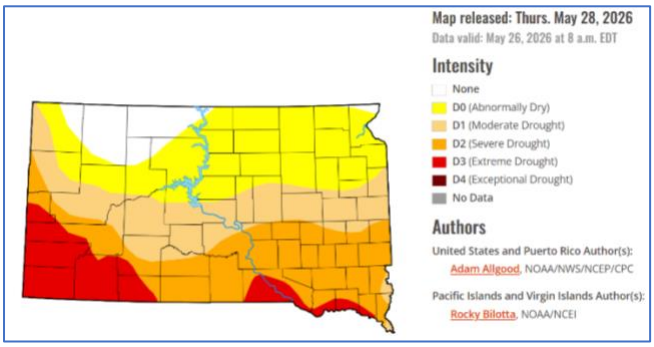
Drought monitor

The drought-free region of the state continues to shrink. We have slipped to less than nine percent of the state being drought-free – the counties in the northwest edge of the state. Corson and Perkins counties are the only two counties not yet impacted by drought.

Another third of the state – the northern part - is classified as “Abnormally Dry.” There is quarter of the state is classified as “Moderate Drought.”

About a quarter of the state from Brookings to Pennington counties are under “Severe Drought.” The southwest corner of the state, including all the Black Hills, is under “Extreme Drought,” along with the counties along the Missouri river from Gregory to Clay counties.

Here is the current map from the National Drought Mitigation Center at the University of Nebraska-Lincoln. It looks worse than last week’s map. We need the rain!



Treatments to Start Now or Soon

Dothistroma needle blight

Dothistroma (*Mycosphaerella pini*) is a common disease of Austrian pines (also ponderosa pines in East River shelterbelts and in some Black Hills communities). The most common symptoms are brown needle tips with yellow to tan spots. The spots have now enlarged to form brown to reddish brown bands and sometimes fruiting structures can be seen in the bands. However, as noted in previous *Pest Alerts*, these symptoms are common to many other diseases and disorders. Only a lab can determine whether the symptoms are due to this pathogen.

The treatment is a copper fungicide applied now as the candles are expanding and repeated in late June and again in mid-July. There are copper-containing fungicides available such as Camelot^{R} for those individuals who must spray several or more trees.

Phomopsis twig blight on juniper

Phomopsis twig blight (*Phomopsis juniper-ovora*) is showing up on juniper (cedar) plantings throughout the state. The typical symptoms of this disease are the young growing tips turning pale green then light yellowish green, then reddish brown and finally ash gray by late summer. Near the base of these infected twigs, you can find small, black fruiting bodies of the fungus. The symptoms, and even the fruiting bodies, can be easily confused with another common twig blight fungus *Kabatina juniperi* so it is always a good idea to send in a sample for diagnosis.

Phomopsis twig blight can be managed with applications of fungicide containing copper or propiconazole as the

active ingredient applied now and continuing at two-week intervals until the spring growth matures, usually by mid-June, but it might be late June this year.

We can begin shearing pines now

Pines set only terminal buds, not alongside the new shoots as do spruce and fir. Shearing means removing a portion of the current season's shoot growth. This can only be performed on pines during the candle phase while new expanding shoot is still tender.

If a pine is sheared after the new growth has completely expanded and hardened, no new buds will be set, and the shoot will dieback after the older needles are shed, usually in a couple of years. Shearing begins now and can be performed until the new needles along the candle are about half the size of the older needles. After that time, in a couple of weeks, it will be too late.

Shearing is only necessary if shaping an ornamental pine such as a mugo pine to keep it more compact. Other than Christmas trees (and mugo pines) we do not usually shear pines in a formal shape.

Timely Topics

Emerald ash borer update

We continue to monitor development of emerald ash borers in ash trees. The adults are beginning to emerge from their D-shaped exit hole. Emergence is not all at once. It will peak in a few more weeks and decline until mid-July when the last one emerges for the year – some sleep in a little longer.

I caught one adult just as it was emerging from a tree near Brandon. The adults are slender jewel beetles about 1/3- to 1/2-inch long and 1/8-inch wide (as a comparison a dime is about 3/4-inches in diameter). They are a bright, iridescent emerald to coppery green beetles.

Emerald ash borer is a day flier and can be found feeding on ash leaves during warm, sunny days. Since they like the sun, the feeding is typically in the upper canopies, so the adults are rarely seen.

Pine engraver beetle update

We are surveying green slash piles in the Black Hills to monitor development of pine engraver beetles (*Ips pini*). The adult beetles were beginning to burrow into green slash in mid- to late May. Now there are many nuptial chambers where the male and his group of two to three females mated.

The females have started constructing their own galleries off this chamber (picture top of next page). There are small niches towards the end of these galleries where the females are laying eggs. Near the beginnings of these galleries, there are small larva already burrowing away from the parent gallery. These larvae will feed for about two weeks before they pupate then emerging as adults.

