

Pest Update (June 8, 2016)

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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.

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Plant development

We seem to be right on schedule for plant development. The black locust are finishing their flowering across the state and the catalpa and lindens are getting ready to flower. If anything, we seem to be just slightly ahead of normal.

Tasks to complete in another week or two



Spruce bud scale crawlers will soon be hatching. The scale 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 are in bloom which should be in another week or two. The time to treat is during the crawler stage. The best treatments are insecticides containing carbaryl as the active ingredient and applied on the foliage and shoots near the tips. Products containing imidacloprid can be effective as a soil drench but need to be applied in the fall for control the following year.



We are also coming up to the 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 in another two weeks as the adults should be flying by then.

Timely topics

Beetle-geddon! May beetles (*Phyllophaga*), also known as June bugs, are causing significant defoliation of trees from Winner to Watertown. These beetles are called May or June as these are the months the adults are flying. The adults are shiny reddish-brown and about an inch long and stout. This insect spends most of its life underground as a C-shaped larvae, about 1 to 1 ½ inches long, while feeding on the roots of grasses, crops and other plants. They are one of several larvae in the soil commonly referred to as white grubs. The larvae take about three years to complete their life cycle in the soil and emerge in the spring (May) as adults. The adults feed on the young leaves of many tree species, but seem to have a fondness for ash and oak. The adults are nocturnal so many people cannot figure out what has been chewing on the tree's leaves since they never see the insect. The adults are also a nuisance as they buzz around light fixtures at night so you can find them in the parking lots of gas stations. The pavement at the gas stations in Oacoma were covered with the crushed bodies of these insects last week.



I was called to look at the trees in one of our state parks last week as they were concerned the foliage was missing from many of their oaks and ash (but not the elms and hackberries). When I arrived the first thing I noticed was the ground was covered with tiny holes, almost as if lots of campers walked around in oversized golf cleats. When I looked

closer, the ground was covered with the bodies of dead June bug adults. The ash and oak trees over these spots had almost every leaf chewed. The adults can feed on the entire leaf, but sometimes will only feed on part of it. Since the leaf is still expanding at this time, the small holes appear to become larger.



Since the foliage damage is not noticed until the insects are almost done feeding, there is little value in treatments. Unless the tree has already been severely

stressed (e.g. new planting, construction damage, other defoliators), they will soon have a new flush of leaves.

Why are my “cedars” turning color at the tips? There are two very common foliage diseases of junipers called twig blight which result in flagging or browning of the shoot tips. These diseases are either Kabatina (*Kabatina juniperi*) or Phomopsis (*Phomopsis juniperovora*) twig blight. Since treatments are different, actually nonexistent for Kabatina, it is important to know which disease is present.



Kabatina twig blight occurs on junipers stressed by drought or that have suffered mechanical injury such as snow/ice loading or hail. The disease enters the tissue through wounds usually during late summer or early autumn though the symptoms, yellow-brown shoot tips, do not occur until spring. Affected shoot tips become ash-gray by early summer and either persist or begin to snap off. At this time of year, you can look for a gray lesion at the spot on the twig where the discolored foliage and the normal green foliage meet.



The symptoms for Phomopsis usually do not begin to appear until early summer, about now this year. The reddish brown foliage is mostly limited to the tips right now but since this disease can move into older tissue (unlike Kabatina), it can appear as if the entire tree is turned brown. Usually you will also find ash-gray foliage and shoot that died last year from the disease, mixed among the browning tips from this year. There are effective fungicide

treatments for Phomopsis twig blight, fungicides containing copper, mancozeb or propiconazole and labelled for twig blight, can be applied at 14-day intervals beginning in mid-May and continuing until the weather begins to turn dry and new shoot production ceases. Unfortunately, there are no fungicide treatments for kabatina twig blight.

Since there are no effective treatments for Kabatina, it is important to know which pathogen you are dealing with in your shelterbelt. The best means of separating the two is an examination of the conidia spores. The spores are about the same size and shape for both, but the Phomopsis will have two distinct oil droplets at each end of the one-cell spore while these will be absent in the Kabatina. This separation requires a microscope, and knowing what to look for, so a sample should be submitted for determination of the pathogen.



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 mid or late June 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 acephate (Bonide Systemic Insect Control). 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. A soil drench systemic insecticide will not be absorbed fast enough to provide any control for the aphids this year but a spring application next year can prevent the problem from occurring next summer.

E-samples



Ash/lilac borer larvae and pupae were sent in as a picture. These were removed from the base of a lilac. The ash/lilac borer (*Podosesia syringae*) is often associated with ash but, as the common name implies, it will also attack a closely related species, the common lilac. Another borer species, the banded clearwing ash borer (*P. aureocincta*) only attacks ash. Both insects tend to attack stressed plants so are not only a problem

but are indicators of a more serious problem, whatever underlying stress predisposed the plant to attack. Drought, "lawnmower" blight, and in the case of lilac, competition with sod, are all examples of stresses that contribute to the decline of the plant and attraction for the borer.

