

Pest Update (January 31- February 7, 2018)

Vol. 16, no. 3

John Ball, Forest Health Specialist SD Department of Agriculture,
Extension Forester SD Cooperative Extension

Email: john.ball@sdstate.edu

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

Samples sent to: John Ball

Agronomy, Horticulture and Plant Science Department

rm 230, 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 dying plants or insects from other states. If you live outside of South Dakota and have a question, instead please send a digital picture of the pest or problem.

Available on the net at:

<http://sdda.sd.gov/conservation-forestry/forest-health/tree-pest-alerts/>

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 and the label is the final authority for a product's use on a particular 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.

Plant Development.....	1
Timely topic	
Common ash pests.....	2
A thorny honeylocust.....	4
E-samples	
Zimmerman pine borer.....	5
Samples received	
Brown County (possible pine wilt disease).....	5

Plant Development

The winter weather has returned to the sub-zero temperatures we all dislike as we walk out in the morning. Fortunately, January is when trees are able to tolerate their coldest temperatures so the -20s are not a concern to them. Most of our "winter" cold injury actually occurs during unusual temperature fluctuations in fall and spring when trees are either going into or coming out of dormancy and are sensitive to cold temperatures.

Timely Topics

Common ash borers and bark beetles

Green ash is one of the most common trees in South Dakota and considering the number of ash tree in windbreaks, along urban streets, and in yards already, it is a surprise anyone would think we need more. In addition to the numerous pest problems we already have with this species, the anticipated arrival of the emerald ash borer should make us a little more caution about planting this tree. Surprisingly, there are still some nurseries in the state that are planting and promoting it.

We also need to be a more vigilant in examining dying ash. Emerald ash borer is presently as close as Omaha/Council Bluff to the south, Welcome, Minnesota to the east and (oddly enough) Winnipeg to the north. All these infestations were detected in trees or panel traps before the borer became well-established in the communities, perhaps only present for a few years. This is in contrast with the Michigan experience where the insect went undetected for a decade or more. Recent studies indicate that year 8 is the tipping point, if not detected by this point, the borer population and tree mortality quickly expands. So the quicker it is identified and managed, the slower the spread.

Unfortunately, an emerald ash borer infested tree is not easy to detect out here on the Northern Plains as it was out East. Many of our ash already have extensive dieback just due to the harsh growing condition. There are lots of other insects that like to feed on ash. It is important to be able to determine whether what you see on a dying ash is one of our native pests or the emerald ash borer.



The most common ash borer in South Dakota is our native **clearwing ash borer** (*Podosesia syringae*). This insect makes an exit hole about the size of a pencil (1/4-inch) and usually the ground beneath the holes is covered with powdery sawdust. The galleries are often found deep within the wood, rather than just beneath the bark, and are usually clean of material.



Carpenterworm (*Prionoxystus robiniae*) is another common boring insect of ash trees. This insect creates an exit hole about 1/3-inch in diameter, slightly larger than a pencil. There will often be sawdust around the hole and on the



ground beneath the tree. Sap may also be oozing from the holes and sometimes the empty pupal case left by the emerging adult insect can be found attached to the bark surrounding the exit holes. The galleries may be 5/8-inch wide, often empty of sawdust, and extend deep into the tree. Tree infested by carpenterworms often have their branches weakened by the extensive tunneling and affected branches often break off in high winds.



It is possible to find both these insects tunneling in the same tree as the picture on the left shows. The clearwing ash borer larva, the one to the left, is about 1-inch long (at maturity) and is creamy white with a shiny brown head. The carpenterworm larvae, the one on the right, can become almost 3 inches long at maturity and is pinkish-white with a dark head. The clearwing ash borer has a one-year life cycle so you will typically only find the larvae in a tree from June

to the following May. Carpenterworm may have a three-year life cycle so it is common to find larvae of various sizes at almost any month of the year.



Other common borers of dead or dying ash trees are the **redheaded ash borer** (*Neoclytus acuminatus*) and the **banded ash borer** (*N. carprea*). These insects create an oval exit hole, almost “fuzzy” D-shaped in appearance and are about 1/4-inch diameter. The galleries beneath the bark are winding, often follow the grain of the wood and are packed with sawdust-like material. They are similar to those created by the emerald ash borer. The primary

difference will be that these galleries may extend deeper into the wood than those created by the emerald ash borer. If you cut into the wood beneath the bark and galleries are still present, the most likely cause is the redheaded or banded ash borer, not the emerald ash borer.



