



Tree Pest Alert



July 12, 2023

Volume 21, Number 21

In This Issue

Plant Development.....1
Treatments to begin now.....2
Timely topic.....2
 Emerald ash borer update.....2
 Pine looper update.....2
E-samples.....2
 Chlorosis on maples and oaks.....2
 Forgetting to remove the tree wrap.....3
 Lady beetle eggs on tree trunk.....3
 Turpentine beetles in ponderosa pine.....3
 Zimmerman pine moth.....4
Samples received/site visits.....4
 Brookings County (Pine wilt disease appearing).....4
 Lincoln County (Lilac-ash borer).....4
 Meade County (Aphids and grasshopper on cedars).....5
 Perkin County (Ash leaf curl aphid).....5
 Stanley County (Bacterial blight on Amur maple).....5

Samples

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

Email: 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: Carrie Moore and Dawnee Lebeau

The South Dakota Department of Agriculture and South Dakota State University are recipients of Federal funds. In accordance with Federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability (Not all prohibited bases apply to all programs.) To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW Washington, DC 20250-9410, or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

This publication made possible through a grant from the USDA Forest Service.

Plant development for the growing season

Rain is still a common sight throughout West River. I can watch the squalls dance across the landscape as I drive across the region. You drive through pouring rain for 10 minutes, then dry for another 30 minutes then rain again. The rain has been a blessing for crops, but it has also brought mosquitoes. They are having a rare appearance in the Black Hills. If you want to experience clouds of these insects – at the intensity of northern Minnesota – visit Spearfish.

East River is catching a little more rain – and experiencing warm or at least average temperatures. This warmer weather is pushing plant development. We are still seeing woody plants bloom earlier than normal. Amur maackia (*Maackia amurensis*), one of our best summer-flowering trees, is in full bloom in Brookings. This is a week or two earlier than its typical display.



These are the current growing degree days (GDD-base 50) for communities across the state.

Aberdeen	1,350
Beresford	1,600
Chamberlain	1,540
Rapid City	1,120
Sioux Falls	1,560

The drought classification has changed since last week. All West River except for Gregory and Tripp counties are classified as “None” on the US Drought Monitor. The drought has also broken for the northeastern quarter of the state except for the counties bordering Minnesota.

The southeastern quarter of the state has a drought intensity classified as either “Abnormally Dry” to “Extreme.” The hardest hit area is Charles Mix which has been under drought conditions for more than a year.

Treatments to Begin Now

Water, water, water your trees and shrubs. Even if your area is not under drought, summer is still a stress to trees. But there is always a risk of overwatering, which is wasteful and can also be harmful to the trees – too much water is as bad as too little.

A straightforward way to check if your trees and shrubs need to be watered is the dipstick trick. The principle is the same as checking the oil in your car but with a screwdriver in the soil. Push a screwdriver about nine inches into the soil. If the shank is moist along its length when you pull it out – no need to water. If it is dry, water.

Timely Topics

Emerald ash borer update

The first adults to emerge back in late May have died by now (though the adults that emerged in June and July are still flying). While infested trees are filling up with larvae, they are all the first and second instars (molts) – the baby and toddler larvae. These do little harm to their host as they are too small to seriously damage the inner bark.



The tree-killer instars will be appearing in another few weeks. These become large enough to sever the inner bark – the sugar pathway between the leaves and the roots – and the outer sapwood that moves water. This damage results in thinning canopies and wilting leaves.

Pine looper update

We are still seeing eggs hatching in the same area of pine defoliation as last year. The eggs are laid in clusters along needles and twigs. The picture at the top of the right column was taken by Louis, the SDDANR intern, of larvae hatching from eggs this week.

The needles are becoming covered with these larvae. These small – less than 1/4-inch long – caterpillars feed singly along needles. The pine looper larvae are too small to devour entire needles. They are nibbling along the margin of the needles – like eating corn on the cob. It will be another two weeks before they reach the size that whole needles are devoured.