The ash/lilac borer is easy to detect as the base of the plant will have "sawdust" on the ground and around pencil-size holes. This is frass, a mix of insect poop and debris, which the larvae push out of the tunnels. Heavily infested plants will have wilted leaves and may have some branches or even entire stems die. The adults fly in late spring, early summer and resemble a wasp though they are actually a moth. The female lays eggs on lower stem, near a wound if one is

present (remember “lawnmower” blight). After the larvae hatch out they tunnel into the sapwood and spend the rest of the summer and into the next spring feeding before pupating and becoming an adult.

Treatments for lilacs include removing any infected canes by pruning them off near the base and burning the debris. This treatment also opens up crowded lilacs and improves the plant’s health which reduces susceptibility to future attacks. Plants can also be protected by spraying the trunks with a single application of an insecticide containing permethrin applied approximately a week after Vanhouttee spireas begin to bloom. This event occurred about two weeks ago, but apparently we still have adults emerging so probably better to spray now then wait until next year. There are no effective systemic treatments for this insect. However, there is an interesting organic treatment that is sprayed on the plants and is directed to killing the larvae, NemAttack™ is a product that contains a nematode, *Steinernema carpocapsae*, which is sprayed on the gallery entrance holes. The entomopathogenic nematode (and a bacteria the nematode carries) will parasitize and kill ash/lilac larvae.

It’s going to be a rusty year. The next three e-samples are fungal leaf diseases. We are seeing more of these than normal due to the continually wet weather much of the state has experienced this spring. Fungal spores need a wet surface for germination so the leaf needs to stay wet for several hours or more – not a problem this year, unfortunately!



Ash rust pictures are coming in and this may become a bad year for the disease.

The disease begins as bright orange spots on the petioles and undersurface of the leaves. These enlarge during the season, becoming almost gall-like and further distorting the leaves. These infected leaves usually drop prematurely resulting in another round of telephone calls and emails from alarmed tree owners as their yards become filled with fallen leaves in July and August.

The disease can also affect the young twigs and shoots though this is rarely seen (except back in 2008). However, this year the conditions are just right for the development of the disease, cool and wet, and I have received numerous reports and pictures of this infection. The disease, as with many other rust diseases, has two hosts, one is the ash and the other is a number of grasses. The disease can be managed with a single application of a fungicide containing myclobutanil made just as the leaves come out so it’s too late for treatment this year. Treatments are not usually recommended anyway since the disease is not a tree-killer.



Leaf rust is also appearing on many buckeyes. I usually receive a few calls and samples about this disease about the middle of the summer as it is a common occurrence on buckeyes. This rust disease, caused by the fungus *Puccinia andropogonis*, results in reddish brown spots on the leaves that often have a yellowish margin. The disease is common on the tallgrass prairies as the aecial and telial host plant lists contain many grasses

and perennials with big bluestem and little bluestem the most common telial plant hosts. Buckeye (*Aesculus*) is one of many aecial hosts. The disease certainly results in lots of spots on the foliage which can spoil the appearance of the tree but otherwise is not a threat to the infected tree's health and no treatments are recommended.



Cereal rust (*Puccinia coronata*) is showing up on common buckthorn. The disease is resulting in highly colorful fruiting structures that will release aeciospores that infect barley, quackgrass and other grasses. These infected plants will produce basidiospores next spring to infect the buckthorn. There are no recommended treatments for the buckthorn since this is an invasive weed which everyone

would be happy if the disease just killed it. Unfortunately the rust disease just discolors the leaves. Quackgrass, another weed, is one of the most important, and frequent, overwinter sources for the disease so we have a unique pathogen that actually spreads back and forth between two weeds without killing either. Too bad.



Plum pockets is a disease that shows up about this time of year, along with lots of e-samples! The disease is caused by a fungus (*Taphrina communis*) and results in unripen plums which become abnormally large, spongy, distorted and hollow on the inside. The infected fruit shrivels, turns black and will remain mummified on the tree into autumn and even the winter. The disease generally is a problem on the American

plum (*Prunus americana*), the wild plum found in thickets across the state. It is not usually a problem on the hybrid plums grown for fruit. The disease is supposed to be managed with a single application of a copper sulfate fungicide made just before bud-break but good luck. Timing has to be just about perfect otherwise the disease will appear.

Samples received/site visits

Pennington County

What is killing the needles on this ponderosa pine?



This appears to be dothistroma needle blight (*Dothistroma pini*) disease. Needles infected by this fungal disease characteristically have reddish brown bands that may contain black fruiting bodies. The fruiting structures are not always visible. The early symptoms of the disease are deep-green bands and yellow to tan spots on the needles. The bands turn a brown to red brown with the tip of the infected needles turning brown while the base of the

needle stays green. The disease is a foliar, rather than a twig, disease so rarely kills the tree but it can disfigure it as the older, infected needles are shed. Management is applications of copper or mancozeb fungicides applied as the new growth expands (mid-May) and repeated in late June. Ponderosa and Austrian pines should also receive a third application in mid-July.

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