



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 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

It looks like spring has finally arrived in all of the state except for some of the northern counties where a blizzard occurred over the weekend in Harding and Perkins County.



The growing degree days (GDD – base 50) in Sioux Falls and many other central and eastern communities is still running a little behind from last year (though slightly ahead in the Black Hills region). At this time last year, the Norway maples were in bloom in Sioux Falls, an event that occurs at about 150 GDD. This year the forsythias are just beginning to bloom in Brookings. We are not seeing our spring blooms quite yet but hopefully flowers will appear before Mother's Day.

The 2022 GDD accumulation for these South Dakota cities is currently:

City	2022
Aberdeen	36
Beresford	193
Chamberlain	217
Rapid City	184
Sioux Falls	140

Soil temperatures are still cool across the state. Soil temperatures are about 45°F in the southern half of the state. The northern third soils are still in the mid-30s. It may take another week or so for this region to catch up in soil temperatures. We can probably begin planting bare-root stock across the state in another two weeks.

The ideal conditions are soil temperatures in the low 50°Fs and air temperatures in the high 60°Fs. The planting weather should be cloudy, humidity and the wind speed less than 10 mph. A slow soaking rain the night after planting would make it just about perfect!

Treatments to Begin Now

Spruce spider mites

Spruce spider mite (*Oligonychus ununguis*) eggs (see below) will soon begin hatching and the young mites (which quickly become mature mites) feeding from the needles. The damage caused by this mite; bronzing, and needle loss, is not noticed until mid-summer though the damage will occur during May.



Too many people have the attitude 'see and spray'. They see the damage and they spray. But now is the time to begin treatments as this cool-season mite is hatching. Treating in the summer, when day temperatures are staying above 80°F, is not effective as the mite is in a dormant egg stage and not easily killed by treatments.

Egg hatch starts when silver maples are blooming, and the peak spruce spider mite activity will be between 200 and 370 GDD (May-early June). Spruce spider mites feed by inserting their piercing-sucking mouth parts into the needles and removing the cell contents. Now is the time to treat to avoid this damage during the next few weeks.

This is one pest that is best managed by a commercial applicator. They have the miticides that are targeted for this mite and cause little harm to predatory mites and insects that provide most of the control. There are two active ingredients commonly used by commercial turf and ornamental applicators. However, there are many others that are also effective.

Miticides containing Bifenazate as the active ingredient are probably the most often used by commercial applicators. This is a contact miticide effective against eggs to adults and provides about a month of residual action.

Miticides containing Abamectin (which is also an insecticide) are also used by many commercial applicators. It is derived from a naturally occurring soil microorganism and works as a contact miticide. It is not effective against eggs but will kill the immatures and adults. Miticides that contains Abamectin have translaminar properties meaning they penetrates the needle creating a reservoir of active ingredient.

Acephate is another insecticide used against mites, most often as a soil injection. Other insecticides such as Malathion may have mites listed on the label but have very limited effectiveness against them. Other insecticides, Carbaryl and Imidacloprid, can increase mite populations so should not be used.

Timely Topics

Emerald ash borer update

We are continuing to monitor insect development this spring. While there are a few larvae still in the J-shaped stage (which they entered last fall), many are in the prepupa stage. These insects have shrunken and now have a long, cylindrical shape. They will be entering their pupal stage soon. This stage will take about three weeks to complete. The adults emerge following the pupal stage.



We are still on target for emergence of the adults to begin in early June. May will be a good month to inject ash to protect them from emerald ash borer (in the counties where the insect has been confirmed, Lincoln and Minnehaha). The trees will be leafing out soon. The water moving up the stems to the new leaves will help pull up and distribute the insecticide throughout the tree. Also, any insecticide applied in May and June will kill the adults which must feed on leaves before laying eggs.

Emerald ash borer treatment workshop on May 3 in Sioux Falls

The City of Sioux Falls, Dakota ISA chapter, South Dakota Department of Agriculture and Natural Resources, and South Dakota Extension Service are sponsoring a workshop for applicators to learn about spread of EAB in eastern South Dakota, the developmental stage of the insect, and treatment options available to protect trees from becoming infested.

This is an opportunity for applicators to learn about and discuss the systems available for injecting ashes with demonstrations by Arborjet, ArborSystem, Rainbow, and Warne Chemical (Chem-jet). I will discuss EAB life cycle and identification of the insect and infested trees. Bryan Peterson, Urban Forestry Specialist for the City of Sioux Falls will be on hand to discuss tagging and reporting specifications for applicators.



The workshop will be at **Laurel Oak Park, 3401 East 49th Street, Sioux Falls on Tuesday, May 3. It will begin at 10:00 am by the Picnic Shelter and run for about two hours.** No registration is necessary, and it will be held “rain or shine.” This is a fantastic opportunity for those who already offer emerald ash borer treatments in the area to refine their skills as well as companies that are thinking about offering this service to learn more about it.

