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 temperatures were warm during much of the week. The high in the 80s and 90s with a few humid days to remind us we are still in summer (despite schools starting next week).

The GDD increased by another 140 to 160 during the past week. Here is the current GDD accumulation for communities across the state.

Aberdeen	1974
Beresford	2380
Chamberlain	2391
Rapid City	1940
Sioux Falls	2357

We are seeing many of the late summer flowers now. One of the nicest is the trumpet vine (*Campsis radicans*). This is a heat-loving plant. The flowers do not put on a show until August. But trumpet vine will continue until mid-September.

Another name for the plant is hummingbird vine. These small birds are attracted to the bright orange to red tubular flowers.

If the flowers and fruit – the long bean-like capsules – remind you of catalpa (*Catalpa*), you are close. They are both members of the Bignoniaceae family.

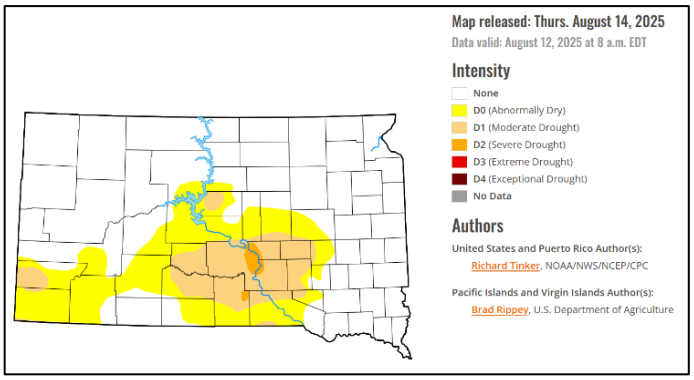
There are some cautions to growing trumpet vine. It produces thick mats of aerial rootlets so it will cling to any tree or structure. Do not plant next to the house unless you want it to climb to the roof! It also suckers so expect small sprouts to appear on the lawn.

Drought monitoring

We received some rain during the past week, but it is becoming drier. This is not uniform across the state. Aberdeen is ahead of average for the year while Sioux Falls is behind. Pierre and Rapid City are just slightly behind.

Almost 70 percent of the state is drought free. Another 20 percent of the state is classified as 'Abnormally Dry.' About 10 percent of South Dakota is classified as 'Moderate Drought' and less than 1 percent of the state, a small stretch of the river between Lyman and Buffalo-Brule Counties classified as 'Severe Drought.'

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



Treatments to Begin Soon

Banded clearwing ash borer

Most insects and diseases are beyond their treatment window. Usually when we see signs of a pest or problem at this time of year, the only advice is wait until next year to treat. There is one insect, however, that is beginning to emerge now.

This is the banded clearwing ash borer (*Podosesia aureocincta*). The wasp-like adults are emerging from ash trees in the eastern side of the state. This insect is a close cousin to the clearwing ash borer (*Podosesia syringae*) which emerges in the spring. It has the name 'banded' because of the yellow partial strip towards the end of the abdomen.

The banded clearwing ash borer only infests ash trees – green ash is its favorite. The clearwing ash borer is equally at home in ash or lilac. The banded clearwing ash borer is only found in eastern South Dakota while the clearwing ash borer is found throughout the state.

These two clearwing borers emerge from a round hole while the emerald ash borers cut a D-shape hole as they emerge. Another difference is that the larvae for clearwing borers push their frass – a granular powder of poop and chips – out of the hole so you will often find this dust at the base of an infested tree.

The banded clearwing ash borer treatments are the same as the other clearwing ash borers – a trunk application of an insecticide containing Permethrin as the active ingredient and labelled for this use. The difference is the treatment is applied now as the adults are out laying eggs in late summer, not spring as with other clearwing ash borer.

Timely Topics

Emerald ash borer updates

Emerald ash borers (EABs) are mostly in their 3rd instar (molt). We can still find 2nd instars in Milbank where insect development is a little slower due to the cooler weather. I expect to start seeing some 4th instars – the final larval stage in infested ash in Dakota Dunes this week.

Storm damage in windbreaks

The recent storms left a narrow path of damaged trees and structures from Lennox to Hudson. The intensity of the damage increases as you get closer to Hudson. Destroyed homes, barns, outbuildings, and trees are a common sight.

The cleanup will take weeks, even months. But some producers are already beginning to tackle the destruction of their mature windbreaks. Many of these windbreaks have uprooted or snapped trees which cannot be restored.

Often the best approach for these windbreaks is to completely remove the tree rows. The few trees left standing are not worth saving. These trees may also be injured despite appearing to be sound. The violent swaying during the storm may not have caused them to snap but still causes enough internal injury. The tree may die within a year or two. Best to remove now.

Many of these windbreaks also had mature ash and Scotch pines, two trees with a short shelf life due to emerald ash borer and pine wilt disease. It does not make a lot of sense to spend resources saving trees that will be killed by the borer or disease within a few years.

