Pest Update (August 21, 2019)

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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 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 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.

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Plant development for the growing season

Apple harvest is beginning in many areas of the state so it's a good time to review how to pick apples. First, apples do not continue to ripen once picked, they are at their peak of color and flavor when you take them from the tree.

So, you do not want to pick apples too early but how can you tell? The first indicator the apple is ripe is the color. The apple should have the normal coloration for the cultivar without pale or yellowish patches. Next, if the color is right, the fruit should come easily off the branch. If you have to *pull* the fruit from the tree – it's too soon. If the apple is ripe, you shouldn't need to pull it off the tree, merely place the palm of your hand beneath the fruit and lift the apple up with a slight twist. The apple should snap off with little additional pressure.

Once you picked the apple, place it in the bag, don't throw it, otherwise it may bruise. Place it in a cool spot at home – root cellars are perfect, but rare to find in modern homes so the refrigerator will do. Just don't wash the fruit until you are ready to eat it, they last longer that way.

Timely Topics

Voles in cedar belts. I received a request to come over to Newell and look at some cedar belts that were having low branches and even entire cedar saplings turning brown. The damage was appearing on several belts and the calls were all coming in at the same time.

When I got out to look at one of the affected belts, the cause was obvious – voles. Every brown cedar, either the entire plant or a branch originating near the ground, had been girdled last spring.

Vole injury can be easily separated from rabbits by the gnaw marks. The gnaw marks from voles are irregular (though shallow so the wood appears smooth) and at various angle, quite different from rabbit which tend to cut everything off at a very regular angle, almost 45-degrees. The other clue that voles are a problem is the grass runways visible in the spring right after the snow melt. These meandering runways are constructed of clipped grasses.

Voles can become a problem with cedar (juniper) plantings as these evergreen plants provide good hiding cover for them. Voles will also take advantage of the protective cover from tall grasses and weed at the edge of fabric (and weeds coming up through the hole). Tall grass between rows provides hiding cover and mowing low, particularly in the late fall, is an excellent way to reduce movement of voles from row to row. However, the snow that tends to build up in cedar belts also provides protective cover.

The best management tactic for voles in small plantings is to trap them out. Mouse traps with peanut butter can be used. For larger plantings, windbreaks, vole populations can be reduced with toxic baits. The baits are placed in bait stations, small boxes, to reduce the risk to non-targeted animals. Scattering poison baits, rather than placing bait stations, is time consuming and voles are very sensitive to disturbances in their tunnels and may avoid the baits that are poured along them.

Toxic baits are generally on the restricted pesticide list, but some are available under general use. Baits are most effective when used in late fall to early spring when other food sources are limited. Baits must be frequently check and replenished as it takes at least three feedings to kill a vole.

Some baits also have a bitter flavor so it's best to increase the attraction to the stations with a few days of placing oats or other grains to get the voles use to coming to the stations for food. There are also vole repellents, rather than poisons, but these provide only short-term protection.

Bark beetles in the Black Hills. No, it's not the return of the mountain pine beetle (*Dentroctonus ponderosae*), nor even its small cousin, the pine engraver beetle (*Ips pini*). Instead, it's the big brother, the red turpentine beetle (*Dentroctonus valens*) that gather some attention.

The red turpentine beetle is a little larger than the mountain pine beetle, about 1/4-inch long with a distinct red-brown color. The beetle is often called an "ankle biter" as it typically burrows near the base of a pine tree so the pitch tubes – evidence of the beetle's penetration of the wood – are found along the lower three or four feet.

If you pull the bark away around a pitch tube, you'll find a large gallery that lacks the fine network of small larval galleries that radiate out from the other bark beetles.

Another difference from the mountain pine beetle, is that turpentine beetle is attracted to stressed trees (or even freshly cut stump!). The presence of red

turpentine beetles are indications that the tree is declining rather than being the sole reason for the decline.

The appearance of a red top surrounded by green trees caught our curiosity, was this a mountain pine beetle hit? When we hiked up to the tree, you could tell that it recently struck by lightning. The spiral crack running the length of the tree was a clue. While lightning-struck pines are also attractants for mountain pine beetle during its endemic stage (between epidemic), the red turpentine beetles beat them to it.

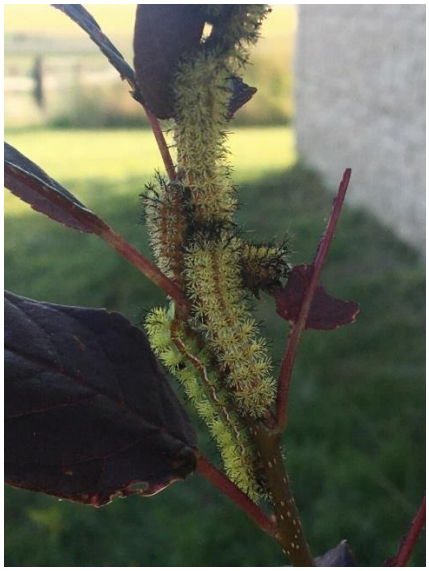
I also had a landowner who turned a pine stand into a residence. The alteration of the ground vegetation from forest to lawn changes everything from drainage to nutrient cycling, all to the disadvantage to the trees. Add a little pavement, pile a little rock around the trunk, and you have the perfect recipe for the attraction of the turpentine beetle.