This is the time to treat the high-value trees – those two or three large pine trees next to the house - that were defoliated last year and are infested again this summer. The tree canopies must be sprayed with an insecticide that reaches the top and this requires a higher pressure sprayer than most homeowners own. This is a job for professionals and prices are about \$25 to \$35 per tree (depending on number treated).



Since these sprays will also kill the insects that eat the caterpillars – their natural enemies – only a few key trees per property should be treated. Spraying entire forest stands is not recommended.

E-samples

Chlorosis in maples and oaks

The pictures keep coming in of yellow leaves (called chlorosis) on maples and oaks. This is to be expected. Our alkaline soils contain enough available iron and manganese that most trees susceptible to chlorosis will leaf out with the foliage displaying their normal green.



A few weeks ago, once the supplies of available iron and manganese were exhausted, trees susceptible to chlorosis had their leaf blades turn yellow-green while the veins remained green. Now some of these trees have bright yellow leaves with gray or black spots within the yellow.

This severe chlorosis is appearing on tree maples (Freeman, silver and red), two birch (gray and river), and three oaks (eastern pin oak, northern red oak, and swamp white oaks) throughout the state. The maple leaves are deficient in iron and manganese, the river birch, and oaks only iron.

The "root" problem of chlorosis is the alkaline soils (soil pH greater than 7.3) locks up much of the manganese and iron so the tree cannot access it. These susceptible birch, maple, and oak species are not able to absorb sufficient iron or manganese to remain green in these soils.

The best solution is to avoid planting these trees on alkaline soils. The other option is adding chelated forms of iron or manganese to the soil or injecting these microelements into the trunks. These treatments are applied in the fall or spring.

Forgetting to remove the tree wrap

This picture was sent in by Julie of a young tree down near Yankton. The plastic tree wrap was removed and the spiral pattern is embedded into the trunk! The tree will survive this insult but there will be some temporary injury to the vascular system.



This is a good reminder to not to leave on the wrap more than a season or two after planting. Do not expect the flexible nature of the wrap to continue to expand as the trunk grows. If wraps are used for winter rabbit and deer protection be sure it is removed each spring.

Lady beetle eggs on tree trunk

Aaron, Aberdeen city forester, sent in this picture of bright yellow eggs on the trunk of an aspen tree. These are eggs of lady beetles (Coleoptera: Coccinellidae). The yellow eggs are elongated, pointed at one end, and about 1/16-inch long. They are laid in clusters on the bark or leaves of trees infested with their prey.



The most common prey this year are the aphids that are infesting almost every tree (except for those in the drought-stricken southeast). After hatching, the lady beetle larvae quickly crawl along the bark until they find a colony of aphids.

Turpentine beetles in ponderosa pine

These small beetles were found burrowing their way through pine pitch on a ponderosa pine tree. These are the red turpentine beetles (*Dendroctonus valens*). The adult beetles are reddish brown and about 1/4-inch long. They fly between June and September.



Red turpentine beetles are attracted to stressed pines or even fresh tree stumps. The pitch tubes created by the pine in response to the attacks are usually found along the lower six feet of the trunk. These are light pink to reddish brown. There is usually white granular material around the base of trees with these pitch tubes.

Management of turpentine beetles centers around maintaining tree health since the beetles go for the weak and damaged trees. Tree trunks can be sprayed with an insecticide containing carbaryl or permethrin as the active ingredient and labelled for control of this insect. The spray should be applied in late May before the attacks begin.

Zimmerman pine moth

A pine tree owner pulled this larva out of a glob of pitch on the trunk. This is the larva of the Zimmerman pine moth (*Dioryctria* spp). The larvae range from light pink to dark green and are found burrowing beneath pitch masses.



The pale yellow popcorn globs of pitch are usually found along the trunk where the branches are attached. The larvae tunnel through the zone where the branches are attached. This causes the weakened branches to break when stressed by snow or ice loading.

The larvae are already forming pupae within these pitch globs. The adult moths will be emerging at about 2,000 GDD. Treatments are applied on the trunks just before adult emergence. Treatments will be covered in the next issue of the *Tree Pest Alert*.