The second generation of adults should be flying about the third week of June. If there is fresh green slash available, they will be content to burrow into this material. If there is no green slash, these adults may attack standing pine trees, especially drought stressed trees.

Trees are susceptible to attack if the April to June precipitation is less than 75 percent average. The average precipitation for this period is about 8.5 inches in the Southern Black Hills. We typically see about 5.4 inches of precipitation in Custer during April and May. This year we had 4.84, but 2.02 inches of this occurred in one day! Most of the Black Hills are under extreme drought conditions with less than half the average precipitation.

Unless we see average or above average rain in June, there may be significant pine mortality due to pine engraver beetles. The combination of a building beetle population in the abundance of green slash in May from the winter storms and drought stressed trees in June is creating the perfect conditions for pine beetle-induced tree losses.

Tree herbicide injury beginning to show up in lawns

There are many trees with curled and cupped leaves standing in dandelion-filled lawns. These are common symptoms of injury from lawn applications of growth-regulator herbicides. I stopped by this yard with every ash tree covered with distorted leaves.

This is the wrong time to apply herbicides to kill dandelions and the best time if you want to damage your trees. Dandelions have long taproots. If you want to kill the dandelions, you must kill the root. Unfortunately, in the spring, foliage applied herbicides just kill or distort the dandelion leaves, they do not kill the plant.

But this is the best time to apply herbicides if you want to distort leaves on the lawn trees! Growth regulator herbicides such as 2,4-D and dicamba are common in lawn weed control products. These herbicides can become gases during warm days (80ºF or higher) even days after the application. These gases are carried up into the trees.

Trees that are leafing out just before or during the lawn application of herbicide are most sensitive to injury. Most of these lawn sprays are applied during mid-May so ash, hackberry and lilacs are the species most affected. Maples and lindens that leaf out earlier have their leaves hardened off so are less affected along with oaks that do not leaf out until a little later.

The best time to apply lawn herbicides is early fall. The tree leaves are less sensitive to the gases, fewer gases are released as the temperatures are cooler, and the herbicide moves to the dandelion roots to kill these weeds.

E-samples

Apple flea beetle

The picture shows a cluster of shiny green beetles on leaves. These appear to be the apple flea beetle (*Altica foliaceae*). These are small, 1/5-inch long, beetles that appear in the spring.

Flea beetles are mostly a problem for spring vegetables such as our Cole crops and tomatoes. But there are several species that feed on trees and shrubs. The adults are defoliators, either skeletonizing the leaves or leaving small pits in the foliage.

The adults emerge from the soil in the spring, feed on leaves and lay eggs. The eggs begin to hatch in about a week with the small, deep brown larvae continuing to

feed on the host plant foliage. After feeding, they drop to the ground to spend the fall and winter as a cocoon. There is one generation per year.

Flea beetles are general feeders so can be found on more host than their name implies. The apple flea beetle feeds on the foliage of apples, grapes, and other fruit crops. It is native to North America and is common on the Northern Plains and the Front Range.

Eastern tent caterpillar

Tent caterpillar nests are appearing everywhere along with the small caterpillars. This is a picture of an eastern tent caterpillar (*Malacosoma americanum*) nest in northeastern South Dakota. The silky nests form in the branch unions of trees.

The eastern tent caterpillars are covered with fine, brown hair with a light-colored stripe running down its back. This line is bordered by thin yellow and brown strips.

This is a picture of an eastern tent caterpillar nest up in the Aberdeen area. The caterpillars are leaving the nests and foraging on the leaves during the day. If the average length of the larvae is less than 1/2 inch long then an insecticide containing spinosad, a product derived from the fermentation of soil microorganisms, is one of the best treatments.

If the larvae are between 1/2 and 2 inches long, then insecticides such as ones containing carbaryl (Sevin) or malathion should be used. Once the insects are more than 2 inches long (which is a couple of weeks away), they are about finished with their feeding and spraying is little more than revenge.

Samples received/Site visits

Aurora County, European elm scale

The European elm scale adult is oval, brown with a white fringe. They are about 5/16 inches long. The adult and the crawlers produce honeydew, so infested trees are often covered with a sticky film. This film becomes infected with sooty mold so develops a dark appearance.

European elm scale egg hatch begins at about 550 GDD. The eggs are beginning to hatch now in many areas of the state. There is usually one, but sometime two, generations per year.

The near invisible young, called crawlers, are moving out to the leaves to feed until this fall when they will return to the twigs and settle down for the winter. Next spring, they will mature to become adults and the cycle continues.

Insecticides containing imidacloprid as the active ingredient may be used as a soil drench. This treatment needs to be applied earlier in the spring as it can take up to 30 days for the insecticide to move up into the foliage. The scale can be managed now with a foliage application of an insecticide containing bifenthrin, carbaryl, or permethrin that is labelled for this use.

The insect growth regulator pyriproxyfen can also be sprayed on the foliage at this time. This will disrupt the molting of the crawlers. This is a more targeted approach than the previously mentioned foliar insecticides.