To aid windbreak owners in their decision on what to do, there will be an evening discussion on Tuesday, September 23 from 6:30 to 8:00 in Lincoln County. The location will be announced next week. The workshop will involve forestry professionals from the Lincoln Conservation District, South Dakota Department of Agriculture and Natural Resource, South Dakota Cooperative Extension, and the National Resources Conservation Service.

Tree tube staking

While tree tubes (tree shelters) reduce tree mortality and increase growth, they have some challenges. One issue is that tree trunks in the tubes do not develop good taper as they are protected from the wind. Gentle wind movement is beneficial to a young tree as it helps the slender trunk to become stronger.

If the tubes are removed too soon, while the tree is still entirely sheltered by the tube or the canopy is just above it, the flexible trunk will just bend over. The tubes should be left on until the trunk nearly fills it.

But as the canopy of the tree starts to fill above the tube, the slender trunk may lean slightly. The trunk may lean enough to be pressed against the top of the tube. This causes two problems: the trunk can rub against the top of the tube or the weight of the canopy can bend the tube, so the tree is excessively leaning.

The damaging from trunk rubbing against the top of the rigid tube can be reduced by installing tubes with a thick, rounded rim at the top. Some growers have glued a foam strip need the top of a rigid tube to protect the trunk.

The problem with the tree bending the tube can be reduced by installing stakes. The stakes can be made of plastic, wood, or metal. I prefer a 1” x 1” (minimum) wooden stake. PVC stakes (3/4” to 1” diameter) may still be too flexible and bend with the tube. Metal stakes can be too rigid. Deer seem to like to rub on the metal t-posts used for staking.

Wooden stakes do rot and are not reusable so there is no perfect staking material. Regardless of which material is used, the installation is similar. The stake should be placed about 3 inches away from the seedling so the tube will be centered over the tree. The stake must penetrate at least one foot into the ground, deeper is better. Finally, the top of the tube should be above the stake, but the stake top should be 6 inches above the top zip tie position.

E-samples

Ash flower galls

People seem to be looking at their ash a little closer now with emerald ash borers drawing attention. Fortunately, this was not related to the borer, but a mite. This is the ash flower galls caused by the (no surprise) ash flower gall mite (*Eriophyes fraxiniflora*).

The mite feed on the staminate flowers, and since we do not like seeds, all our ash cultivars are staminate (male) trees. This resulted in lots of food for the mite. The ash flower gall mite became a problem with the widespread use of seedless ash cultivars in the 1970s.

The feeding results in the flowers becoming rounded cauliflower-like, greenish-yellow galls. These galls will turn deep brown and woody by this autumn. They may persist on the tree for several years. The galls do not harm the tree, but they do look unsightly. No treatments are necessary or effective.

Notched and cut leaves – leaf cutter bees and root weevils

I have been receiving pictures of leaf margins with notches and half-circles cut into them. The question is what is doing this damage?

Two different insects for starters. The half circles are cut by the leafcutter bee (several genera in Megachilidae). These bees, about the size of a honeybee), neatly cut 1/4- to 1/2-inch circular pieces of leaf tissue from the margins – almost looks like someone took a hole-puncher and started cutting leaves!

The leaf pieces are used to line their nests. The leaf pieces are rolled like a cigar; each piece has an egg and a little stored pollen (for a snack when they hatch). The cigar-like nests are formed in tree cavities and the soil.

The most common leaves used are from trees and shrubs with thin foliage, so ash, redbud and roses are among their favorites. Leafcutter bees are important pollinators so better to tolerate some notching rather than kill off pollinators.

The notching on the lilac leaves that can be seen at this time is due to a root weevil (*Otiorhynchus*) most likely the lilac root weevil (*O. meridionalis*). The adults of these insects cut angular notches along the edge of leaves. The adults feed at night so they are rarely seen on the plant, but they like homes to sleep during the day so do not be surprised by a few on the kitchen counter in the morning looking for coffee.

The larvae feed on the roots, hence the name root weevil. They rarely feed on enough roots to bother. The notches are unsightly but also not a problem. The black vine weevil (*O. sulcatus*) feeds on yew and rhododendrons and their larval feeding can result in the death of these shrubs.

Samples received/Site visits

Lincoln County, Leaf spot/defoliation on lilac windbreaks

Yes, this is a repeat of last week, but the calls keep coming in! Leaf spot diseases, pseudocercospora and septoria among others, on lilacs are causing concern in eastern South Dakota. These leaf spot diseases begin as brown spots starting at the margins and progressing to blotches and eventually defoliation.

Most of the calls and visits are for lilacs in windbreaks though I have seen in in landscape as well. I have looked at some windbreaks this past week where every lilac in a row is bare except for a few leaves at the tips. These diseases require warm, humid conditions to flourish, and it has been wet and humid this year.

