Pest Update (June 20, 2018)

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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

The basswoods and lindens are beginning to bloom in Brookings. This is a little ahead of schedule – surprising since we started the season so late. But we have had a lot of warm weather to make up for the cold spring. We have also had some wet and humid weather across much of the state. Warm, wet weather is the perfect conditions for many foliage pathogens to get started and I am already seeing trees partially defoliated by diseases.

Treatments to do now

Spruce bud scale crawlers will soon be hatching. The spruce bud scale (*Physokermes piceae*) resembles a small round, reddish bud and they can be found on near the tips of the branches where the side branches attach to the shoot. They, and their mobile young called crawlers, suck the sap from the shoots resulting in dieback and decline of the lower branches. Since these are soft scales they produce honeydew that results in a black, sooty appearance to the needles and twigs. The scales have one generation per year and the crawlers' hatch about the time littleleaf lindens bloom which should be in another week. The best treatments are insecticides containing Carbaryl as the active ingredient and applied on the foliage and shoots near the tips. Insecticides containing Imidapcloprid can be effective as a soil drench but need to be applied in the fall for control the following year.

It is time to treat for spruce needleminer. The needleminer (*Endothenia albolineana*) gets its name from it's the fact that the young larvae are so tiny they can live inside the needle, mining it as they feed. They eventually outgrow their home and then create a nest of webbed, detached needles to live in. The larvae usually feed on the lower, exterior needles, almost stripping the tips of needles but they can also be found in the interior of

the tree and even the tops of young trees. The adults are small moths that will begin flying soon and depositing eggs on the needles. The treatment is usually with a pesticide containing carbaryl as the active ingredient and labeled for this use. Infested tree should be treated now as the adults are flying. This is a little earlier than normal as some years the treatment is applied at the beginning of July.

Timely Topics

Emerald ash borer update

Emerald ash borer is on the mind of many throughout the state. I have been receiving photographs via text and emails of dying ash trees with holes or tunnels and pictures of beetles believed to be emerald ash borer.

I appreciate that South Dakotans are taking the threat seriously and are reporting possible beetles and infested trees. I really appreciate that South Dakotan are fairly educated on this pest and sending along pictures of infested trees and beetles that do look close to emerald ash borer. Here are a couple of the latest.

People have sent in anything that crawls as a suspected emerald ash borer in some states – even mailing in grasshoppers! But not South Dakotan. They send in beetles from the same family at least, the Buprestidae and many are sending in samples from the same genus, *Agrilus*, which is remarkable!

Last week I had a picture of the rose stem girdler, this week it's the two-lined chestnut borer (*Agrilus bilineatus*). This is a native insect that tunnels in oaks (*Quercus*) and hophornbeam (*Ostrya virginiana*). Two-lined chestnut borer is just a little smaller then emerald ash borer but there is still considerable overlap in sizes. The biggest noticeable difference are the white-yellow pubescent stripes extending from the edges of the pronotum back along the length of the elytra. The adults are also bronze black rather than a coppery green.

I also have been receiving picture of dying ash (we have zillions of these around the state) with tunnels beneath the bark. There are lots of borers that feed on dying ash trees. Most people never gave them much of a though until emerald ash borer came along. The most common picture submitted shows the galleries (tunnels made by the larvae) of the redheaded ash borer (*Neoclytus acuminatus*) or banded ash borer (*N. caprea*) These are two closely related insects that

burrow into dying, or even dead, ash trees. The exit holes made by the adults as they leave the tree are almost D-shaped but are more oval and a little larger. The galleries are not serpentine, zig-zagging beneath the bark, but meandering. There are no treatments for these insects as they are attacking dying ash trees rather than being the reason the tree is dying.

The other insect is the ash bark beetle (*Hylesinus aculeatus*). This insect feed on dying or recently dead twigs and branches. It is probably the most common insect found in fallen branches. The gallery pattern is very distinct with a central egg gallery with numerous larvae galleries coming almost perpendicular from it. The exit holes made by the adults are round and about the size of a bb.

E-samples

Curling ash leaves. The ash leaf curl aphid, also known as the woolly ash aphid (*Prociphilus fraxinifolii*) is showing up across the state again as it does every summer. We usually do not see it until later in June or even July, but this year samples and pictures are already coming in. The symptoms are curled leaves forming rosettes at the ends of ash shoots; particularly the rapid growing terminal shoots of young trees. If you unfolded the leaves, you'll find little "fuzz balls" that are aphids. You might also find lady beetle larvae that are feeding on the insects.

