

Pest Update (June 4, 2014)

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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. **Walnut samples may not be sent from any location – please provide a picture!**

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 product identified in this publication.

Plant Development.....	2
Timely topics	
Tasks to be completed now.....	2
Clearwing ash borer	
Mountain pine beetle	
E-samples	
Apple scab.....	3
Apricot scab.....	4
Chlorosis on trees.....	4
Cryptosphaeria canker on aspen.....	5
Boxelder identification.....	6
Samples received	
Pennington County (western gall rust).....	6
Stanley County (redheaded ash borer).....	6
Yankton County (browning arborvitae).....	7

Plant development (Phenology) for the growing season



Plant development. It is amazing just how fast the growing season advanced in the past week. The crabapples are finished blooming in Brookings and the pagoda dogwoods are now in full bloom. This is about the average time for them to flower. However, Kentucky coffeetrees, one of the last trees to leaf out have just leafed out in much of the state and catalpas are either still in the bud stage or are just beginning to leaf out. .

Treatments to be doing now



Clearwing ash borer treatment with an insecticide containing permethrin as an active ingredient can begin now. The bark must be sprayed to protect the tree as the insecticide will kill the adults as they are walking on the bark while laying eggs. The insecticide will also kill the newly hatched larvae before they burrow into the wood. Systemic treatments are generally ineffective so injecting a pesticide or pouring one around the soil are not practical means of managing this particular borer. The adults are usually out flying about a week or so after Vanhouttee spireas begin to bloom and the shrub is in full bloom across the state. The picture shows the pupal skin of a clearwing ash borer that was left as the insect exited the tree.



Spray treatment to protect pines from mountain pine beetle (if you live in the Black Hills). We do not have many pest treatments to begin at this time of year. Most disease have already infected the foliage and foliar-feeding insects and many borers have already come and gone or have burrowed into the protective inner bark or wood. However we have a few insects in which treatments can still be initiated, clearwing ash borer being one and another is the mountain pine beetle (*Dendroctonus ponderosae*). This insect attacks trees in mid-summer, the flight often peaking just before Rally week, with the adults burrowing beneath the bark and laying eggs along the gallery they create. The small, white, grub-like larvae

soon hatch and begin feeding continues until late spring of the following year before becoming pupae and then adults.

High-value trees, those surrounding a home nestled in the Black Hills forest, can be protected by pesticide applications. The only way a pine tree can be protected by a pesticide application is if the spray is applied before the beetles attack. The window for spraying a pine to protect it from attack is now, before you forget and it's too late. A check of insect development last week found that most of the mountain pine beetles were still larvae but a few pupae had already formed. Based upon this development, the first adults will probably be flying sometime in mid-July. This means the spray should be done very soon if not done already. The trunks of the trees to be protected must be sprayed to from the ground to a point on the trunk where the diameter narrows to 5 inches or less or 50 feet whichever is lower. This requires a high-pressure sprayer, one with at least several hundred pounds per square inch (psi) of pressure. Most small sprayers either cannot reach that high or at that height will merely mist the bark rather than have the pressure necessary to soak the bark to runoff. The pesticides to use for treating the trunks are those containing bifenthrin, carbaryl or permethrin as the active ingredient and use only formulations specifically for listed for controlling bark beetles. All three active ingredients are effective at protecting pines if applied at the maximum labelled rate. Pesticides containing bifenthrin that are labeled for mountain pine beetle control can only be applied by commercial applicators.

E-samples



Apple scab is already beginning to show symptoms on trees in the southern part of the state. The most common symptoms of this foliage disease are olive-green spots developing on the leaves and the leaf appearing slightly off-green or even yellow. The spots gradually enlarge and become darker. Severely infected leaves will often begin dropping by mid-summer. The disease overwinters on infected fallen leaves

and if we have a cool, moist spring (which we did in many areas of the state), the disease will quickly develop. There is not much that can be done once the disease symptoms appear. The management of this disease, as was pointed out in earlier issues of the Update, is to begin fungicide applications in early spring, just as the buds are expanding. Sprays are continued on a 10-day until later in June but if the first two sprays are missed (and in many areas of the state the third application should already be on), further control with sprays will be minimal.



Apricot scab is not a disease we commonly see in the state (more likely because apricot trees generally produce a crop only every three or four years due to the flowers being killed by a late frost). However I got this picture sent in of apricot scab on a tree down near Mitchell. Scab, also known as black spot, occurs on peaches and apricots in our area and we even occasionally see it on plums. The disease begins to develop on the partially mature fruit about a month after

petal fall and starts as only a few black spots often concentrated near the base of the fruit or the sunny side. The spots enlarge becoming irregular in shape, turn brown and develop a very corky texture. The fruit can later shrivel and crack. The disease also affects the leaves and twigs resulting in slight dieback of the infected shoots. Management is mostly focused on avoiding planting apricots and peaches on low, poorly-drained soils, where the trees become stressed, and pruning to keep the canopies open and promote better air circulation.