These leaf spot diseases are not a threat to otherwise healthy shrubs. Lilacs can withstand a year of defoliation, so no control is always necessary. If the lilacs were affected last year and again this year, a fungicide application of Chlorothalonil (labeled for this use) can be made just as the leaves are opening next spring to reduce the severity of the disease.

Minnehaha County, Oak lace bugs

This was a stop to look at 'tiny bugs on a tree.' They were oak lace bugs (*Corythucha arcuata*). The lace bug is a sucking insect that feeds on the underside of the leaves. The feeding causes white to yellow stippling on the upper leaf surface.

Severely infested leaves turn yellow, then brown, before falling prematurely. While oaks are rarely killed by the defoliation, repeated attacks can result in enough defoliation that branch dieback occurs. These stressed trees are also more vulnerable to attack by the two-lined chestnut borer, which can kill the tree.

Right now, if you flip over a discolored oak leaf and look at the underside, you will notice these black, shiny "varnish spots," which is the poop from the lace bugs. Some of the lace bugs should be nearby; these small (1/4-inch) adults have flat wings with intricate, almost lacy, vein patterns (hence the name lace bug). The thorax has a similar pattern to their wings.

There are nymphs and adults out right now. The adults are the ones with flat, lacy wings. They are the overwintering stage and will be moving to bark crevices and leaf litter to wait out the cold.

The damage is about finished, so there is no need to treat the trees.

Lawrence County, Aphids on oak

This was a sample sent in. The leaves were slightly cupped and had small necrotic spots. There were some dead aphids in the bag. The note said that 2,4-D and Dicamba were used as spot treatments in the lawn.

While herbicide injury cannot be determined – the sample is too small for testing – the symptoms of the leaves can entirely be associated with aphid feeding.

Moody County, Honeysuckle aphid

These aphids were of major concern when they first appeared in the 1980s. Its primary host, the Tatarian honeysuckle (*Lonicera tatarica*), was considered a pest-free shrub up to then. Unfortunately, the honeysuckle aphid (*Hyadaphis tataricae*) arrived from eastern Europe into the Chicago area in the early 1980s and quickly spread out to wherever its native host, the Tatarian honeysuckle was planted.

The aphids feed in large colonies sucking the sap from the plant while injecting the tissue with a growth regulator. This results in the formation of witches'-brooms. These are clusters of stunted shoots and leaves that form at the tips. Many people confuse the damage with herbicide drift.

The aphids overwinter as eggs in the witches'-brooms and there are multiple generations per year. The feeding rarely kills the host but does reduce growth and makes the plant unsightly. While there are some insecticides labelled for this insect but the most effective are applied as systemics, so they are absorbed into the foliage. Contact insecticides will not reach the aphids inside the folded leaves.

There are cultivars of Tatarian honeysuckle that are resistant to the aphid. The resistance is not perfect so some damage should still be expected. The three cultivars most used are Arnold Red, Freedom, and Honey Rose. Freedom has the best leaf quality while Arnold Red is the hardiest, adapted to even USDA Plant Hardiness zone 2. All are adapted to South Dakota

Stanley County, Spruce spider mites

A common misidentified pest on spruce is the spruce spider mite (*Oligonychus ununguis*). This cool season mite is blamed for every problem with spruce from discoloration to dieback. Usually the problem is something else, but not in this instance.

The foliage on the spruce very thick with debris – the fine webbing catches everything - and small yellow spots (stippling) from the feeding injury by the spruce spider mites.

While the damage is visible, the mites are not. They are still dormant – mostly as eggs - as the temperatures are in the 80s. The eggs will hatch once the temperatures cool. This usually coincides with fall foliage color developing on silver maple.

These trees should be treated this fall once the mites become active. Considering the size of the trees, I recommend hiring a commercial applicator. Not only do they have equipment that can have the spray reach the entire canopy, but they also have restricted use miticides that are more effective and cause less harm to nontarget insects and mites.

Union County, Aphids on red oak

This was a large northern red oak in Dakota Dunes with drooping leaves. The twigs were also covered with a black powdery film.

The underside of the leaves had large aphid colonies. The small insects, known as plant lice, suck sap from the leaves. This feeding can cause the foliage to curl and the surface covered with small white to yellow dots referred to as stippling. The leaves will have a slight sticky film from the honeydew the aphids excrete as they feed.

The black, powdery film was from sooty mold. This is a fungus that lives on the surface of leaves and twigs (and anything else beneath the tree). It is living off the sugary honeydew. The black, powdery texture is the mycelium of the fungus. Sooty mold does not harm the tree; it just makes it look unsightly.

Aphid populations can expand and contract very quickly. Aphids can give birth to live young, skipping the egg stage, so populations can explode. Fortunately, other insects find aphids tasty and the population can collapse equally fast. The ladybeetle larvae were already at work so there was no need for any insecticide treatments.