



Tree Pest Alert



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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

The past week's weather was up and down. We had a high of 88°F in Sioux Falls on May 15 and then only 55°F on May 18. Rapid City saw the same temperature swings with a high of 92°F on May 13 and a high of 45°F on May 18! Frost was common across the state on the morning of May 20.

We gained another 60 to 80 growing degree days (GDD-base 50) during the past week. Here are the total GDDs for communities across the state.

Aberdeen	358
Beresford	644
Chamberlain	643
Rapid City	598
Sioux Falls	581

The viburnums are in full bloom across much of the state. These are some of our most valuable shrubs with mid-spring white flowers, attractive (and many are edible) summer fruit and red fall foliage.

One of the nicest is the American cranberry-bush viburnum (*Viburnum opulus var americanum*). This is native shrub found in the northeastern corner of the state as well as the eastern edge of the Black Hills. The American cranberry-bush is planted in communities across the state and windbreaks in the eastern part of South Dakota. It is not drought tolerant and performed best in areas with cool summer.



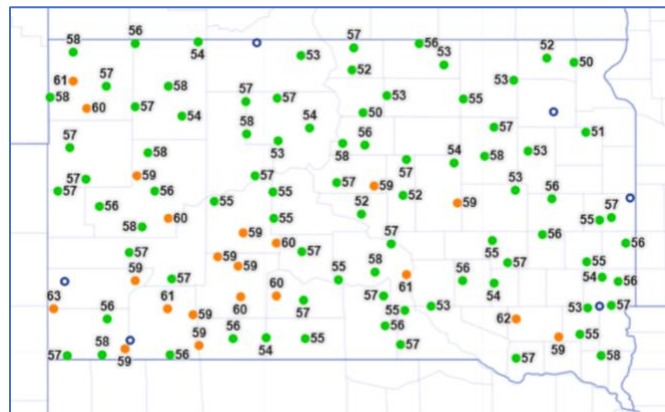
There is a closely related shrub which shares the same species designation, the European cranberry-bush viburnum (*Viburnum opulus* var *opulus*). The American is the recommended one for our area. The European cranberry-bush has become invasive in some eastern states.

Soil temperature

The soil temperatures at a 4-inch depth are in the 50s across the state. We are reaching soil temperatures - high 60s to low 70s - that are optimal for tree root growth. This is especially important for bare-root woody plants. The transpiration demands of young tree seedlings during leaf out is extremely high. Bud expansion cannot occur until the roots begin to grow.

We will also soon begin experiencing the summer heat. Bare root trees need warm soil to promote root growth but cool air temperatures to delay shoot expansion. Air temperatures in the 90s before the roots are established can result in mortality.

Unfortunately, we do not have other resource required for root growth – water.



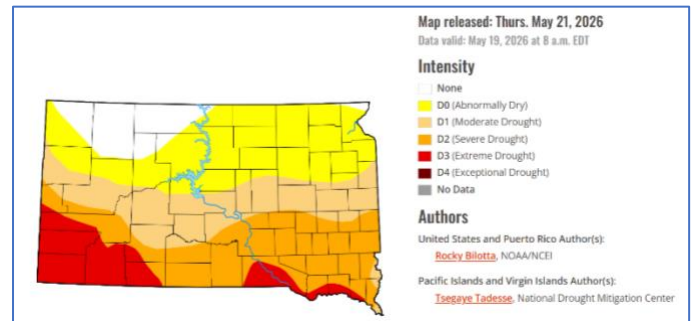
Drought monitor

The drought-free region of the state continues to shrink. We have slipped to less than 10 percent of the state being drought-free – the counties in the northwest edge of the state.

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 much of the Black Hills, is under “Extreme Drought,” along with parts of Bon Homme and Gregory 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[®] 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. We see pupae, no larvae, from Brookings to Dakota Dunes.

The pupae in the southern half of the state are now dark green and resemble an adult. The Sioux Falls area can expect to see EAB adults just after Memorial Day. The adults will be flying early to mid-June in Milbank.



More information on EAB lifecycles is available at:

<https://extension.sdstate.edu/sites/default/files/2023-05/P-00266.pdf>.

E-samples

Gummosis on Contender peach

Gummosis, the amber gummy sap oozing from the trunk, is a symptom, not a sign. That means it can be caused by many different stressors from mechanical damage to insect infestations. A clear sap is associated with mechanical injury; a reddish-brown sap is from canker disease or borer. A common reason for gummosis on peaches is canker diseases.



A common canker disease is cytospora canker – a term many readers might associate with spruce. Cytospora cankers are caused by different fungal species, each affecting a different host population – spruce and stone fruits as examples.

All the cytospora fungi are weak pathogens. They invade stressed hosts, ones suffering from drought or hail. The management involves keeping the tree healthy by watering and mulching the soil around the tree to keep the summer soil temperatures cooler. Stone fruits such as peaches and apricots do not like wet feet so do not overwater.

If gummosis is limited to a few branches, these can be pruned. Once it moves to the trunks, trying to improve tree health is the only option.

Gall rust on pine

At this point I only have a picture sent in from Grant County (see top of next page). It is a pine branch with large woody galls on some of the branches. This is likely to be pine-oak rust (*Cronartium quercuum* f.sp. *banksianae*). The disease causes large woody galls to appear on two- and three-needled pines. These galls can enlarge and choke out the host branch, but this is usually limited to a few small branches scattered in the canopy.

The cankers can slowly squeeze the affected branch. This results in the branch beyond the galls declining and eventually dying. The symptoms of the alternate host, the oak (*Quercus*) are small orange spots on the underside of the leaves.

The only treatment for pines with galls – and most pines will never become infected – is pruning out and destroying the branches with galls.



three form tents, though the forest tent caterpillars have a more open and smaller tent.