Another group of insects that can be found boring into dying ash are the **ash bark beetles** (*Hylesinus*). There are at least two species in South Dakota, the eastern ash bark beetle (*H. aculeatus*) and the western ash bark beetle (*H. californicus*). These insects create a round exit hole 1/16-inch diameter, about the size of a BB, and often these holes will encircle a shoot. The galleries beneath the bark consist of a main

tunnel with numerous smaller tunnels run off from it and following the wood grain.



The **emerald ash borer** creates a crisp D-shape hole (1/8-inch) as it exits the tree. The larvae as they tunnel form galleries just beneath the bark. These tunnels form a serpentine pattern and are filled with a sawdust-like material. There is no powdery sawdust on the trunk adjacent to the holes or on the ground beneath them. This is just a brief description of the common borers and bark

beetles found in ash trees. If you are not sure if you are looking at symptoms and signs of the emerald ash borer or one of our native insects, please contact me or any of the Department of Agriculture foresters to have the pest identified. Better to know for sure it isn't emerald ash borer then possibly miss an infestation.



A thorny problem! I saw this tree down in a woody area of Overland Park, Kansas last week. This is the common honeylocust (*Gleditsia triacanthos*), a tree native to much of the East and even into southeastern South Dakota. The common honeylocust was not a widely used ornamental until the 1940s and 50s. The reason for this hesitation was the long – 2 to 3 inches – branched thorns that protrude from the lower trunk and branches. The thorns are believed to be a defense against large herbivores that roams the continent thousands of years

ago. While they have died off, the honeylocust apparently did not get the message and continued to produce large thorns. As least most of them anyway as some are thornless.



Most of the trees we planted in our communities and windbreaks are from the subspecies, the thornless honeylocust (*G. triacanthos* var. *inermis*). Sometimes considered a forma instead (*G. triacanthos* f. *inermis*). These are plants that have a characteristic differing from the species and comes true from seed, the offspring of thornless honeylocusts are also usually thornless. Thank goodness for that, I would not want to work around a honeylocust with thorns!

E-samples



While we focused a lot of attention on mountain pine beetle and pine engraver beetles in the Black Hills until recently, the most common pine borer throughout the state is the **Zimmerman pine moth** (*Dioryctria*). This is not a single insect species, but three closely related moths with slightly different life cycles. The tree injury is the same, however, with infested pines often with distorted trunks and broken

branches. Large pitch masses usually occur in association with branch whorls. A common control procedure is to treat infested tree with a trunk spray of an insecticide labeled for Zimmerman pine moth and containing permethrin as the active ingredient. The application should be made in early May and with sufficient hose pressure to thoroughly wet the trunk, particularly at the whorls.

Samples received

Brown County

Does this tree have pine wilt?



Pine wilt disease is caused by the nematode *Bursaphelenchus xylophilus*, which colonizes the sapwood of living pines though it can also survive in dead trees and even logs for a short time. The nematodes are introduced into a tree by longhorned beetles. The beetles can carry thousands of nematodes from an infected tree or log as the beetles emerge. The microscopic nematodes then leave their beetle host when it is feeding on another pine tree. Once in this tree, the nematode population quickly increases as they feed in the resin ducts and xylem of the tree. The nematodes, and their associated bacteria, also introduce a toxin which hasten the death of these cells.

The infested trees foliage yellows by mid to late summer and then wilts but remains attached to the shoots. The disease causes symptoms only in exotic pines so we see it mostly on Scotch pine (*Pinus sylvestris*) and Austrian pine (*P. nigra*) though even mugo pine (*P. mugo*) can be killed.

While a rapidly wilting Scotch or Austrian pine is the first clue that the tree may have the nematode, another symptom is the presence of blue stain in the wood. The blue staining is from a fungus and it is also carried to the tree by the longhorned beetles. The blue stain fungus is also a food source for the pine wood



nematode and usually when you find the fungus in a rapidly wilting pine, you find the nematode. But not always. The pictures of these blue stained “cookies”, trunk cross-section take at a lower whorl of branches were quickly followed up with them arriving at our lab. When we opened the box and lifted the cookies, we thought they were not infected. Usually trees infected by the nematode have such dry wood that a piece has almost no weight. These cookies were still moist and sappy. As expected, we were not able to extract the nematodes from the wood so the tree did not die of pine wilt.

While we have found pine wilt as far north as Highway 212, so far we have not be able to find the nematode in pine trees farther north. However, we did not find pine wilt as far north as Watertown until a few years ago and it was only found as far north as the Nebraska border twenty years ago so perhaps it is a matter of time before we find it in Aberdeen.

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.