Samples received/Site visits

Brookings County, Pine wilt disease beginning to appear

New infections of pine wilt are beginning to appear. This is a Scotch pine (*Pinus sylvestris*) presenting with symptoms of pine wilt disease. This disease is caused by a small nematode, the pine wood nematode (*Bursaphelenchus xylophilus*) and its mite and microflora associates. The nematode is carried from an infested tree to a healthy tree by sawyer beetles (*Monochamus* spp).

Infected pines quickly have their needles turn grayish green to tan, usually beginning at the top of the canopy and progressing downward. The needles become brown or straw colored and hang from the twigs. These dry needles snap easily. The associated twig is also dry and brittle. Trees presenting symptoms during mid-summer are dead by fall.



The disease is found throughout the state. It is a lethal threat to Scotch pine as well as two other introduced pines, Austrian pine (*P. nigra*) and mugo pine (*P. mugo*). It is not a threat to ponderosa pine.

Lincoln County, Lilac-ash borer

I have been receiving calls and pictures of lilac-ash borer (*Podosesia syringae*) larvae burrowing in lilac and ash. This was a visit to a young ash tree that was infested with this borer.



This borer is not related to the emerald ash borer. The lilac-ash borer is a native insect and lilac and ash have always been the hosts. The adults, which resemble wasps, attack stressed plants, young ash and lilacs affected by drought.

The borer rarely kills their host but the tunneling can weaken trunks resulting in breakage. Treatments are applied to adults which are flying in the spring. Unlike the emerald ash borer, there are no treatments effective against the larval stage for the lilac-ash borer.

Meade County – Cedars (Junipers) with aphids and grasshopper foliage injury

The wet West River weather has resulted in clouds of mosquitoes and a few tree pests we do not see every year. This past week I visited some cedar (Juniper) belts that were discolored along with the NRCS. This was not from a fungal disease but a couple of insects.

Aphids (*Cinaria* spp) were clustered along cedar shoots with discolored tips. These are large pear-shaped aphids, about 1/5-inch long that are gray-to-brown. These aphids feed in colonies, sucking sap from the twig. This results in yellowing shoot tips and occasional tip dieback.



Aphids are susceptible to most insecticide treatments including those with abamectin, acephate, azadirachtin, and carbaryl as active ingredients and labeled for control of aphids. They can be applied on the foliage. Some can be poured around the base of the plants. These are absorbed through the roots into the sap stream.

Where you find aphid colonies you can usually find ants. It is a symbiotic relationship where the ants herd the aphids to new shoots and protect them from their natural enemies. In return the ants “milk” the aphids for their sweet honeydew.

There was also a heavy infestation of grasshoppers (*Melanoplus* spp) on many of these cedars. These are nibbling on shoots which results in discoloration and tip dieback. They can be found on the same plants (and windbreaks) as the aphids.

Perkin County, Ash leaf curl aphids

The tightly curled and distorted foliage on ash shoot tips is due to feeding by the ash leaf curl aphid (*Prociphilius fraxinifolii*). If a curled leaflet was opened earlier this summer, there would have been small aphids with a waxy-cottony covering. The aphids finish their feeding when the new shoot growth stops. They are now taking a summer vacation in the debris beneath ash trees. No need for treatment as they will not uncurl the leaves.



Stanley County, Bacterial blight on Amur maple

This stop was to see an Amur maple (*Acer tataricum* subsp *ginnala*) with distorted shoot tips. While distorted shoot tips are often associated with herbicide drift, this may be due to a bacterium, though testing will be needed to confirm this diagnosis.



Bacterial blight on Amur maple is caused by the same bacterium - *Pseudomonas syringae* pv *syringae* - that causes blight in lilacs. Common symptoms of the disease on Amur maple are blackened and curled shoot tips and leaves with black spots that range from pinpoint to about 1/4-inch in diameter.

Treatment for bacterial blight is pruning out infected shoots during dry weather or winter. A spray with a fixed copper can be applied prior to bud break in the spring. These treatments can slow the spread of infection in a tree.