



# 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 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

The word is cold for much of the state. The growing degree days (GDD – base 50) in most of the state is behind last year by two to three weeks. Even the Black Hills is beginning to lose ground in GDD.

Last year at this time the crabapples were in bloom in much of the state. This year the buds have barely opened. Mother's Day may look a little bleak for blooms.



The 2022 GDD accumulation to-date for these South Dakota cities is:

City	2022
Aberdeen	40
Beresford	237
Chamberlain	243
Rapid City	202
Sioux Falls	169

## Soil temperatures are now acceptable for bare-root tree planting

Soil temperatures are above 45°F in all the state except the counties bordering North Dakota. The soil temperatures at 4-inches are now at 50°F in the southeastern quarter of the state. The soil temperature threshold for bare-root planting is between 45 to 50°F. We need the soils warm enough to promote root growth before the buds open and start demanding water. We are just about there in temperature, but what about moisture?

## Soil moisture levels are low – irrigation of new trees is a must this year!

My West River rain gauge is the Wall Drug billboard near the pond at exit 131 on I-90. Some years the water is almost touching the billboard. Most years at least the billboard posts are in the pond. This year the pond is gone. I have never seen it this dry.

The National Drought Mitigation Center uses more sophisticated means for determining drought. The Center's data shows that all but the northeastern part of the state is in drought with most counties in moderate to severe drought. Charles Mix and Gregory Counties are in extreme drought.

Unless the spring rains appear soon and extend into summer, irrigating newly planted seedlings will be necessary! See article in Timely Topics.

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## Treatments to Begin Now

Diplodia tip blight (*Diplodia pinea*) is one of the most common disfiguring diseases of 2- and 3-needled pines in South Dakota. It is a common disease on Austrian (*Pinus nigra*) and ponderosa (*P. ponderosa*) pines.



The most common means of managing the disease is with fungicides. The treatment are foliage applications with a fungicide containing Thiophanate-methyl, Propiconazole, or Chlorothalonil (and labeled for treatment of this disease). The first application goes on just before the bud sheaths have opened.

Timing is critical. Once the bud sheaths have opened and the candle begins to form, it is a little late to begin the first application and this is the one that provides most of the protection. A second application is made about two weeks later.

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## 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), more are now in the prepupa stage. The majority are in their pupal (resting) stage now.

The development is slow compared to last year. The pupa seems to have decided to nap a little longer this year. Just like people who do not want to get out of a warm bed on a chilly morning, emerald ash borer is content to stay in its warm chamber deeper within the tree, rather than start waking up. They have hit the snooze button.

Unless the temperatures begin to warm soon, we may see the beginning of the adult flight pushed back until later in June. But there is a month to go before emergence traditionally begins. We still have time for temperature to catch up.

### ***Fuzzballs littering driveways, sidewalks, and roads***

The tiny, brown fuzzy balls littering the walkways and roads are the staminate flowers of ash trees. Ash trees are usually dioecious, either all the flowers on a tree are staminate (male) or pistillate (female). Since most homeowners do not want to plant trees with seeds, all our ash cultivars are male trees.



This means all the ash lining our streets in communities (and about one in three trees along our streets is an ash) are dropping staminate flowers right now. This is a seasonal phenomenon. The spring rains will soon wash the fallen flowers away.

### ***Fires and cedars***



An unfortunate consequence of dry weather is fire. Grass fires have been a common occurrence this winter and spring. These are often cool, fast-moving fires that mature trees, with their thicker insulating bark, can survive. Younger trees with thinner bark may be killed by these fires.

Cedars (junipers) are extremely sensitive to fires regardless of age. While eastern redcedar and Rocky Mountain juniper are native to the state, and not invasive as some publications claim, they were limited to the woody draws prior to European settlement. They had protection from fire in these draws.

Prairie fires became less frequent once grasslands became pastures. This gave cedars the foothold they need to expand out of their natural habitat. And expand they did! They now called a weed by farmers and ranchers.

But there are also farmers and ranchers who appreciate these trees for their ability to survive our soils and climate. Cedars are a common windbreak tree in the state, providing shelter for crops, livestock, and homes.

Fires are deadly to cedars. The stringy bark offers little resistance to flames and heat. The foliage contains oils that ignite easily so the entire canopy will burst into flames.

Once the foliage burns away, there is not much chance of survival. Even if the wood beneath the bark is still white and alive, cedars cannot sprout new foliage from bare twigs. Oklahoma research has shown that even when most of the canopy has been scorched, the trees will die.

### ***Irrigation requirements bare-root seedlings***

In the perfect world we would have one inch of rain a week during the growing season – a soft rain that fell overnight. We are not going to see that in South Dakota so for bare-roots seedlings the best practice would be adding a quart of water per day for the first two weeks, then a quart three times a week for the next three months. Bests are hard to meet so what is acceptable if we do not receive adequate rains this summer (an inch a week)? Here may be the most practical compromise for this year.

Water immediately at planting, one quart of water per seedling. Then water once a week, one gallon of water per seedling, for the remainder of the growing season. If the air temperatures are above 86°F during the day for a week, change once a week to watering the seedlings two times a week with a half-gallon each watering. If it stays dry, and this irrigation schedule is not followed, do not be surprised if seedling mortality is high.

There is no substitute for water. Fertilizer at planting will not help and may be a detriment. There is research showing hydrogels can significantly improve survival and increase biomass so may be worth adding but these should be used in concert with irrigation, not as a replacement.