Treatment is usually either letting it be, since any treatment will not uncurl the leaves and the lady beetles do a pretty good job of control, or an insecticide containing Acephate as the active ingredient. This insecticide is a foliage systemic treatment and will kill the aphids as they feed (but not remove the damage). Most other insecticides are contact poisons and will not reach the aphids living inside the curls. There are also soil drench systemic insecticides, but these will not be absorbed fast enough to provide any control for the aphids this year. A spring application next year can prevent the problem from occurring next summer on small trees (those less than 8 inches in diameter).

Lecanium scales (*Parthenolecanium* spp) are a collection of common insect lump under a single common name. These insects very noticeable on ash right now, mainly because people are looking at their ash very closely. However, these insects are also common on elms and maples among other tree species. The female scales appear as a reddish brown hard bump attached tightly to the twigs, branches and young trunks of trees and they are usually found in clusters. Lecanium scale is a soft scale meaning they produce honeydew, a sticky substance that covers the leaves and anything else under the tree. The honeydew is usually colonized by sooty mold, which causes the "dew" to be covered with a black powder.

Usually the leaves on the infested branches or trees will turn color prematurely, usually about now, but rarely does an infestation seriously harm a tree. The best management is often to ignore it and let their natural enemies do their work. Small trees can be treated with insecticidal soap in late June to kill the mobile crawlers (check the label for cautions) or an insecticide containing Permethrin as the active ingredient and labelled for scales as a canopy spray on small trees.

I have received pictures of willow scab (*Venturia saliciperda*). This is a very common foliage disease that appears during the summer on willow trees across the state. The disease is closely related to apple and pear scab and the typical symptoms are discolored and falling leaves as well as tip dieback. This disease has similar symptoms to black canker (*Glomerella miyabeana*), a willow twig disease that can also cause the leaves to wilt and the shoot tips to die back. The two diseases are difficult to separate but the willow scab infected leaves will usually have "tufts" of spores on the underside of the leaf, generally along the midvein. These two diseases are often found in association with one another and when they occur together the disease is just simply called willow blight. There two diseases are common problems when the spring weather is warm and moist, a condition experienced by many areas in eastern South Dakota this year. The diseases are more common on stressed trees and last year's drought left many willows in poor health this year.

Winter-burn/winter-kill is showing up on dwarf Alberta spruce (*Picea glauca* 'Conica) across the state. The winter was harder on trees than most people realized, and we lost a lot of trees and shrubs to the very long and cold conditions. Dwarf Alberta spruce is not quite winter hardy for our state and is prone to winter desiccation injury. Winter-burn/kill does not happen to them every year, in fact it might occur every 5 or 10 years but when it does these trees really turn brown.

The trees were injured by the winter. If you scrapped away the bark this spring, the wood was brown rather than the healthy white. Once we started getting hot weather the trees could not move water through their damaged tissue fast enough and many trees turned brown "overnight".

Some of these trees are recovering but if the entire shrub has turned brown, with perhaps a shoot or two still green, most likely the plant is toast and should be removed.

Sample received/site visits

Kingsbury County **What is wrong with these spruce?**

Well, there is more than one problem with them. We are looking into some pathogens and will report the findings in next week's *Update*. The trees do have spruce needleminer (see this *Update* under treatments to do now) but there is probably a needle disease as well.

Pennington County **Two ponderosa pine samples, one sprayed for mountain pine beetle last year, the other not.**

The mountain pine beetle treated sample had a large population of the striped pine scale (*Toumeyella pini*). This is the insect mentioned in several *Updates* last year that was associated with trees in which they had been sprayed for several years for mountain pine beetle. The mountain pine beetle sprays were effective against the beetles but also killed many of the predators and parasitoids of other insects, most notably the scales insects. Generally, the natural enemies of the scales kept them in check but with widespread spraying (which was more effective at killing the natural enemies of the scales than the scales) we saw scale population soar. This is why we recommended people spray individual trees to protect them from mountain pine beetle rather than spraying entire

stands. The scale populations are dropping now that the natural enemy populations are rebounding so no treatments advised.

The needles also had dothistroma needle blight, a very common disease of ponderosa pines in the Black Hills this spring. Treatments can be found in the past several Updates.

The other sample does not have dothstroma but checking for other diseases and will report in the next *Update*.

Walworth County **What is wrong with these pines?**

We will be looking for pathogens, no insect signs or symptoms were found on the sample. Based on the shoot growth, these trees have been stressed for a few years. I will report our findings in next week's *Update.*

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