Manganese deficiency in Colorado spruce. I have noticed Colorado spruce with bluish new foliage but the second-year foliage almost a cobalt yellow. Sometimes these needles had slight green horizontal banding. No insects or pathogens were ever associated with these symptoms. It was just a mystery.

However, with some guidance from the Ohio State University, the mystery is solved. The chlorotic appearance of these spruce is due to a manganese deficiency due to this microelement being insoluble in our alkaline soils. If manganese is deficient in the tree, spruce will rob the element from the older foliage to support the growth demand of the newest needles.

While you cannot assume yellowing needles are due to an element deficiency, the appearance of this deficiency in spruce means that this is a possibility factor. Foliage testing can, and should, be performed to determine if this deficiency occurs in the foliage and if so, altering the soil pH (a difficult task) or adding manganese in an available form is warranted.

E-samples



Beware the hair. This was a e-sample from Harding County. These caterpillars crawling on a Shubert chokecherry will defoliate the tree, but they also can "sting" you. The Io moth (*Automeris io*) caterpillar has sharp venomous spines that line their back look pretty but don't touch! If you brush your hand across the back of one of these caterpillars, it will cause a prickling sensation, like brushing against stinging nettle (note – pet dogs, not caterpillars or weeds).

The Io moth overwinters in a cocoon with the large adult moths emerging in early summer. The eggs are laid on the shoots and leaves of many different tree species including cherries, hackberry, oaks, and willows. Once the eggs hatch, the larvae move out to the leaves to feed. They do not form a nest but may feed in groups that form long trains as they travel up the shoots. Eventually the larvae feed alone before dropping the group to pupae for the winter.

The larvae can defoliate a small tree within a few days. The young larvae are susceptible to many common insecticides including Carbaryl and Malathion.

I received a nice picture of a creeping cotoneaster with **pear slugs**, *Caliroa cerasi* (cherry slug is another name). The "slugs" are nonstinging wasps as adults but the larvae do resemble the garden slug. They are dark green, swollen near the head and are very slimy. They feed in late July and often the damage is not noticed until they have already developed into adults and left the plant. We often have a second generation of this insect in late August/early September, so some folks are finding slugs on the leaves of their cotoneasters, cherries, and pears. The slugs do little harm to the plants, but the browning leaves are unsightly. The most common treatments to apply when the larvae are present include insecticides containing Carbaryl or Malathion as the active ingredients.

I received pictures of what may be crown gall on burning bush (*Euonymus alata*). The galls – rough, woody tumors – occur just beneath the soil on burning bush and these can enlarge and choke off the flow of water and nutrients (these same galls occur just above the surface with *E. fortunei*). Infected shrubs sometimes start with a few branches presenting wilted leaves, but this progresses to decline and death of the entire shrub within a few years. The disease is due to

a bacterium *Agrobacterium tumefaciens*. The disease is common to many different woody plants including roses and poplars. There is not much that can be done to prevent or stop the disease. A healthy plant can usually tolerate the tumor so keeping the plant watered is a good means of prolonging its life. If a plant dies from the disease, dig up the shrub, the adjacent soil (just the soil attached to the roots) and dispose of both.

Samples received/site visits

Clay County **Why are the lower branches dying on these spruce?**

The problem here was cytospora canker, a very common disease of spruces. Colorado blue spruce is the most susceptible spruce and we see the disease on this species more than any other. The lower branches of an infected tree will begin to shed all its needles prematurely and within a year or two the branch dies. and die and evidence of the disease is often present as bluish-white resin blisters on the affected branches. There is nothing that can be done about the disease other than keep the tree healthy by watering and pruning off the branches as they die.

Lawrence County **Distorted foliage 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. 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. Sometimes the population crashes so all you see is the distorted growth – as in this case – but no galls.

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.

Pennington County **Why is my birch dying?**

First, it's not a birch, but a quaking aspen. Aspen has creamy white bark that does look like birch, but it does not peel or flake away. The problem here was that the trunk was girdled, which stopped the movement of food to the roots, so the roots starved, and the tree died from the lack of water, hence the curled leaves. The girdling looks to be the work of deer which can rub the bark from the trees at this time of year. However, this damage was done last fall and it took this length of time to kill the tree.

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