Pest Update (August 14, 2019)

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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

Late season flowering is a common phenomenon when we have a period of wet weather in late summer (and some areas of eastern South Dakota have received more than 200% their average rainfall in the past 30 days). I have seen a lilac, crabapples, and even a magnolia starting to bloom during this past week. Not a lot of flowers but just a couple here and there on the plants. Flowering of crabapples, lilacs and other trees at this time of year is not a cause for concern. They will still be ready for winter on time but since some of the flower buds are opening now there will be fewer blooms on the plant next spring.

Timely Topics

Another probable velvet longhorned beetle (*Trichoferus campestris*) was found in South Dakota. It is being sent out for confirmation. The latest one was collected from a South Dakota Department of Agriculture trap in Brookings County.

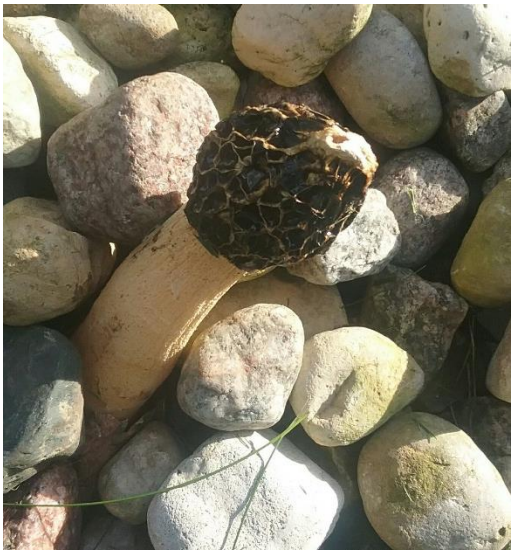
This is a wood-boring insect from East Asia, native to China, Korea and Russia. It was first detected in North America in Quebec (2002) and since then in 14 states including Colorado (2013) and Minnesota (2010). The insect is typically detected in traps and in wood stored in warehouses, but this borer is established in trees in Utah. An adult emerged from a walnut table last year that was made from a walnut tree in Vermillion.

Traps were placed in the Vermillion region in 2018 after this find and across the river in Nebraska but no velvet longhorned beetles were captured by them last year. Trapping continued in same area this year and no adults have been captured so far this year though Nebraska collected three in 2019.

The larval stage of the insect can survive in raw timber and even dry wood. The preferred living host is apple/crabapple (*Malus*) and peaches (*Prunus*). But it has been found in birch (*Betula*), honeylocust (*Gleditsia*), mulberry (*Morus*), pine (*Pinus*), spruce (*Picea*), walnut (*Juglans*), and willow (*Salix*). Infested trees usually present with declining canopies and epicormic shoots. There will also be pencil size oval holes on the trunk and frass (sawdust-like pellets) at the base of the tree. Finding these symptoms and signs does not positively identify the tree as infested

by the velvet longhorned beetle as infestations by our native longhorned beetle will present the same symptoms and signs.

This insect has the potential to be a significant pest in apple and peach orchards. It also can become a structural problem in rustic furniture, any wood product with some bark retained on the edge. The insect has been known to live 18 months in furniture before emerging.



Mushroom questions continue to come in. We are seeing a "bloom" of mushrooms currently and one of the unpleasant ones is the stinkhorn. The name is appropriate as the fungi have a very bad odor. A patch will smell like rotted flesh – yum! Well maybe not to people but flies like the odor and will land to feed on the slime on the caps which contain spores that the flies will now carry to other locations.

There is not much that can be done to prevent stinkhorns from appearing. They are feeding off dead organic matter and if enough organic matter remains in the soil they will continue to sprout up. Fortunately, the fruiting structures – the mushrooms – do not remain up for every long and can be easily cut and discarded.

An interesting note. Given enough organic matter and a few wet days, these can grow extremely fast. Sometimes as much as 6 inches an hour so they can literally appear overnight!

Emerald ash borer Update

Mature larva gallery (L), young larva gallery (R).

