



# Tree Pest Alert



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## Plant development for the growing season

We are at about 2900 growing degree days (GDD base 50) in Sioux Falls. This is a little higher than last year at this time and far ahead of some years. It has also been dry and the combination of heat and dry are causing woody plants to say “enough” and they are beginning to shut down for the year.

The evergreens – arborvitaes, pines, and spruce – are beginning to shed their oldest foliage. This is an annual phenomenon but goes unnoticed many years. But if we have a sunny, dry fall, the older foliage will become a bright yellow before being shed.



This can appear alarming to the tree owner, and I am expecting lots of calls in the coming weeks about dying evergreens that are dropping its needles. If the discolored and shed needles are from the interior of the tree and the discoloration occurs from the top of the tree to the base, its normal seasonal needle drop. If the needles are at the tips, then that is a problem that needs to be investigated.

## Samples

John Ball, Professor, SDSU Extension Forestry Specialist & South Dakota Department of Agriculture and Natural Resources Forest Health Specialist

Email: [john.ball@sdstate.edu](mailto:john.ball@sdstate.edu)

Phone: 605-688-4737 (office), 605-695-2503 (cell)

Samples sent to: John Ball  
Agronomy, Horticulture and Plant Science Department Rm 314, Berg Agricultural Hall, Box 2207A  
South Dakota State University  
Brookings, SD 57007-0996

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: Bess Pallares, Carrie Moore, and Dawnee Lebeau

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## Treatments to Begin Now

Watering is still the treatment of choice for many of our trees and shrubs. While the rains have picked up recently in many parts of the state, we are still in a moderate to extreme drought except for the northeast.

Woody plants need to go dormant during the winter months. If they do not harden - reduce and remove water from cells - freezing temperatures can cause ice to form. This ice can cause the cell to rupture and die.

Temperate woody plants use daylength as the signal to begin the hardening process and this is accelerated by the typical fall weather of cold nights and warm days.

Drought can also accelerate this process but not in a good way.

Tree owners sometimes attempt to assist the process by withholding water to force hardening essentially trying to dry the tree out. But some of the hardening process requires plants to expend energy, energy they may not have if drought stressed. Watering during fall droughts is still beneficial and can reduce winter injury.

The frequency and amount of water can be gradually reduced during September. The (hopefully) cooler days will mean less demand for water but if the drought continues watering will still be necessary through this month.

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## Timely Topics

### ***Emerald ash borer update***

All the larvae collecting during the recent weekly sampling were 3<sup>rd</sup> instar. As mentioned in previous Pest Alerts, the 3<sup>rd</sup> instars along with the 4<sup>th</sup> instars that will be appearing soon, create the deep, wide, and long galleries that kill the tree.



### ***Ash trees can be pruned or removed in Sioux Falls beginning now***

The restriction on pruning and removing ash trees in Sioux Falls was lifted this week. Since the initial confirmation of emerald ash borer in 2018, Sioux Falls has banned the pruning and removal of ash trees (with exceptions given for storm-damaged trees and construction among others) between Memorial and Labor Day.

The restriction between these bookends to the summer flight period of the insect limits the movement of wood from which the beetles could emerge. Since the beetles are attracted to fresh pruning wounds, the restriction on pruning also keeps untreated trees from becoming “beetle-magnets” for the neighborhood.

The selection of Memorial Day for the start and Labor Day for the end has worked well for Sioux Falls and will serve other South Dakota communities once they harbor infested trees. We consistently see emergence start the first week of June with emergence peaking the third week of June and the last in mid-July. Since the beetle lives for three to six weeks, all are dead by Labor Day.

However, an infested ash cut after Labor Day is a Trojan horse and rather than releasing thirty Greeks into the city of Troy, can release hundreds of beetles into a neighborhood next year. Ash wood moved after Labor Day can still have larvae inside and these will emerge next summer, 2022.

Anyone cutting ash in Sioux Falls between now and next Memorial Day should have the wood taken by themselves or the tree company that pruned or removed their ash to the landfill where it will be processed. If the infested wood is given away and stacked for future firewood, it can result in a new infestation. Beware of ash wood from Sioux Falls as it may be bearing gifts!

