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 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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Plant development for the growing season

We had a nice week when the temperatures were in the 40s and 50s. Now the roller-coaster car is diving down to below zero again. We will go up and down several more times this winter so we might as well enjoy the ride.

Sioux Falls had a high of 58ºF on January 30. Several other communities also experienced temperatures in the 50s. This was enough to move the growing degree day (GDD) needle. As a reminder I am posting the formula to calculate growing degree days base 50.

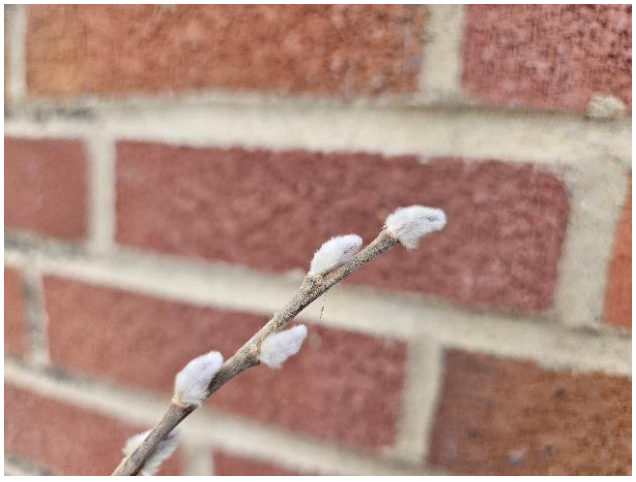
GDD = [(high ºF + low ºF)/2]-50
If the high is above 86ºF, use 86ºF in the equation.
If the low is below 50ºF, use 50ºF in the equation.

Rapid City had a high of 62ºF on January 29 with a low of 24ºF. So GDD = [62-50/2] – 50 = 6

The communities along or south of I-90 are the first communities to start accumulating GDD. Aberdeen – in the frozen tundra of the north – is the last.

Aberdeen	0
Beresford	8
Chamberlain	8
Rapid City	6
Sioux Falls	5

Most woody plants do not begin to leaf out or flower until we reach about 300 GDD so we still have a long time to go! But if you need a sign of spring, some of the willows are shedding their brown "caps" revealing the silvery hairs.



Drought monitoring

The entire state is classified as “Moderate Drought” or a greater drought intensity by the US Drought Monitor. The dry soil is developing large cracks, appearing like long crevasses on a glacier. These cracks are common in dry, clay soils that are experiencing fluctuating temperatures.

Cold temperatures and dry soil are a bad combination

The dry winter means there is little snow cover. While snow is a pain to shovel, it provides an insulating blanket that protects roots from low-temperature injury. Most people are surprised to know that roots do not tolerate as cold of temperatures as the above-ground parts of the plant.

Most roots tolerate soil temperatures to a low of 15ºF. This threshold applies to trees as well as perennial bed plants. Temperatures that dip below this threshold in the upper four inches of the soil – where root density is highest – means a loss of roots, a fatal number of roots lost for a plant.

The soil temperatures across the state are in the low 20ºFs at a four-inch depth in bare soils. These are survivable root temperatures, but we still have a lot of winter to go. There are also a few counties, such as Codington, Campbell, Clark, Codington, Dewey, Kingsbury, Potter, and Ziebach, where the soil temperatures are around 15ºF to 16ºF.

If cold temperatures and bare soil conditions continue through February, I expect to see some losses in young windbreak plantings come spring. These trees will turn brown, rather than bright green, since the roots are dead and cannot bring water to the foliage.

We also have some locations in the Rapid City area where the soil is just above freezing. Winter watering is a possibility in these locations.

Treatments to Begin Now

Winter watering revisited

Winter watering may be good practice in communities along the edge of the Black Hills. This is especially true for evergreen shrubs and small trees located along the south side of homes where the daytime air temperatures reach 60ºF or even higher.

The best way to water woody plants during the winter is to only water when the soil is not frozen. The air temperature must be above 40ºF. The watering should be restricted to midday so it will soak into the soil before night.

The objective of watering is to keep the roots moist. The roots of an otherwise dormant tree can be active if the soil temperatures remain above freezing. There are some spots in Rapid City where I can sweep the pine needle mulch away and find live roots an inch or two below the ground.

Questions about winter pruning

When we do get those short episodes of warm weather some tree owners take the opportunity to do a little tree pruning. Are there any advantages to winter pruning? What might be the concerns?

Late winter is a good time to complete many tree pruning chores. It is not the only time, but it is one of the best. It is easy to see the branching arrangement in the canopy so a simpler task to identify the branches to prune.

