



Tree Pest Alert



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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

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Plant development for the growing season

The freezing weather continues, not too surprising considering we are midwinter. We have yet to accumulate growing degree days (GDD-base 50) as 50°F temperatures have not occurred in January in most of the state. The GDD for Aberdeen, Beresford, Chamberlain and Sioux Falls remains at zero. The other community we track during the year, Rapid City, did see the thermometer spike above 50°F so they are at 7.5 GDD.

Treatments to Begin Now

Just one. During the next warm, sunny day, remember to remove the Christmas lights from living trees. Every year I am called to a dying tree, usually a spruce, that was killed by old forgotten light cords. People forget to remove them or figure "just leave them on for the next year." After a few years, the upper trunk is constricted by the cords and the top of the tree dies.



Timely Topics

Emerald ash borer update

We do not continue monitoring development during the winter since not much occurs. The beetles are in the J-shaped larval form within the sapwood. They are protected from extreme cold deeper in the wood and even -25°F is not enough to kill all the larvae.

Last December in Sioux Falls, we saw -18°F but only -4°F so far in January. Unless we get some very cold weather, -25 to -30°F, soon this winter will be too mild for significant overwintering larval mortality.

Emerald ash borer confirmed in Sioux City, Iowa and Dakota Dunes, South Dakota: the dots are beginning to connect

During the past week emerald ash borer was confirmed in two adjacent communities, one in Iowa and the other in South Dakota. Some of the ash trees in the forest adjacent to Dakota Dunes had the characteristic blanding and woodpecker pecks from their search for larvae. The J-shaped emerald ash borers were also found in their overwinter chambers.



Since the insect was found in Sioux Falls, S.D. and Omaha, Neb. more than four years ago, the dots between the two cities have been connecting. The river and highway systems between the two communities provide the perfect conduit for spread of the insect.

Ash is one of the most common riparian tree species on the Great Plains. It lines the Missouri and Big Sioux Rivers and watersheds. As these trees become infested in the forests lining the rivers, the insects continue to spread along waterways.

Highway systems also aid the insect's spread. The insect moves as larvae in ash firewood and green logs. It can also move as adults that hitchhike on vehicles. This was noted back in the 2000s as the spread of the insect through communities in the Midwest followed highway corridors.

What is being done in the Dakota Dunes – an EAB success story

The community of Dakota Dunes has a very proactive emerald ash borer program. A street tree inventory was completed two years ago by South Dakota Cooperative Extension Master Gardeners and SDDANR foresters. The inventory found that about a third of their trees were ash – a common percentage in many eastern South Dakota communities.

The community began a removal and replanting program with help from students from SDSU and SDDANR foresters. Neighborhoods within the community were targeted for ash removal over a five-year period. The trees are being removed along specific sections of

streets so no one neighborhood is suddenly left devoid of their street trees. The areas where the trees are removed have new trees planted the same year, but this time with a diversity of tree genera and species. The diversity is at a neighborhood level so a section along a street may have the same species – a means of providing uniformity – but different streets and sections along long streets have different genera planted.



The community will continue with their program of removal and replanting, following the plan's schedule. The ash trees within the community are not presenting with the most common symptoms of an infestation, woodpecker foraging (blanding and pecks). While some of these trees may have become infested recently - woodpecker foraging often does not appear until a year or two after a tree is infested- the infestation is low enough there is no need to accelerate their schedule.

Not every ash is being removed. There are numerous ash trees in side and back yards around homes. While some of these trees will be removed as they become infested, other trees will be treated by insecticidal trunk injections. We are recommending tree owners with mature, attractive and healthy ash providing shade and other benefits contact commercial applicators to schedule treatment. The trees should be injected this spring, preferable with the injection performed in May or early June.

Managing EAB in riparian forests

The South Dakota infestation was found in the forested area adjacent to Dakota Dunes. While a more detailed survey is planned this winter, the infested trees are in groups scattered in the forest and along the two rivers. The forest is composed of mature cottonwoods, hackberries, boxelders and ash along with scattered American elms, white mulberry and silver maple among others.

Removing infested trees from a community can slow the spread of the beetle. Removing about two-thirds of the infested trees can reduce the beetle population by half which can reduce the rate of ash mortality. But it is impossible to remove all the trees in a forest as they

become infested, some will be missed so the infestation will still spread.



The best management for the forested area may be to remove infested trees along paths and create trap trees within the forest. The objective of removing infested trees along paths is to reduce the risk to walkers being struck by a falling tree. Infested ash become very brittle once they die and fall in an unpredictable manner. Removing these trees while they are infested also reduces the adult beetle population the following spring.

The objective of the girdled trap trees is to keep the beetles in the forest a little longer, rather than spreading out into the nearby community. Girdling ash trees increased their attractiveness to egg-laying females. These trap trees can serve as “sinks” drawing in the insects to lay eggs. This can reduce population growth and spread of emerald ash borer if the infested trap trees are removed and destroyed before the adults emerge in late May.

Clusters of two to four trap trees are girdled in late May by removing a 6 to 8 inch wide band of bark and phloem completely around the trunks at about 4 feet above the ground. These clusters should be placed in scattered, sunny locations near the center of the forest. The clusters must also be accessible so the trees can be removed before May. Once the trap trees have attracted beetles, eggs laid and the larvae are inside, the girdled trees must be removed before adults emerge.

There is always the thought that the infestation can be eliminated by cutting all the ash in a forest. This was the bases of the early Michigan recommendation of removal all ash within a half-mile radius of an infested tree. It did not work as well as hoped nor will it here.

