Pest Update (September 19, 2018)

Vol. 16, no. 32

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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 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

Fall will start this weekend and even if you forgot to look at the calendar, stepping outside should tell you that the seasons are changing. The weather is changing from unseasonably hot – the 90s – to unseasonably cold – the 50s.

Fall also means our evergreens are beginning to go through their seasonal color change. The older needles on pines are beginning to turn yellow and on some Scotch pines, almost a golden yellow. This is alarming more than one tree owner who assumes the pines must have a disease, but this is normal, and these needles will soon begin to drop. If the older needles are turning yellow and the needles at the tips are still green (as seen in the picture), this is normal.

Timely Topics

Emerald ash borer update

We are at the end for most treatment applications to manage this insect. The most effective time to inject ash trees is spring, once the leaves open, until mid-summer (or later if we have rains as we did this year). Once we get to the end of the summer most treatments are less effective and should be delayed until the following spring. There are several reasons for the limited effectiveness to fall applications. First, the larvae are large now and it takes a high concentration to kill them (but not the younger, smaller larvae in June and July). Second, the larvae will soon stop feeding for the year, so they are not going to ingest any chemical. It may be best just to wait to inject next spring.

Another possible reason for waiting till spring is that fall applications may not provide two full years of control. So, if you inject the fall of 2018, you might still need to treat in the spring of 2020 to continually protect the tree whereas a spring 2019 injection will protect the tree until the spring of 2021.

The sister waves of the urban forest

A Lake Superior phenomenon is the “three sisters”, a series of three waves, that strike a ship in short succession, overloading a ship. A ship can survive one, even two, of these large waves, but the third finishes it off.

The three sisters of the urban and community forest are elms, ash, and maples. These are (or were) poplar choices for trees due to their characteristics, but the overreliance of these genera has left our community forests vulnerable to exotic threats. We lost (and are still losing) our native elms to Dutch elm disease, are not beginning to loss our ash to emerald ash borer, and I am concerned that the next wave will be the loss of our maples, such as our many Freeman maple cultivars, to some exotic threat.

China has the most diversity forest of maples and there may be some minor insect there that might reach our shores and become a major problem due to the lack of defenses. We already have the Asian longhorned beetle that is killing maples in some Eastern communities, but my concern is more for an insect we do not yet even know.

The South Dakota Master Gardeners are assisting in an inventory of the street trees in Sioux Falls. They have surveyed about 5,000 trees, about 10% of the total street tree population so far. The results are a little scary, about 36% of the trees are ash. The next highest? Maple, at 31%. We really need to diversity our community forests and one way is to find other trees to plant than maple!

How long till emerald ash borer reaches across the state?

It’s a common question but no one has the answer since it depends on many variables. However, a look at the spread of Dutch elm disease across the state may provide a guide. While Dutch elm disease is a pathogen, and emerald ash borer an insect, Dutch elm disease depends on bark beetle for long distance spread. The insects can travel on infested firewood much as emerald ash borer can spread.

Interestingly both Dutch elm disease and emerald ash borer were first confirmed in Sioux Falls. Dutch elm disease spread out from Minnehaha County and it reached most of southeastern South Dakota within five year. It spread across all East River and parts of West River within 10 years. The disease showed up in

the Black Hills sooner than some other western locations since this is a popular camping spot and campers carry firewood. The last county to have Dutch elm disease confirmed was Harding County in 1986.

While the spread of Dutch elm disease may differ from emerald ash borer, this map may be a reasonable pattern for the loss of our ash across the state.

Dutch elm disease by years of confirmation

E-samples

Butternut woollyworm (*Eriocampa juglandis*) appearing in South Dakota? This may be the case. I received this picture of what appears to be a partially defoliated compound leaf of a black walnut. Along the margins of these partially eaten leaflets are these white mats with powdery white threads. These may be the butternut woollyworm, but I will need a sample to be certain. There should be (or may have been) a small worm, a sawfly, beneath the mass. I say, maybe, as the whitish, woolly material

is left with the shed skin as the larvae molts. The larvae may have all dropped to the ground by now and formed cocoons where they will remain until spring. The adult sawfly is a small wasp-like insect. It does not sting people but uses its saw-like ovipositor to lay eggs along the edge of the leaf. Once the eggs hatch, the larvae feed on the leaflets until late summer.

The populations fluctuate from year to year so finding them this year is not a good predictor that they will be found on the same trees next year. They also do not usually cause enough defoliation to be a concern. This insect is more of a "what is this cotton candy?" question than a threat to the trees.

Codling moth (*Cydia pomonella*) larvae are appearing in apples (ugh!). I received these pictures from Karen up in Marshall County of some apples brought in to the office. You can see the small worms and their debris around the core. These are codling moths and they are usually found in the core as they feed on the developing seeds.