The emerald ash borer flight period is coming to an end in Sioux Falls. The last recorded emergence was a couple of weeks ago and since the adults live for about 6 weeks, the last one should be dead by Labor Day.

The adults have been out for about 10 weeks and eggs began hatching back in mid-June. Most of the larvae are still small, mostly 2nd instar (average head capsule width of 5 mm) through there are some 1st instar and 3rd instar tunneling beneath the bark.

Attack of the vines! This year trees and shrubs in shelterbelts and roadside ditches are covered with a rambling vine. This is particularly noticeable now as the vines are covered with clusters of larger white starry blooms – impossible to miss.

This is not an invasion of some alien plant, but the native wild cucumber, *Echinocystis lobata*. Why the widespread appearance this year? As with last year, blame the rains. The vine performs best in moist soils near ponds and streams and with the constant rains we have had this summer, almost everywhere is a pond or stream. The vines are also much larger due to the abundant moisture.

Wild cucumber is a member of the cucurbit family and has as relatives the tastier cucumber, pumpkin, and squash. While the wild cucumber does produce a fruit in late summer, it is anything but edible. The 2-inch oval green fruit is covered with soft spines. If you cut into the fruit it is nothing more than two cavities, each containing two seeds held in place by webbing – not much to eat (and don't eat them)! The fruit also tends to explode (imagine that with pumpkins!) which spread the seeds everywhere.

The vines do provide benefits for game and songbirds. The rambling vines provide good cover and concealment from their predators. That is about all they are good for. If they sprawl out into corn or soybean field they can interfere with the harvest.

The vines can become so massive that they shade out small trees and shrubs. While it takes a lot of vine to block enough light that it harms the small tree or shrub, this does occasionally happen. Larger trees and shrubs have enough foliage surface area that the vines rarely interfere with their development even if they appear to be completely engulfed by them.

The vine is an annual so spraying now is not a solution. The best treatment is to pull the young vines out in the spring. If that is missed, try to pull out the larger vines before this go to seed which means you better move fast. If you do try to remove the vines from small trees or shrubs, be careful. The tendrils hold very tightly and must be cut away. Merely pulling the vine can result in broken branches and uprooted woody plants.

E-samples

This ash tree was not infested with emerald ash borer. We received an email on the EAB hotline regarding a possible infested tree in Pennington County. Since some calls are not even about an ash, I requested a picture of the tree and the exit holes.

The tree was an ash, transplanted about five years ago, and appeared to have struggled since then to recover. Stressed ashes are susceptible to a several native borers including two, the banded ash borer (*Neoclytus caprea*) and the redheaded ash borer (*Neoclytus acuminatus*). These borers will attack dying and dead ash and have always been present in these trees. Just now with the focus on emerald ash borer, everyone is spotting the holes and assuming the worst.

The emerald ash borer makes crisp, 1/8-inch, D-shaped holes. If you that to think about whether its D shaped or not, it isn't emerald ash borer. The banded and redheaded ash borers make a larger hole, about 1/4-inch and are more oval, especially the redheaded. I call them a "fuzzy" D shaped.

Oval exit holes for adult redheaded or band ash borer.

Can I eat this? A mushroom question. First, a picture is rarely adequate to determine whether a mushroom is edible. This e-sample is probably an excellent example of this problem.

This *might* the meadow mushroom (*Agaricus campestris*). This mushroom is related to the button mushrooms we buy in stores and can be used in sauces or cut up and eaten raw in salads. The mushroom has a very short shelf life, so it is picked and consumes within a day or so. The meadow mushroom has a white cap and gills that are initially white but turn almost black with age.

However, this may also be the green-spored parasol mushroom (*Chlorophyllum molybdites*), also known as the vomiter mushroom – that should give you an indication of what happens if you eat it! This mushroom also has a white cap when young and whitish gills that turn dark with age.

The two can be easily separated in the field by someone who knows mushrooms but not from a single picture! Do not eat them.