### ***Emerald ash borer quarantine***

Logs of infested ash wood can harbor larvae. There is a quarantine that prevents the movement of wood out of Lincoln, Minnehaha, and Turner Counties at any time of year, not just summer. The restriction applies to any hardwood firewood, not just ash. The quarantine also applies to raw ash lumber and wood chips.

### ***Spotted lanternfly found in Kansas***

The spotted lanternfly (*Lycorma delicatula*) is an Asian insect that was first detected in Pennsylvania in 2014, spread to New Jersey and has now been found in Rhode Island, Indiana, and Ohio (and egg masses in Maine). The most unusual find occurred this past week in an insect collected and exhibited at the State Fair in Kansas! The details for this Kansas find are not yet known but will be covered in the next *Pest Alert*.

This insect is a potential threat to fruit crops – peaches and grapes – as well as ornamental trees. The feeding is a little unusual for a sucking insect, it injects a chemical that keeps the sap oozing from the puncture after feeding – like a mosquito bite that just keeps bleeding – but instead of blood streaking down, it’s a grey streak of sap. The sap loss can be enough to weaken or even kill a tree. The insect also produces a tremendous amount of honeydew and everything beneath an infested tree is covered with this sticky substance.

While the insect feeds on a wide range of plants, one key plant host for the completion of its life cycle is Tree-of-Heaven (*Ailanthus altissima*). It is the best place to look for this insect, especially ones near railroad yards and campgrounds.

Tree-of-Heaven is considered a weed tree in much of the country. It is also not hardy throughout much of the state, but it does well in southeastern South Dakota. Unfortunately, it has naturalized along the Missouri River from Vermillion to Pierre, so we have enough of these hosts to allow the insect to become established along this riparian corridor up to Pierre. This tree can be found in Mitchell, Sioux Falls, Parker, Yankton, and Vermillion so eventually spotted lanternfly can become established in these communities and begin infesting other tree species.



### **Hedgeapples as insect control**

Yellow, grapefruit size fruit is appearing in grocery stores throughout the region. These are hedgeapples, another name for Osage-orange (*Maclura pomifera*). This is a seasonal appearance in the stores, as with many fruits, but this is not one you should plan on eating!



The fruit is sold as a spider killer and it does work – hit a spider with the fruit you will kill it. But placing the fruit, either whole or split, in the basement to repel insects or spiders does not work.

The milky latex-like sap in a ripe hedgeapple can cause skin irritation so avoid contact – and do not eat it! So, what does eat the fruit (or at least the seeds)? Not much apparently. Deer and squirrels will occasionally feed on the fruit and disperse the seeds, but it is not a preferred food for anything alive today.

Alive today is the key phrase. The osage-orange is considered anachronistic (something out of place) because it has no known seed disperser – they died out about 10,000 years ago. The mammoths, ground sloths, and other large mammals that lumbered across the plains fed upon it but they are gone now. Maybe they did not like the taste either. Perhaps the fruit should be sold as mammoth killers!

## **E-samples**

### **Copper fungicide, caution with summer applications**

This tree was recently sprayed with a copper fungicide to manage suspected fireblight. This bacterial disease is a common problem with many crabapple cultivars and infections result in dead shoots and branches. Copper has protective activity against many bacterial and fungal diseases so copper fungicides have a place in fireblight management.



But the application is made before the buds expand in the spring, not in midsummer. Copper applied in the spring, just as the tree is breaking dormancy, provides a “copper blanket” over the branches and spurs to reduce new infections.

Copper applications made during midsummer are too late, the new infections are already in the tree where copper cannot reach. Also, copper can be phytotoxic to many trees, including crabapples, and can result in injury to the tree and the fruit.

### **Smooth patch disease on oak**

This is a disease that appears in native bur oak stands in eastern South Dakota and east and south to the US coasts. The disease results in sunken, smooth patches of bark which contrasts with the surrounding darker, deeply furrowed bark.



The disease is due to several fungi, mostly *Aleurodiscus*, that only colonizes and decompose the corky outer layer of bark. While the infected bark will eventually shed, the loss does not harm the tree.