Pine wilt disease webinar available on YouTube

The pine wilt disease webinar held on April 13 is now on available for viewing. It can be accessed at the [Pine Wilt Disease Workshop](#) on the SDDANR public YouTube Channel.

E-samples

Cytospora canker on spruce

The pictures showed a declining spruce. The lower branches are beginning to shed all their needles, and some are already bare. These bare branches will often be covered with bluish white blisters of sap. If the blisters are carved away, a sunken area of wood will appear. These may show small black dots, the fruiting bodies to the fungal disease cytospora (*Leucostoma kunzei*).



The disease can be present in healthy branches and it's hard to find a Colorado spruce without some infection. The infected trees seem to appear fine until the lower branches begin to decline, either from shading or age (or both). It seems that once the spruce branches from one spruce to the next start touching in windbreak, the disease begins to develop. Hence the disease appears a

lot sooner in rows with 12-foot spacing than 16-foot spacing.

The simplest treatment is to prune out the dying, infected branches during dry weather. This will slow, but not eliminate, the spread of the disease. The best solution is to avoid planting Colorado spruce on droughty soils and with tight spacing.

Emerald ash borer – woodpecker drill holes

I am receiving many pictures of ash with extensive woodpecker damage. The trees show numerous woodpecker drill as the birds search for insects. One insect they particular like is the emerald ash borer. The tasty larvae (to a bird) are found just beneath the bark so easy to access. They are also found in high numbers making them easy picking.



But woodpeckers will also feed on other insect found just beneath the bark including our native banded and redheaded ash borers.

Still, extensive woodpecker damage is a classic symptom of a tree infested by emerald ash borer, so these are always worth investigating. Only about one in twenty of these trees is infested once we start sampling branches from them. While woodpeckers are good indicators of a possible infestation, they are not a guarantee that the tree is infested.

Pine wilt disease

The number of pictures of dead Scotch pines just keeps increasing. The pictures usually show a pine that quickly declined last year, sometimes not till fall. Now all that remains is a few tan, hanging needles. When the trees are cut, the owners notice the wood is not sappy and its extremely light. The cross-section of the trunks will show wedges of blue-stained wood. These are the classic symptoms to the nematode-induced disease called pine wilt.

Sawyer beetles carry the nematode from dying to healthy trees. The evidence that the beetles came calling are the egg niches carved into the bark, almost like someone punched a Phillip screwdriver into the bark. They also can release the nematodes as they nibble on the needles and there will be no evidence of this transfer.



These infected trees will also be attractive to several other insects. The trunks and branches may be riddled with small, almost pin-size, holes from these secondary borers. They were not the cause of the decline, merely taking advantage of a tree already dying of pine wilt.



Two important reminders. Any Austrian or Scotch pines that quickly died last year should be cut and the wood destroyed (burned, buried, or chipped) now. The sawyer beetles will be emerging from this infested material very soon. Also do not plant Austrian or Scotch pine. The disease is now found throughout the state.

Tent caterpillar egg mass

This was a “What is it?” question about the shiny, dark varnish-like lump that encircled the twig of a crabapple. This is the egg mass of the tent caterpillar. These masses were placed by the female moth last fall. An egg mass can contain more than one hundred eggs. These begin hatching at about 100 GDD so the caterpillars are already out in the southeastern part of the state.

These caterpillars are very small right now and their signature silky nest not quite formed. The highly visible nests will appear at about 200 GDD. Now is a easy time to control these insects. Simply prune off and crush the egg masses and avoid the need to spray the apples, cherries, and plums they inhabit as larvae.



One other important note: sometimes you can find old egg masses, ones that hatched last spring (2021). These egg masses will look gray and weathered with numerous tiny holes where the larvae emerged. The new egg masses will appear almost like molten glass around the twig with no holes from them.

Samples received/Site visits

Clay County, male flowers on arborvitae

This is a branch from the American arborvitae (*Thuja occidentalis*). The small “bumps” at the tips of the branches are the male (pollen) cones. These begin to form very early in the spring and the branch tips can be covered with them – almost appear as some strange fungal disease. If the cones are shaken, fine pollen dust will float out. The female cones are the oblong, woody cones that mature later in the year.



Turner County, Zimmerman pine moth

This was a belt of Scotch pines where many trees had deformed tops and broken branches. The broken branches were often still attached to the trunk but were just peeled away. The base of these branches were covered with soft, gooey globs of resin.

These are the symptoms and signs of a Zimmerman pine moth infestation. There seems to be more problems with this borer during the past two years along with pine wilt. The insect and disease both flourish in hot, dry weather and we have had an abundance of that during the past two summer – it’s not a good time to be a Scotch pine tree in South Dakota.



I was able to pull out the pupal skin to a moth. This formed last year, and the adults were flying in August. The eggs were laid and hatched last fall and the very small larvae just spend the winter hiding in a silky mat beneath some bark flakes. They are now emerging from their winter shelter (and probably wondering like us – what happened to spring) and will soon be boring into the wood. Now is the time to treat for this insect and treatments were discussed in the April 6, 2022, issue of the Pest Alert.