Beadle County, Crown rust on common buckthorn

Many South Dakotans have small “crabapple” trees in their yards that produce small glossy blue-black fruit but never seem to flower. These are imposter crabapples;

they are the common buckthorn (*Rhamnus cathartica*). The tree is a weed.

People that think the tree is a crabapple become concerned when they see the leaves becoming covered with yellow to orange spots. This is the disease crown rust (Puccinia coronata). The disease causes yellow to orange spots on buckthorn leaves and petioles. While no one cares about buckthorn (except for the few folks that think it is a non-flowering crabapple in their yard), I usually get a few calls about this disease every year.

Crown rust, as with most rust diseases, alternates between two hosts. In this instance, the other host is oat. This is a serious disease of oats and can reduce yields to 20 percent.

Brule County, Look-a-like borers in ash

The redheaded ash borer (*Neoclytus acuminatus*) and the closely related banded ash borer (*Neoclytus caprea*) are common borers in stressed ash. They could easily be found in ash back in the 1980s and 1990s. Since they feed on declining or over-mature ash, they were not considered a serious threat to healthy trees.

Now when someone finds a declining ash, the first thought is emerald ash borer. If the bark is pulled away from a declining ash, the tunnels (galleries) craved by these native ash borers (*Neoclytus*) are like those made by emerald ash borers.

There are some differences in the galleries of these insects. The galleries of the native borers (above) are wider – closer to about 1/4 inch than the narrower tunnels cut by emerald ash borer larvae. The galleries made by the native borers are more meandering or running perpendicular to the grain than the zig-zagging serpentine galleries made by the emerald ash borer (below).

Clay County, Ash leafcurl aphid on green ash

This stop was to look at some suspected herbicide drift. While the leaves were curled, the causal agent was the ash leaf curl aphid, also known as the woolly ash aphid

(*Prociphilus fraxinifolii*). We usually do not see it until mid or late June, but this year samples and pictures are already coming in.

The symptoms are curled leaves forming rosettes at the ends of ash shoots, particularly the rapid growing terminal shoots of young trees. If you unfold the leaves, you will find little “fuzz balls” that are aphids. You might also find lady beetle larvae that are feeding on the insects.

Treatment is usually letting it be, since any treatment will not uncurl the leaves and the lady beetles do a fairly good job of control. Most insecticides are contact poisons and will not reach the aphids living inside the curls. Also, nothing will uncurl the infested leaves!

Any systemic insecticide applied as an injection or soil drench insecticide will not be absorbed fast enough to provide any control for the aphids this year. A spring application next year can prevent the problem from occurring next summer.

Custer County, White pine blister rust on limber pine

Native limber pines (*Pinus flexilis*) are sprinkled along the north-facing slopes of the Cathedral Spires in Custer State Park. We have located and measured about 185 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 beetles 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 became infected.

For more information on this relic stand are

https://extension.sdstate.edu/sites/default/files/2025-07/P-00346.pdf

Lawrence County, Red turpentine beetle

There is a lot of attention focused on pine engraver beetles and the mountain pine beetle (*Dendroctonus ponderosae*). But there is also a big brother to these two pine bark beetles, the red turpentine beetle (*Dendroctonus valens*). All three beetles can be found throughout the Black Hills.

The red turpentine beetle is usually not a concern, it’s a warning. Despite its larger size, it is not a tree-killer. It focuses its attention on declining trees. The red turpentine beetle will even attack fresh stumps!

This means turpentine beetles are found in pines stressed by fire or construction. You find the beetles in fire-damaged pines and native trees in new housing

development. Evidence of the attack is large, often two-inch pitch tubes on the lower three feet of the trunk.

Large pitch tubes are an indicator that the attacks were not successful. Lighter-colored pitch tubes with small piles of granular sawdust on the ground beneath them are indicator that the attack was successful. Attacks can occur in the spring to early summer.

Fire or construction damaged pine trees can be treated to prevent attacks with high-pressure lower trunk sprays with pesticide containing carbaryl or permethrin that are labelled for this use.

Minnehaha County, Hackberry petiole gall

This was more a curiosity than a threat to the tree. The question was about the balls forming on the young hackberries (*Celtis occidentalis*). These woody galls formed last year on the petioles of the leaves.

The galls were created by the feeding of a small psyllid, *Pachypsyllla venusta*. This insect is related to the psyllids that form galls on the hackberry leaves. None of the galls harm the host, but they can make the trees unsightly.

The hackberry petiole gall psyllid nymphs emerged from the galls earlier this spring. Adult psyllids lay eggs on the petioles (leaf stalks) of expanding leaves. Once the eggs hatch, the nymphs begin to suck the sap from the petioles while injecting the tissue with a chemical that causes cell proliferation.

Ten or more nymphs feed in the expanding gall. The infested leaves do not fall in autumn but wilt and remain hanging from the gall. The nymphs remain in the woody gall until the following spring.