### ***Pine engraver beetle activity in the Black Hills***

The overwintering adults have been slow to emerge from their winter shelters. I have captured only a few adults in our traps. The Forest Service trapping has also yielded only a few beetles. I also noticed very few attacks on

newly fallen trees and branches during this past week. These fallen trees and branches are usually extremely attractive host material and should be covered with the boring dust of adults burrowing into mate and lay eggs for the spring generation. A week of warm weather (60° to 70°F) may get these beetles flying and searching for a home.

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## **E-samples**

### ***Alcoholic flux***

I receive a picture or two every spring of foam oozing out of the base of a tree. This is called alcoholic flux or white flux. It occurs when microorganisms ferment sap in cracks and other bark wounds. Alcoholic flux is acidic and colorless though can appear (as pictured) as a white froth. It often has a pleasant fermentative odor, almost fruity.



The bubbly foam usually persists for only a brief time; a week or two. It commonly occurs on stressed trees though the stress may be due to any number of agents including the base of the tree being struck by lawnmowers or grass-whips.

### ***Southwest disease on maple***

I received a picture of a maple that has a long crack running down the trunk of the tree. This is sunscald, sometime referred to as southwest disease as it appears on the southwest sides of young trees. The disorder is a result of the day to night temperature fluctuations during the winter. The sun warms the bark on the south (and southwest) side of the tree (as high as 60°F or more) but at night the temperatures quickly drop to the ambient air temperatures.

This rapid temperature change kills the phloem and cambial tissue. The dead tissue does not resume growth in the spring so as the rest of the trunk expands, this strip of bark cracks and splits. The disorder occurs on young trees as their bark is thin and most often on species noted for very thin bark such as lindens and maples. There is not much that can be done once the split appears other than carefully remove the torn bark with a sharp knife.



### **Hand County, Fletcher scale on arborvitae**

The dry winter was tough on many evergreens. We are seeing winter desiccation injury on arborvitae along with some other evergreen species. Most of this discoloration is appearing in the last few weeks. The only solution is to lightly shear out the dry, dead foliage and let the evergreen grow out around the dead.



A means to reduce the problem is to wrap the lower trunks of young trees with white plastic tree wrap to reduce the heat absorption during the winters. A slit drain tile that provides an air gap between the trunk and tile is even better at preventing the rapid temperature change.

## **Samples received/Site visits**

### **Custer County, Oystershell scale**

The small (1/8-inch) brown to gray bumps on the branches are the adult female oystershell scales (*Lepidosaphes ulmi*). This is one of the armored scales, so named for the waxy plate they form over the body. Armored scales suck fluid from their host through straw-like mouthparts but do not produce honeydew as they do not feed directly from the sap but from cell contents.

But winter injury is not the only stressor on these arborvitae. The stems and branches that are presenting with dry, brown foliage are also infested with fletcher scale (*Parthenolecanium fletcheri*). This scale is a soft scale, so the shell is part of the body (like a turtle) rather than a shield over it like an armored scale. Soft scales also feed from the sap. Feeding from the sap is like piercing a firehose so they ingest a large quantity of this sugary fluid. The excess they excrete, and this forms a sticky film on the affected foliage.



The insect is in the egg stage right now, hiding beneath their dead mom's shell. The eggs hatch in the spring at about 350 GDD, when lilacs are in bloom. The newly hatched crawlers move out to the new shoots and begin to feed losing their mobility in the process. The adults develop by late summer and the eggs are produced in the fall.

A treatment option in locations where canopy sprays are not possible – as this picnic site – is a lower trunk application or soil drench with an insecticide containing dinotefuran as an active ingredient and labelled for treatment of this scale (Safari and Transtect are two dinotefuran insecticides commonly available to commercial applicators)



The insect is a mature crawler right now so can be easily controlled with a spray of horticultural oil (application is made before the spring growth begins but after frosts occurs so a small window in May). The other option is a soil drench of an insecticide labelled for treating scales – see oystershell treatment in the preceding discussion.

### **Hughes County, Juniper broom rust**

These are Rocky Mountain junipers (*Juniperus scopulorum*) and a few redcedars (*J. virginiana*) that have large witches'-brooms – masses of stunted shoots – growing out of the canopies. These are the brooms caused by juniper broom rust (*Gymnosporangium nidus-avis*). The brooms often die after only a year or two so many of the brooms on these evergreens have a gray dead center.



The alternate host for this rust disease are serviceberries. The disease causes lesions to appear on the serviceberry foliage. The infected leaves will drop prematurely. The disease can also infect the twigs and cause some minor dieback.

The brooms can be pruned out of the infected junipers though this will leave some unsightly holes. But these will fill in as the juniper grows. The disease can be treated with a fungicide containing myclobutanil that is labeled for this use on junipers. The applications are made from early July to mid-August every 10 days.

### ***Kingsbury County, Not emerald ash borer***

This was a stop to look at old, declining ashes that were drawing the attention of woodpeckers. The trees showed woodpecker drill holes in the trunks along with extensive bark blinding from the woodpecker activity. The ground was littered with shredded bark.



Woodpecker drill hole and blinding are excellent indicators of emerald ash borer. But woodpeckers will also search for our native ash borers if these insects are unlucky enough to be just beneath the bark where they are accessible to the birds.



This was one of those instances where the tree was host to our native redheaded or banded ash borers (*Neoclytus acuminatus* and *N. carpea*). These insects infest old, dying ash and are not a threat to healthy trees. The exit holes created by these borers are a little larger than those carved by emerald ash borer. The holes are also round to oval rather than a crisp D-shape.