South Dakota State University Extension

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 weather remained summer-like during the week with daytime temperatures in the 80s and 90s across the state. There were a few cool days by the weekend. Even some snow flurries in the higher elevations in the Black Hills. It was nice to walk in light snow after a week of hot weather.

The hot temperatures pushed the accumulated growing degree days (GDD base-50) by more than 100 DD again during the past week. Here is the current GDD accumulation for communities across the state.

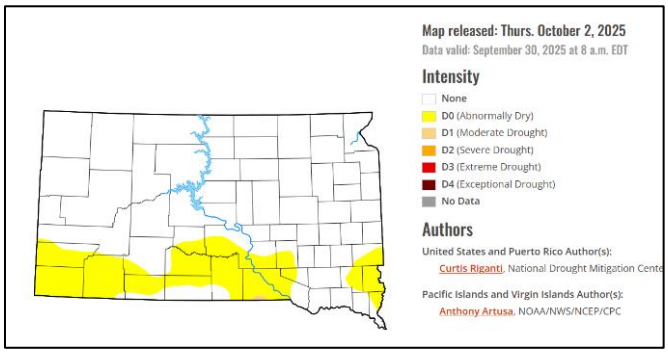
Aberdeen	2819
Beresford	3320
Chamberlain	3380
Rapid City	2760
Sioux Falls	3300

All locations, except Rapid City, are ahead in GDD from last year (2024) and the year before (2023). This has been a warm year for much of the state.

Drought monitoring

While rain was scattered last week, many areas of the state are still above average in annual rainfall. Slightly over 80 percent of the state is drought free. Another 20 percent of the state is classified as "Abnormally Dry." Less than 1 percent of South Dakota is classified as "Moderate Drought." This is concentrated along the counties that border Nebraska.

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



Despite most of the state not under some level of drought intensities, the southeastern quarter of the state is dry and becoming drier. Sioux Falls is almost three inches below average for precipitation.

Treatments to Begin Soon

Watering trees for winter

Remember now is the time to water your trees, not just before the soil freezes. We have had good rains this year in much of the state, but it is turning drier as we move into fall. If you are in an area that has not received at least three inches of precipitation during September, you may want to begin watering the trees, particularly the young ones in the landscape and windbreaks.

Timely Topics

Emerald ash borer update

We continue to monitor larval development of emerald ash borer (EAB) from Dakota Dunes to Milbank. The larvae are mostly 4th instars. A few are already burrowing in the sapwood to carve out their overwinter chamber. The larvae will not be feeding much longer. They are getting ready for their long winter nap. Any insecticide injected into the trunks now will not kill many larvae this fall since they are finishing feeding.

Ash trees are dropping their leaves now. This is another good reason not to be injecting trees now. Insecticide uptake is best when the leaves are active and pulling up water. It is better to wait until spring, after the leaves are fully open (and their flowers are fading).

Tree tube stakes

I was inspecting a young windbreak this past week. I was impressed with the staking for the tree tubes. The tubes were straight, even those that had the trees bending above the tubes. The stakes were made of fiberglass which is stronger than wood but will bend without breaking.

The stakes were 75 inches long. This allowed the top of the stakes to be at or slightly lower than the tube top. The stakes also extended about 16 inches into the ground, which provided enough anchorage to keep the weight of a leaning tree from tipping the tube. The stakes were flexible so not very attractive for deer to rub.

Fiberglass stakes, which are offered by tree tube distributors, are a great choice for support.

E-samples

Drought symptoms in deciduous trees

I am receiving pictures of deciduous tree leaves – such as this oak on the next page – with interveinal patterns of necrotic tissue. The veins remain light green to yellow. This is leaf scorch. It is the result of the combination of high temperatures and drought.

Leaves release water vapor back to the atmosphere through a process called transpiration. This process is the driver for water and nutrient movement in the tree as the water is pulled up from the soil. The release of water vapor also cools the leaf.

Water absorption from the soil sometimes does not keep up with water loss from the leaves. When this happens, the leaves close their pores (stomata) to reduce water loss. A by-product of this action is the leaf will begin to warm since evaporative cooling has decreased.

This causes the leaf to dry out from the heat and lack of moisture. Usually, the edges of the leaves and the tissue between veins are the first affected. Eventually the entire leaf crinkles and dies.

Drought symptoms in evergreen trees

People are also noticing their young pines and spruces have needles turning yellow or brown. This is not the normal third to fifth year needle drop that is also occurring now.

These are the current needles that turned color. The shoot growth this year is also stunted, and the needles are shorter than normal. These are common symptoms of drought stress on evergreens.

Samples received/Site visits

Charles Mix County, Clearwing ash borer in green ash

A tree owner was concerned that their ash trees were infested by EAB. The canopies had died back. There were also pencil-size holes in the trunk. Some holes had sawdust powder around them. This was the work of the lilac/ash borer (*Podosesia syringae*), also known as the clearwing ash borer. It is native to South Dakota and found in ash and lilacs.