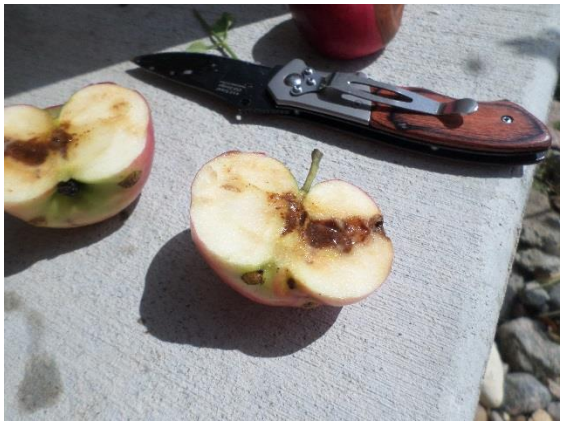
What is this stuff on the bark? These are lichens, non-parasitic (so they are living *on* the bark, not *from* the bark) composite organisms that are a fungus and a green alga or cyanobacteria intertwined among its filaments. The fungus collects water and elements and the alga uses these materials to undergo photosynthesis and manufacture sugars for itself and the fungus.

Lichens can live on almost anything, including on soil, rocks and even trees. Lichens are common along sunny sides of tree bark. Since a dying tree will have more light penetrating down to the bark (fewer leaves), they have more lichens, and therefore people mistakenly assume the lichens are causing the decline.

They also require clean air so are more numerous than they were decades ago before air pollution was regulated. The improvement in air quality has meant that lichens are staging a comeback!

Samples received/site visits

Brookings County **What causes these large holes in my apples?**



Codling moth (*Cydia pomonella*) appears to have been the problem with this apple. Notice that the tunnel goes to the core and the seeds are missing. Codling moth larvae 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 home orchardist to use for codling moth is Malathion.

Lake County **Why are my pines dying?**

Another "people doing bad things" case! The lawn was perfect beneath these ponderosa pines. I could not find a single weed anywhere. That usually is suspicious, so I asked, "Have you sprayed anything?" The answer, just a little 2,4-D. I asked if he had the container and in the garage was a bottle of GrazonNext HL. Yes, it has 2,4-D as an active ingredient, but it also has aminopyralid. GrazonNext HL should be used with caution around ponderosa pines, staying beyond a distance equal to the height of the trees and preferably twice that distance.

Lake County **Why are my Scotch pines dying?**

This was a sad stop. The entire grove of mature Scotch pines are declining due to pine wilt disease. Pine wilt has been discussed many times in the Update and it is becoming a more common problem in our state. The disease (caused by a nematode, a small roundworm) was limited to pines along the southern edge of the state two decades ago but now can be found as far north as Spearfish and Watertown. The reason for the advancement north may be due to our warmer summers which reduces the tree's capability to defend itself from the nematode.

The disease is mostly a problem on non-native pines, Austrian (*Pinus nigra*), mugo (*P. mugo*) and Scotch (*P. sylvestris*), with Scotch pine being the preferred host. The wilt seems to spread to Austrian pines once all the Scotch pines in the location have been killed.

The disease tends to kill a tree the same season that symptoms present. Midsummer starts with a few yellowing needles that quickly spread throughout the entire tree and by autumn the tree is covered with hanging, brown foliage.

The disease can be prevented by injections, but the treatments only prevent the disease, they cannot cure an infected tree. The treatments are only about 60 to 80% effective and the effectiveness seem to be lower on the large trees, the ones that most owners want to save.

Spink County **What is wrong with this Shubert chokecherry? The trunk is covered with this white substance.**

This is a sapwood rot fungus, perhaps *Schizophyllum*, one of the split-gill mushrooms. It is a decay fungus and generally means the limbs to which it's attached is either dead or dying. The fungi enter the tree near branch stubs or old pruning wounds and spreads vertically from there. Since the disease is already established in the sapwood, there is little that can be done to correct the problem. Unfortunately, the only recommendation is to remove the affected limbs.

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