The larvae leave the nests during May and forage in the canopy of the tree. 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.

Grant County, Finger galls on chokecherry

The young leaves of this chokecherry (*Prunus virginiana*) are covered with these thin, cylindrical galls. This is the work of the eriophyid mite, *Eriophyes emarginatae*. The mites cause this unusual finger-like growth as they feed on the underside of the leaves.



Despite their appearance, the galls do not harm the plant. Nothing needs to be done to manage the mites.

Marshall County, Alcohol flux in sugar maple

The call was about some frothy, clear to white liquid oozing out of a crack in a sugar maple (*Acer saccharum*). This is alcohol flux. It is a bacterial infection in the heartwood and older sapwood that ferments, and the liquid is forced out of cracks by the pressure.

Alcohol flux has a fruity alcohol smell. It can sometimes look like dish soap foam, not the gross appearance and odor of slime flux, another liquid that can ooze out of trees.

Samples received/Site visits

Codington County, Tent caterpillar nests

Tent caterpillars (*Malacosoma*) nests are appearing everywhere along with the small caterpillars. There are three species of tent caterpillars in South Dakota, the eastern tent caterpillar (*M. americanum*), the western tent caterpillar (*M. californicum*), and the forest tent caterpillar (*M. disstria*).



The eastern and western seem to stay on their respective sides of the Missouri River with the forest tent caterpillar found in the northeastern part of the state. All



Alcohol flux occurs in many maple species. We usually see it during late spring. The flux does not harm the tree, but the crack indicates some internal decay. But despite the name alcohol it is not drinkable so no licking the tree!

Minnehaha County, May beetles are coming out of the soil.

May beetles (*Phyllophaga*), also known as June bugs, are crawling out of the soil. A gardener notices some while planting flowers. These beetles are called May or June as these are the months the adults emerge from the ground and are flying.



The adults are shiny reddish-brown and about an inch long and stout. This insect spends most of its life underground as a C-shaped larvae, about 1 to 1 ½ inches long, while feeding on the roots of grasses, crops, and other plants. They are one of several larvae in the soil commonly referred to as white grubs. The larvae take about three years to complete their life cycle in the soil and emerge in the spring (May) as adults.

The adults feed on the young leaves of many tree species but seem to have a fondness for ash and oak. The adults are nocturnal so many people cannot figure out what has been chewing on the tree's leaves since

they never see the insect. The adults are also a nuisance as they buzz around light fixtures at night so you can find them in the parking lots of gas stations.

While the larval stage – the C-shaped grubs – do feed on turf roots, they usually are not the reason for patches of brown turf. This is usually due the European chafer or Japanese beetle.

Minnehaha County, Black rot on apple

Last week I mentioned that an image sent in as a e-sample showed symptoms associated with the fungal disease called black rot (*Diplodia seriata*, syn *Botryosphaeria obtusa*). This disease affects the fruit, leaves and branches of apple trees. It is sometimes mistaken for the bacterial disease fireblight (*Erwinia amylovora*) which can present similar symptoms.

Infected fruit will develop large brown rotted areas around the blossom end. The rotted tissue will often have concentric circles. The infected fruit will remain mummified and hang all winter.



This was a site visit to another property that had numerous mummified fruits. This is a classic symptom for black rot. There were also red specks on the sepals of some of the remaining flowers on the tree. This is also a common symptom of black rot.

The best management is to dispose of the mummified fruit. The dead branches should also be pruned. While this sanitation pruning should have been done during the late dormant season, it is better to do it slightly late than wait till next year. The mummified fruit and dead branches should be destroyed, not left on the ground or tossed in the compost bin.

We may not see much of the disease this year. The spore germination requirements are four to eight hours of wetting during temperatures between 70°F and 80°F degrees. These environmental conditions have been rare this spring.

Minnehaha County, Wrong pine treated for pine wilt

This was a stop to look at a pine with some stunted shoot tips with discolored needles. The problem appears to be diplodia tip blight – a fungal disease. But the tree owner was concerned it was the early symptoms of pine wilt disease.



The tree was being treated for pine wilt disease. The treatment for this nematode-induced disease is injections of abamectin. These are repeated annually. They are used to prevent pine wilt disease from developing in healthy pines. They cannot be used on infected trees.

But the treatments were unnecessary for this tree. The tree is a ponderosa pine (*Pinus ponderosa*). This species is not affected by the disease. The disease is most common on three introduced pines, Austrian pine (*P. nigra*), mugo pine (*P. mugo*) and Scotch pine (*P. sylvestris*).

Marshall County, Bur oak blight

This site visit was to look at bur oaks in a woody draw. The leaves on several of the oaks had a common symptom of fungal disease bur oak blight (*Tubakia iowensis*). The trees were covered with dried dead leaves from last year. The new leaves were emerging between them which was quite a contrast.

IA month from now I suspect these young leaves will have dark veins beginning to develop on their undersides. The tops will show faint yellowish wedge-shaped patches that followed the major veins. These are also common symptoms. We can do testing to confirm if it is the pathogen.



The trees were the small acorn variety of bur oak, *Quercus macrocarpa* var *oliviformis*. This is the variety that is susceptible to the disease. It is also the native bur oak in South Dakota east of Hwy 81 and between our borders with Nebraska and North Dakota.

The disease is not a death sentence for an infected tree. Many can recover and most native bur oaks will never become infected. The disease may be more severe in regions with normal or above-normal precipitation. The northeastern corner of the state is one of the few areas that has not experienced drought during the past few years!

There are fungicide treatments for infected trees, but these are best applied to individual landscape trees that have presented symptoms in the past. Injecting trees in woody draws is impractical.