The codling moth larva is between 1/4 and 1/2-inch long, pinkish with a brownish head and can be found feeding in the apple just after it forms and then later in the season. The adult moths emerge from their overwintering sites in the spring and lay eggs on the developing fruit. Once the larvae hatch, they begin to feed on the surface then burrow into the fruit. After feeding for a while they tunnel out of the fruit (there will be a hole with brown sawdust-like material around it), drop the ground and form a cocoon. Some stay in a cocoon until the following spring while others emerge as adults in mid-summer. These adults lay eggs on the mature fruit and the larvae, once hatched, burrow into the fruit in late summer.

Treatment of coding moth starts with the basics. Pick up and dispose of any infested, fallen fruit. Insecticidal sprays can be applied in the spring, as the apples are beginning to form – this is just after the flower petals have fallen. Do not spray while the trees are in bloom. It will kill the pollinators and do nothing to control the codling moth. A second spray should be applied about 10 days later. The most common insecticide for preventing apples from becoming infested is Malathion.

Pear slugs (*Caliroa cerasi*) are still appearing. Pear sawfly, also known as pear slug because of the slimy appearance to the larvae. The olive-green larvae are about 1/4-inch long with front of the insect just a little wider than the rear.

The insect has about another 1/8-inch to still grow and they will lose their green slime and become an orange-yellow.

The larvae are the damaging stage and feed on the leaves of pears (hence the name) as well as cherries and even an occasional plum or apple. They feed on only one surface of the leaf, a type of damage known as a window-pane. The damage is usually not severe enough to warrant treatments.

There are two generation per year of this insect. The adults emerge in the spring from cocoons in soil. The adults are a non-stinging wasp about 3/16-inch long. The adult female cuts slits in the edge of the leaves with her saw-like ovipositor with the eggs hatching within two weeks. The young larvae move out and feed on the upper surface of the leaves for about a month before dropping to the soil and forming cocoons. The second-generation adults emerge in early July to start the life cycle over again. The second-generation larvae, and there are still some out there, are the most damaging to the plant.

While almost any insecticide will kill the larvae (but check label first to be sure they are including it), treatments are rarely necessary. Usually the damage is not noticed until it's too late and their natural enemies provide the best long-term control.

Puffball are popping up. Puffballs are white, roughly spherical, fungal fruiting structures that appear on the ground often in woody draws among some dead trees. They can range in size from a golf ball to a basketball. If you split them open right now the interior is white and solid. There might be a short stem at the base that has a slight difference in texture when split. If there is a distinct stem running through the fruiting structure from base to top – it's not a puffball.

Puffballs sliced and fried with butter are delicious. They need to be picked before they become infested with tiny worms. The interior also should be firm and white. Once they start turning yellow on the inside they are not tasty anymore.

A final precaution. Do not harvest mushrooms based on this brief description. Also go with someone that has collected puffballs before so that the right mushroom is picked. A mistake can be deadly!

Samples received/Site visits

Grant County **Why is this pine losing its needles? Several are doing the same thing.**

This is just be normal fall needle drop for a ponderosa pine. Pines begin dropping their three-year old (the oldest) needles in September (sometimes even August) and some autumns – those with sunny warm weather like this year – the shedding can be very noticeable with the older needles becoming almost a straw yellow before dropping.

Marshall County **What is this plant and are the berries safe to eat?**

The leaf is from a Virginia-creeper (*Parthenocissus quinquefolia*) a woody vine common to the state. The 1/4-inch diameter bluish black berries appear in September and are quickly taken by the birds. I cannot find any information that discusses it as being poisonous but nor can I find anything that talks about how tasty it is – probably should leave it on the vine and buy a Snickers bar instead.

Pennington County **Why are our pines declining?**

This is diplodia tip blight (*Diplodia sapinea*). It is one of the most common diseases of ponderosa pine in the Black Hills. The symptoms present as resin droplets on some short dead needles on emerging new shoots. Later in the summer you'll notice more dead shoots, many with light brown wilting needles. These will appear on the lower two-thirds of the trees with the top often still green.

It's thought that the disease is found in far more trees than present symptoms and that a stress episode, such as hail or drought, can weaken the tree and the symptoms begin to appear. This area of Pennington County was one of the areas hit hard by the summer hail storm and

outbreaks of this disease often follow hail storms.

The infection of new shoots in 2019 can be reduced by applying a labelled fungicide, one containing Propiconazole, Mancozeb, Copper, or Chlorothalonil just *as the buds are opening* (usually early May) and repeat just before the needles completely emerge and again in 10 days. The treatments should be repeated for two years.

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