This was the most common ash borer until EAB arrived in South Dakota. It is not a tree-killer – as with EAB – but instead is a disfigurer, causing dieback in the canopies and swollen areas along the lower 10 feet of the trunk. They infest trees that are already stressed by drought. The combination of drought and the burrowing by the lilac/ash borer can kill young trees.

The adults will emerge next spring, beginning in early May, and the female lays eggs on the bark. The eggs hatch within two weeks. The young larvae have legs, unlike EAB, and crawl to a spot in a bark crevice to begin burrowing into the tree.

An insecticide applied at the beginning of May can kill the adult females before she lays eggs. The insecticide film will also kill any larvae that are crawling on the bark. The most effective pesticide is one containing Carbaryl or Permethrin as the active ingredient. The formulation should also be labelled for borers.

Charles Mix County, Tree-of-Heaven identification

The tree owner wanted to know if the tree was a black walnut (*Juglans nigra*). No, but close in appearance to this tree. This was the tree-of-heaven (*Ailanthus altissma*). Both walnut and tree-of-heaven have pinnately compound leaves, but the tree-of-heaven leaflets have two small glands at the base of each leaflet.

Another major difference is the ground beneath walnuts right now is covered with round fruit husks. Many have already been broken by squirrels to expose the nut inside. The fruit of tree-of-heaven is clusters of flat samaras.

The bark of tree-of-heaven is smooth and brownish green on young trees. The bark of mature trees turns gray and has a texture of a cantaloupe. The bark of a walnut is darker and has furrows or is plated.

No one wants a tree-of-heaven. First, they smell (which the tree owner had noticed and that was the clue it might not be a walnut). Second, they are the favorite food of the spotted lanternfly (*Lycorma delicatula*). This invasive, sucking insect is established in the easter third of the country where it has become a major annoyance.

Custer County, Shoestring root rot

The appearance of small mushrooms on rotting tree stumps was the reason for this stop. The landowner wondered if these would hurt their pine trees.

The mushrooms had dark honey-brown caps about 1 to 3 inches across. The caps had fine hair on top, and the underside had white gills. There was a ring-like structure on the upper stems. These are the fruiting structures to an armillaria root fungi (*Armillaria*). These are several closely related fungi that cause root diseases in trees.

These fungi are responsible for root decay in ponderosa pines in the Black Hills. They can also infect other tree species in the region. As the tree roots decay, the tree becomes more susceptible to falling during wind or snow loading.

While the disease is most common in mature trees, you usually can find younger trees - small seedlings to saplings - around the larger trees that are also dying from the disease. Armillaria often shows as pockets of declining trees with these pockets slowly expanding over the years.

The pathogen can persist in the host for years or even decades without causing much injury. But if the host becomes stressed – drought is a common one – then the pathogen begins to kill the tree.

Managing the disease in pine stands is not practical since it persists in the soil though removing stumps can help. Instead, the focus is managing the tree's vitality. A healthy tree can tolerate an infection. Thinning forests is the most common management activity for this disease

Gregory County, Death by fabric

The trees in this row of Scotch pine (*Pinus sylvestris*) appeared stunted. Many were dead and some had already fallen over. Oddly, the trees showed normal shoot extension until growth finally just stopped.

A little digging revealed the problem. The fabric was embedded in the tree trunks or folded and pressed against the bark. This is becoming a common problem in pine, spruce, and cedar belts. The evergreen foliage shaded the ground, so the fabric does not break down. It often looks as good as the day it was installed, especially if a little soil and litter cover the fabric.

It usually takes about ten to 20 years for the fabric to gridle a tree trunk. The trees look good, and growth is normal until it suddenly stops. It does not happen all at once but most trees in a row will be affected within five years or so.

It is too late to do anything for these trees, but fabric should be inspected five years after installation. If possible, the fabric should be removed at this time – it has done its job for weed control as the trees become established. If the fabric cannot be removed, then wider slots need to be cut to allow the trunk to continue to expand.

Minnehaha County, Zimmerman pine moth

This was a row of distorted Scotch pines. Many trees had branches that broke near where they connected to the trunk. This was the work of the Zimmerman pine moth (*Dioryctria zimmermani*).

As larvae, this insect burrows into the wood where the branches are attached to the trunk. The tunneling causes the branches to break. There will also be soft, pinkish pitch around these junctions. This was the attempt by the tree to prevent the larvae from burrowing into the tree.

The adults were flying in August. They have already laid eggs, the eggs have hatched, and the tiny larvae are in cocoons (hibernaculum) beneath bark flakes. Next spring, they will emerge, crawl to the base of a branch and burrow into the wood. They feed in the sapwood until late summer, pupae for a short period and emerge as small adult moths.

Control is focused on killing the larvae as they hatch in late summer or in the spring as the larvae are crawling on the bark. An insecticide labelled for this use can be sprayed on the trunk at either or both times to control the insect.