First it is impossible to removal all the ash in forested areas, Second, the beetle will continue to move along the river regardless of any aggressive removal operation in the forest. And third, there is the possibility that a large scale removal program may result in the beetles emerging from the missed trees moving quicker into the surrounding communities. Targeted removals and trap trees is the best management for the riparian forest.

Herbicide carryover and windbreak planting

Questions I really appreciate are ones about herbicide carry-over. I prefer being asked when seedling trees can be planted following a specific herbicide application rather than looking at dead seedlings in the field because no one asked about carryover.

I was recently asked about two herbicides - Authority and Flexstar - which were applied in a field in 2022. The question was when tree seedlings be planted in this same field.

The active ingredient in Authority is sulfentrazone, a cell membrane disrupter. Sulfentrazone is persistent and can last in the soil for two years, possibly longer during drought. Flexstar, active ingredient sodium salt of fomesafen, is also a cell membrane disrupter. It can persist for at least a year or two. These two products have similar carryover regardless of whether hardwoods or conifers are planted.

This means that the 2024 is the earliest that seedling trees can be planted in the field and avoid carryover injury.

E-samples

Gummosis on chokecherry

The questions was whether these bubbles of a gum-like substance were due to borers burrowing into the chokecherry. The exudation of this gummy, amber-colored substance is called gummosis. While it can be associated with borers, the causes are likely to be pathogens.



Bacterial canker (*Pseudomonas syringae* pv *syringae*) which form beneath the bark often presents with gummosis (and spots or holes in the leaves). Cytospora canker (*Cytospora*) which results in sunken cankers along the stem of the host can also present with gummosis on chokecherry trees. These are both weak pathogens that cause decline in trees already stressed by a predisposing factor, frequently drought.

The best management is watering if the drought continues into 2023. If the chokecherry shows decline and dieback this coming year, removal is the best option.

Scotch pines turning yellow-green

Scotch pines are turning color throughout the state and while this may appear alarming – it's normal and not a symptom of pine wilt. Scotch pine foliage turns a yellowish green during the winter, but they will green up as the warm weather returns in the spring. Christmas tree growers avoid this problem by spraying green dye on their Scotch pines at harvest, a little impractical for homeowners and their 40-foot-tall trees!



The yellowish winter foliage appears to be under genetic control. A study done in Nebraska back in the 1970s (Read, 1971. USDA Forest Service Research Paper RM-78) found that the seed sources from Scandinavia and Siberia consistently had their foliage turn yellow during the winter. The foliage returned to the normal bluish green with the return of warm weather in April.

It seems that the more cold tolerant the Scotch pine, the worse winter needle color!

Winter desiccation injury on spruce

I am beginning to receive pictures of rusty-appearing foliage on young Colorado spruce. The coloration is not related to a disease but a disorder. The reddish-brown foliage and needle loss is winter desiccation injury. Even during the cold winter, evergreens are losing water from their foliage and buds during windy, sunny days when the air temperatures are in the upper 20s°F. This water cannot be replaced as the stem and soil are frozen, so the foliage begins to dry and brown.



The discoloration often does not appear until spring as the trees begin to come out of dormancy, but I am already seeing it on spruce. The hot, dry summer and dry fall is contributing to this discoloration as trees entered the fall and winter slightly dehydrated. The best recommendation for now is just to sit tight. The trees may have their needles return to green once the weather warms and spring rains begin.

Samples received/Site visits

Custer County, Striped pine scale in ponderosa pine

The sample was covered with striped pine scale (*Toumeyella pini*), a close (and western) relative of the pine tortoise scale (*T. parvicornis*) we see at the eastern end of the state. These are soft scales that feed by sucking the sap from the pine shoots.



High populations along a shoot can stunt the development of the new growth and cause some distortion in the shoot tips. The other symptom of high scale populations is the presence of honeydew. This is a substance excreted by the scales as they feed and black sooty mold will colonize this sweet substrate. The shoots submitted were also covered with the mold.

Insecticides containing imidacloprid or dinotefuran as the active ingredient and labeled for this use can be applied

as either a soil or trunk injection in early June. Acephate or malathion may be applied as a foliage/shoot spray in late June when mockorange are in bloom and repeated 10 days later to kills the crawlers. Foliage sprays are less desirable as the application can also kill the natural enemies of the scale as well as other non-target insects.

Gregory County, What are these seed pods?

This is a catalpa (*Catalpa speciosa*) pod. The tree is known (or hated) for these long, cylindrical capsules, which we call pods, that hang from the tree all winter before falling and littering the ground. This tree also has large white flowers in early summer and large “elephant ear” shaped leaves, both which can litter the ground in the summer and fall.



The tree is native to scattered locations from Arkansas to Illinois and is commonly planted in the southern half of our state. It grows tallest in the southeastern South Dakota, south of I-90 and east of Hwy 281, where the humid climate is more favorable for its growth.

While the capsules are an annoyance to some, they also provide a cheap means of propagating this tree. You can start a tree now in the house by harvesting some of them. Bring the capsules in the house, break them open by twisting, removing the wafer-like seeds. Place three of these seeds in a 16 oz coffee cup that is fill with potting soil and then add a thin layer of soil over the seeds, about ¼ inch at the most.



Place the cup in a warm room with some sunlight and in about three weeks or so at least one of the seeds should begin germination. I have grown catalpa from seed to a height of 15 feet or more (and flowering) in five years.