Pest Update (October 11-18, 2017)

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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 for the growing season

Frost are common in many areas of the state and the Black Hills have even experienced some light snow falls. Still the weather has been remarkably warm

and dry which is still creating some exceptional fall color. However, it is fading fast so enjoy it while you can this week.

Emerald ash borer - Update

This summer's confirmation of emerald ash borer in Buena Vista County in Iowa, a mere 80 miles from South Dakota, has heightening concern about its eventual presence in South Dakota. The day is certainly getting closer. Confirmed infestations are found in the Omaha, Nebraska and Minneapolis-St. Paul Minnesota metro areas and now in about half the counties of Iowa. The most ominous finding with the Alta, Iowa discovery is that it was about 100 miles from the closest known population in Iowa meaning someone moved infested wood there.

The *Update* will provide weekly information on the location of emerald ash borer confirmed in South Dakota or a bordering county of an adjacent state. ***At this time no emerald ash borer infested trees have been identified in the state or an adjacent county of a bordering state.*** The nearest infestations are highlighted in red; the Twin Cities of Minnesota; Buena Vista County and the counties in central Iowa and the Omaha-Council Bluff area of Nebraska and Iowa.

There have been no new infestations confirmed near the South Dakota border. The Omaha region, Alta, Iowa and Welcome, Minnesota are still the closest infestation. At this time of year new discoveries are rare so it appears South Dakota has dodged the EAB bullet one more year, however, we are unlikely to have our string of luck hold much longer and I anticipate finding the insect in the state within a year or two.

Timely Topics

There have been lots of calls, emails, and samples of pines losing needles in the last couple of weeks. This is the normal shedding of the older needles that occurs every year at about this time. Most pines shed their three-year old needles in September and early October. The needles fall over an extended time period during autumn and this event often goes unnoticed by the tree owner. However, the dry summer appears to have caused the pines to drop their needles very quickly

this year and it is common to see mature ponderosa pines will a thick layer of fallen needles beneath them! Regardless this is not a cause for concern or alarm. If you receive a call about a pine losing its needles, ask the caller if the needles are falling from the branch tips or the interior. If it is the interior, it is just the normal shedding and not a cause for concern.

I am also receiving numerous samples and pictures of spruce undergoing the normal fall needle shedding. This presents as the older needles turning reddish-brown and shedding with the last 5 to 7 year needles remaining. This is also normal. However I am also getting pictures with only the current needles remaining and this is most likely due to the heat/drought stress from this summer. The most common question asked when the sample comes in is "Should I have been watering?" Yes, and now is still a great time to water so better late than not at all.

E-samples

Armillaria mushrooms. This picture was send in of mushrooms coming up around the stump of a tree cut down last spring in Minnesota. This is armillaria, also known as the honey mushroom. The fungus is found on and in the wood of trees and causes a white, pulpy rot. The decaying wood is often laced with stringy, black rhizomorphs hence the other name, shoe string root rot. The fruiting structures, the mushrooms, appear in large clusters in autumn usually following some rains. While a few references say these are edible, do not trust them! There have been some major changes of what is, and isn't, an armillaria fungus and some have been linked to poisonings. The term honey is not in reference to the taste, but the color. One last tidbit, the gills of these mushrooms are bioluminescent – they glow in the dark. However unlike the mushrooms in Avatar, the glow is so faint you have to put your eye right up to them on a very dark night.

Asian pear. These are common pears in windbreaks across the state, most commonly the Harbin pear (*Pyrus ussuriensis*) but we have a few Chinese pear (*P. pyrifolia*). Many Asian pears are round, more in appearance to an apple than a pear, and the textures is also more apple-like – crunchy, rather than creamy. The favor is not always the best. They tend to have a lot of grit cells so taste like a pear that has been rolling on a beach too long.

Frost damage on spruce. Spruce are prone to opening their buds a little early once we start experiencing some warm spring days. Unfortunately this leaves their tender new growth vulnerable to any spring frost. This past spring I received a number of call from West River about “herbicide” injury that was actually frost injury. Both types of injury will result in drooping shoot tips but with frost we generally do not see any individual needle banding as we do with many herbicides. Instead all the needles on the affected shoot are discolored. More injury on more open growing trees than those that are touching one another. Unfortunately there is nothing that can be done to correct this afterwards other than remove the dead shoots.

We are also seeing some gall adelgid injury that looks similar to frost or herbicide. See the Lawrence County sample discussion under Samples Received in this issue.

Elytroderma needle cast occurs in western South Dakota but I only occasionally get samples as it is often misidentified as Dothistroma needle blight or even Diplodia tip blight. The foliage symptoms have some similarities to these diseases, but generally the older needles on infected trees will turn red or brown and fall prematurely and only the most current needles will remain green. Obviously this symptom pattern can also occur with abiotic stressors. However, the formation of witches ’ brooms on infected trees, which occurs on trees that have been infected for years, is a good clue that it is a elytrodema infection. I received this picture of a witches’ broom that is fairly characteristic of the disease.

Samples received/site visits

Lawrence County **Gall adelgids on spruce**

The galls associated with the **eastern spruce gall adelgids** (*Adelges abietis*) are not as frequently seen in South Dakota as I remember from Michigan, but I still get an occasional sample or picture. However, last week I visited several groupings of white spruce that were covered with the galls on the lower branches of white spruces.

The galls, often described as pineapple-like, are formed by the feeding by the nymphal adelgids. Adelgids are sucking insects that look like aphids but lacking cornicles so honeydew is not produced by these insects. The nymphs feeding causes the gall to form around them and here they remain until late summer where they become winged adults. The females lay eggs on the same tree or an adjacent one as she is a very poor flier so stays close to home.

The eastern spruce gall adelgid is found on Norway and white (Black Hills) spruce in our state. The insect is widespread in the eastern United States to Minnesota with localized populations found in Montana, Wyoming and South Dakota. A dormant oil can be applied in the fall to kill the adult gall adelgids, but there is usually no need to treat as the damage is minor. However with heavy infestations as are occurring here, they can cause significant twig dieback and occasionally trees can die.

What is interesting is the population is so high that there are twigs that do not have the pineapple shaped galls, but instead the terminal needles are slight twisted and the tips shriveled and dieback. This almost appears to be frost or herbicide injury is an adelgid attack that was not successful. You will often see these curled shoot tips on trees that also have numerous galls.

Pennington County

Declining ponderosa pine

This was dothistroma needle blight (*Dothistroma septosporum*) an increasingly common disease of Austrian and ponderosa pines across the state. The most common symptoms are reddish brown spots scattered on green needles. The spots develop a lighter band at the margins and eventually the needle turns almost complete brown and is shed. The disease is usually more often seen in the older needles near the center of the tree than those towards the tips where they are exposed to drying sunlight. The disease can be confused with many other abiotic and abiotic agents so always best to send in a sample. The disease is managed (but not eliminated) with applications of fungicides made in the spring and early summer.

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