Chlorosis, a condition where the leaf veins remain green but the surrounding foliage turns pale green or yellow, is a common occurrence on certain tree species in South Dakota. The ones that we typically see these symptoms appearing are Amur maple, pin oak, red maple, red oak, river birch, and silver maple. The reason for chlorosis is not a fungus but the lack of iron (FE) or manganese (MN) for maples in the foliage.

The lack of FE or MN is not because the soils do not contain adequate amounts of these microelements but due to our alkaline soils rendering them into a form not available to the tree. Any soil with a pH greater than 7.2, and that includes many of the soils in our communities, can result in these trees mentioned earlier turning almost a golden yellow by mid-summer. Severely affected leaves can begin falling about that time as well leaving the tree bare by autumn. Since the problem is not the lack of FE or MN merely adding them to the soil is not going to help nor will pounding nails in the tree, as 1) this is a poor way of getting iron in the tree and 2) most nails do not contain a lot of extractable iron. The solution is either spray the foliage with a FE or MN containing solution, implanting FE or MN capsules into the trunk, fertilizing with a chelated form of FE or MN or reducing the soil pH so the microelements already in the soil become available.

Spraying the foliage with a ferrous or manganese sulfate will provide a quick “green up” of the foliage but only if the application is made just after the foliage fully expands. If done late in the season the leaves may not color as well. The application is also only a temporary fix and often the leaves or newer leaves will

become yellow later in the summer. Misapplication of these sprays can also damage foliage and stain concrete.

Implanting iron or manganese in the trunk can provide a green-up within a few weeks of application and the benefits may last a year or two. There are implants that are available for homeowner use, such as Medicaps, but these are rarely carried in local garden centers and department stores. Some of the larger chemical supply stores and some larger garden centers may carry them. The products are easy to apply but the directions should be carefully followed to avoid any unnecessary injury to the tree.

Chelated forms of iron and manganese can be applied to the soil and these applications provide benefits for usually a year or two but may take several months before the leaves lose their chlorotic appearance. The chelating agent keeps the iron or manganese in a form available to the tree but not all chelating agents are effective in our slightly to moderate alkaline soils. The best chelating agent for our soils is EDDHA and this one should be on the label. Chelated iron and manganese is available at many garden centers and farm supply store but you still may have to do some looking.

Altering the pH so that the iron and manganese in the soil is available is the best solution but is not easily done. The alkaline soils in our state are well-buffered meaning the pH is not easily lower or will stay lowered for very long. However it is worth a try and the most common acidifying agent is elemental sulfur (sold as organic soil acidifier). This can be easily purchased in the garden section of many building supply stores.



Cankers are a common appearance on many trees and usually are indicators of a tree that is severely stressed, not only by the pathogen causing the canker but an underlying environmental stress that allowed the pathogen to colonize the tree. Aspen is one of the tree species prone to canker disease and one of the more serious ones is cryptosphaeria canker. Cankers of this disease are usually narrower and longer than other aspen cankers. The bark killed at the margins of the canker become discolored, often an orange, and the dead inner bark turns stringy and black. The cankers often are bleeding cankers and will ooze a dark reddish brown liquid that may run down the bark. The disease is a canker-rot and the disease will degrade the heartwood and sapwood which can result in stem failure. There is no management of the disease except avoiding stressing the aspen.

And finally an identification question. I was asked to identify this tree growing out in Jerauld County. It is probably one of the most common trees in that county, as well as most other East River counties, boxelder (*Acer negundo*). The tree produces pinnately compound leaves, usually in 3's but occasionally in 5's, which are attached opposite to one another along the shoot. The tips of the new shoots are usually covered with a bluish powdery bloom.



Samples received/site visits

Pennington County

What is causing this yellow dust?



This is a branch gall of the western gall rust sporulating. The yellow-orange spores form in the cracks of the galls and are spread during moist, late spring weather. This is an unusual rust disease as it does not require an alternate host to complete its life cycle, instead spreading from the branch galls to the new needles and from there producing a new gall on the current year's shoots. Western gall rust affects mostly ponderosa pines though can infect most 2- and 3-needled

pinus. The disease results in woody cankers that can cause dieback and deformities. Seedling and saplings can be killed by the disease. Management is focused on removing small trees with galls, as a tree once infected will continue to become infected even if the galls are removed.

Stanley County

Is this the emerald ash borer?



No, these are the exit holes and galleries created by the redheaded ash borer. This insect, as mentioned in last week's *Update*, is our closest look-a-like for symptoms associated with emerald ash borer. The adults of the two insects do not look alike but the exit holes, D-shaped (emerald ash borer) and O-shaped (redheaded ash borer) are similar and both do create frass (powder) filled galleries on the sapwood. Woodpecker feeding is also

associated with both insects since the larvae of these borers feed just beneath the bark.

Yankton County

Why are the arborvitae dying?



This is a common question across the state this year. The winter while not exceptionally cold, was long and followed a dry autumn. This combination resulted in winter burn and winterkill on many evergreens, particularly ones sensitive to this type of injury such as arborvitae and firs. If most of the foliage is brown – cut it down. If there are just small patches of brown foliage and the twig color just beneath the bark is a greenish white then the evergreen will most likely recover.

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