### **Sulfur yellow fungus (*Chicken-of-the-woods*)**

While the sulfur yellow shelf fungus (aka Chicken-of-the-woods) was covered in last week's *Pest Alert*, this picture that came in from Marshall County was too good not to publish! This fungus is now appearing on dead and dying trees throughout the state.



The fungus appears along the trunk in overlapping shelves or layers. They are hard to miss due to their bright yellow color. The shelves are half-crescent shaped, corky, and form in thick layers.

This is an annual wood fungus. The fruiting bodies do not appear until late summer or fall and sometimes disappear quickly. The reason is they are tasty! The sulfur yellow fungus is known as the chicken-of-the-woods due to its texture and flavor. A reminder: never collect and consume fungi that you cannot identify and never use a single source – such as this publication – for that identification. Go out with an experienced mushroom hunter!

### **Woolly apple aphid**

The call was a concern about white fuzzy that was appearing along the lower branches of this tree. When they crushed the fuzz, it released a sticky blood-red mess. Yuck! These are the woolly apple aphids (*Eriosoma lanigerum*). Woolly aphids differ from other aphids. They still live in colonies but are covered with white, thread-like secretions that link the aphids together in long strands of cotton.



The colonies appear along the lower stems and trunks and around old pruning wounds and scars in summer and fall. The aphids suck the sap from the stem and this loss can weaken the tree. But the primary stress is when these aphids are feeding below the ground on the roots. This feeding activity can cause root mortality and decline.

Treatment is usually focused on managing the aerial phase of the insect as this is the stage most accessible. Insecticides containing carbaryl or Malathion, and labelled for this use, are effective and readily available. Treatments are initiated when the colonies are noticed on the stems. A horticultural oil is often added to help the insecticide penetrate the waxy coating on the aphids.

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## **Samples received/Site visits**

### **Brookings County, Decayed ash failure**

The strong storms that tracked across the state over the past few weeks have caused numerous tree failures. Many of these failures could have been anticipated. The trees often had extensive decay in the lower trunks and roots, so it does not take a lot of wind to cause the tree to tumble over.



While these types of failures have occurred as long as trees and storms have been on the plains, they now attract attention (if they are an ash) for fear that emerald ash borer caused the fall.

Trees killed by emerald ash borer also fall over, often soon after they die, as their roots are dead. The network of tunnels carved around the tree by the larvae severs the tubes that carry sugars produced by the leaves to the roots. As the roots starve, they begin to decline and eventually die. The roots no longer provide stability and the tree fails.

The failure of this ash was not due to borer but just root decay and old age.

### **Minnehaha County, Decay in a honeylocust**

This stop was a concern about the stability of the tree. The trunk divides into two leaders at about five feet. At the union of the leaders there is a sunken area of soft, rotted wood.

This is either a necrotic (*Nectria*) or thronectric (*Pleonectria*) canker. These fungal diseases often begin at branch unions -usually in a wound cause by exposure to winter cold. The cankers usually form a distinctive, sunken areas with large callus ridges on the margins. The tree attempts to grow over the canker and the canker continues to grow around the tree – whoever is stronger wins.



The common recommendation is to keep the honeylocust healthy and avoid wounding (improper pruning that leaves stubs, cutting into bark with a string trimmer). Another approach is to plant the hardiest honeylocusts, such as Northern Acclaim which was released from North Dakota. Since the disease can gain a foothold into a tree through winter injury, selecting hardy honeylocust cultivars can reduce the risk.

The canker is well established in this tree and since it is at a critical stress point – the union of two leaders – the best option may be to remove the tree.

### **Union County, Lecanium scale**

This call was about a freeman maple that was developing a very open canopy compared to past years. Once I examined the twigs, the reason for the sparse canopy was apparent. The twigs were covered with the small brown bumps that were the lecanium scale (*Parthenolecanium corni*).



The scales are brown and about 1/5-inch long. They feed by sucking sap from the twigs and if the population is high, several or more per twig, the loss of sap can cause leaf loss.

These scales will overwinter and next early summer the adults will lay eggs. Once the eggs hatch, the crawler stage will move out to the leaves and suck sap from the midvein of the foliage until early September. They crawl back to the twig then, begin to form a shell and resume feeding.