It is also a time of year when disease pressure is at its lowest. Late winter is a good time to do sanitation pruning to remove branches infected with fireblight or canker diseases. This practice may not eliminate a disease – often the infections extend farther than the symptoms – but it can be helpful.

There are a few negatives. If the tree is a “bleeder,” one of the maples or birches, the pruning wounds may drip sap during a warm winter or spring day. I have even seen silver maples covered in “sapsicles” after March pruning. This oozing does not harm the tree but can appear alarming. Just remember its sap, not blood.

The other negative is you might have to prune twice if you prune during February. We have a lot of cold weather yet to come this year. If we have a short episode of temperatures below zero in late March just as the tree is losing dormancy, it might suffer some branch dieback. This will need to be pruned.

This is the reason I delay pruning fruit trees until mid-March. This way I can prune out any branches that may have died in late winter first before I complete any structural pruning to improve the form.

Timely Topics

Emerald ash borer update

Emerald ash borers (EAB) larvae are doing fine. The cold we have experience is not cold enough to kill many larvae. I expect to see good survival this winter which means lots of adults will be flying this June.

E-samples

What is this shrub?

This is the time of year when people download the picture files off their phones. They remember that they took a picture of an interesting plant but do not remember its name. This is one of them.

While the plant may be interesting, it is on the state's naughty list. Salt-cedar, also known as tamarix (*Tamarix*), is an invasive species and on our noxious weed list. The shrub was popular as an ornamental in South Dakota back in the early 1900s till the 1970s. The shrub, which can reach a height of ten feet or more, has clusters of tiny rosy-pink flowers during June and July.

It is also indestructible on tough sites. Salt-cedars will grow on saline, alkaline and sandy soils in riparian areas so well it can outcompete any of the native vegetation. Interestingly, it has a hard time establishing on well-drained, neutral, fertile soils – it is not invasive out East.

But in South Dakota and much of the Interior West it is a weed and must be removed.

Samples received/Site visits

Brookings County, Beaver damage

Beavers have moved into a stand of sapling white poplars – this is like candy to them! Beavers gnaw down trees with their teeth for food as well as use the fallen trunks and brush for building material. They also need to keep chopping down trees as their incisors continue to grow throughout their lives. Chewing woody material provides the necessary wear on the teeth.

All fine – unless its your trees the beavers decided to buzz through. Aspens, cottonwoods, poplars and willows are among their favorites, but they will also feed on maples and ash among others. There are a few options – other than trapping – that can protect your trees.

One of the most common is installing heavy metal wire fencing with a mesh between 2- and 4-inches around a tree. The fencing must be at or slightly below ground level and supported by t-posts. Do not staple the wire to the tree. There should be a gap of 6 inches or more between the wire and the tree trunk.

Other options include painting the base of trees with a cayenne pepper and oil solution. This is a taste deterrent. The bark becomes bitter enough that the beaver will avoid the tree. This must be reapplied twice a year at least. The other disadvantage is the oils can damage smooth, thin bark of young trees.

Brown County, Oak gall – not acorns

This stop – while I was in the area for a conference last week – was about a bur oak that does not drop its acorns. Now there were some acorns still hanging on the tree but they were only the caps. Most of the acorns still hanging were not acorns but oak galls.

The oak rough bullegall is caused by the feeding of a small wasp (*Disholcaspis quercusmamma*). The tiny adult female lays eggs on the shoots. After the eggs hatch the small larva feeds in the shoot. It also secretes a chemical in the shoot, so a woody gall forms around it.

The galls become woody during the growing season, turning brown and hardening. They may also become

stained with a dark powdery film. The larva pupates in the gall during late summer with the adults emerging during October.

The empty galls may remain attached to the shoot for several years - hence the acorns that do not fall. The galls do not usually harm the host, but branch dieback can occur during heavy infestations.

Hutchinson County, Willow cone midge

This is a sample I receive several times a winter. Someone walking through or by some willow shrubs notices these pinecone-like galls on the tips of the branches. These galls are the result of feeding by the willow cone midge (*Rhabdophaga strobiliodes*).

The adult midge is a small fly. The female lays eggs on the terminal buds in early spring. The eggs hatch before the willow buds open and the larva burrows into the bud. Chemical secreted by the worm-like larvae cause the bud cells to proliferate so the bud becomes enlarged and cone-shaped. The infested bud does not open.

The larvae overwinter in the gall, pupae in early spring. The adults emerge soon afterwards. There is only one generation per year.

The galls do not harm the host, just give it an interesting appearance.