

Pest Update (July 26, 2017)

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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 for the growing season



We are right on schedule for plant development, maybe even a little ahead still. The smooth hydrangeas are in full bloom but are not too happy about it. Smooth hydrangeas are called “water pigs” as they demand evenly moist soils and often wilt during a hot afternoon. There has been plenty of those days so far this summer.

Emerald ash bore - Update

The recent confirmation of emerald ash borer in Buena Vista County in Iowa, a mere 80 miles from South Dakota, is heightening concern about its eventual presence in South Dakota. The day is certainly getting closer. Confirmed infestations are found in the Omaha, Nebraska and Minneapolis-St. Paul Minnesota metro areas and now in about half the counties of Iowa. The most ominous finding with the Alta Iowa discovery is that it was about 100 miles from the closest confirmed finding.



The *Update* will provide weekly information on the location of emerald ash borer confirmed in South Dakota or a bordering county of an adjacent state. ***At this time no emerald ash borer infested trees have been identified in the state or an adjacent county of a bordering state.*** The nearest infestations are highlighted in red; the Twin

Cities of Minnesota; Buena Vista County and the counties in central Iowa and the Omaha-Council Bluff area of Nebraska and Iowa.



This past week I looked over a several block area of Sioux Falls where people were concerned the ash trees may be infested with emerald ash borer. The trees did not have the usual symptoms of a long-term infestation of emerald ash borer as all the canopies were full with minimal symptoms of dieback and decline. There were some watersprouts along the trunks and these are one of the symptoms of emerald ash borer attacks but all these sprouts



were associated with old pruning wounds. Watersprouts are commonly found around these types of pruning cuts.



There were holes in the trunks, but all these were due to the redheaded (*Neoclytus acuminatus*) or banded ash borer (*N. caprea*). These are native insects that generally attack declining or even dead ash. They were rarely noticed in trees before the emerald ash borer came along but now people are more closely examining ash so these insects are drawing attention. The *Neoclytus* adult makes a slightly larger exit hole (about 1/4-inch) than the one constructed by the emerald ash borer. The hole is round to oval and can also appear D-shaped but is usually is not the crisp D-shaped one made by the emerald ash borer.

Timely Topics

While some areas of South Dakota received much needed rains in the last week, much of the state remains dry. Trees, along with all other vegetation, are showing symptoms of severe drought-stress. Here are the symptoms to look for on deciduous and conifer trees.



The symptoms of severe drought-stress for deciduous trees include leaf scorching (margins of the leaf and area between veins turning brown), yellowing, wilting and eventually shedding, beginning first with the oldest leaves and progressing to the youngest if the drought continues. This loss of leaves in some species is a mechanism to survive the severe moisture deficit and three species that have this trait, green ash, black walnut and Ohio buckeye, are already dropping their leaves. Other species, such as cottonwoods and willows, will even shed small branches and twigs and I have seen yards lately that are covered with shed branches from large cottonwoods.

The symptoms of severe drought-stress for conifers include needle browning then yellowing on pines and needle tips turning yellow then red for spruce. Eventually the older needles are shed, and then the younger ones, in fact I am already seeing a number of shoot tips wilting and curling. While these symptoms can be caused by pathogens and pests (as well as herbicide); they can also occur if the shoots are expanding in hot, dry weather. Many spruce are already beginning to decline from the hot, dry conditions as they are the most sensitive to

drought, however, even ponderosa pines, one of our more drought-tolerant trees, is also beginning to show some needle discoloration and loss of the older needles.

What can be done now? Even if your tree is beginning to shed leaves it should still be watered on a regular basis. The buds, tender shoots, fine roots and other parts still require water and continuing to irrigate will improve the chances that the tree will resume normal growth the next year. We are also coming up to the time when trees begin to prepare for winter and a stressed tree is less likely to complete the hardening process and will be more susceptible to winter injury. Watering trees, particularly conifers, *from mid-August through September is critical to their winter survival.* An established tree in the yard should be receiving a slow soaking about once or twice a week for at least 30 minutes and the water should be applied within the radius of half the tree's height. This is enough water to allow the tree to survive under the severe drought conditions found in much of the state. Water is the only resource trees need at this time. Do not fertilize these drought-stressed trees and avoid any herbicide use if possible as the addition stress may further injure the tree.



Damaged trees are a common sight in much of South Dakota after last week's storms. I have been receiving lots of pictures of trees split apart and the most common question is if they can save the tree.

Codominant stems, two upright stems of near equal diameter, are susceptible to failing during strong winds (or heavy snow or ice). While the two stems may appear to be attached, between the V shaped stem union is nothing

more than imbedded bark as the two stems press into one another as they became larger. The stems do not joint together. When subject to heavy loading these often split, sometimes down to the ground.

These long trunk splits are the concern to tree owners who come out after the storm to see half the tree lying on the ground. They wonder if they can just cut off the stem and then bind the split trunk together. Unfortunately this is rarely successful. First, the split



trunk should not have binders, straps or chain to hold it back together. These materials will only girdle the trunk in a few years resulting in the tree dying. The only means of supporting the split is to insert screw rods through the trunk, usually several and never vertically aligned, to provide the support. This is a difficult task to do properly and its best to leave to a professional certified arborist who has the tools and knowledge to do tree repair.

However, even if done properly, the tree may still fail in a few years to a decade or two. The wound is a perfect entry point for decay to begin. It may take years for the decay to progress to the point that the tree fails. I have seen them stand for 15 years, but failure is almost always the outcome.



It is a “berry” good day. I received emails regarding the identification of fruit-bearing shrubs. The first picture shows the common buckthorn (*Rhamnus cathartica*). This shrub is native to Europe and western Asia and was popular as an ornamental hedge plant in the early 1900s. Unfortunately birds drop seeds

everywhere and the shrub (which can reach the size of a crabapple tree) is now a common, but unwanted, fixture in shelterbelts, woods and almost any vacant lot in towns. Not only is it an invasive “weed” but it also is an alternate food source for the soybean aphid and the rust disease, crown rust. The berries will soon turn a glossy black, almost cherry-like, but do not eat them as the effect is described as “sudden and violent diarrhea.” The second picture was of the Tatarian honeysuckle (*Lonicera tatarica*). This is a common ornamental and shelterbelt shrub that also has been extensively planted by birds. The fruit, a bright red berry, form in the leaf axils, not at the terminals, as do many other fruits. This is also a fruit best left to the birds.



E-samples



I am receiving numerous oak gall pictures such as this one showing a fuzzy or woolly looking gall. These one-inch long reddish to whitish galls are formed by the larvae of a tiny cynipid wasp (they do not sting). These cynipid wasps are called ‘cell pirates’ as the larvae inject of growth regulating chemicals into the plant tissue causing it to form this gall around them. The young live inside the galls now

perfectly protected from the environment and predators. Many of the galls form on the twigs, such as the horned oak gall, and others such as the hedgehog gall form on the leaves. Treatment of oak galls is usually not necessary and most attempts at control are ineffective anyway. The lifecycles of these pests are poorly understood and very complex so treatment windows are not well defined.



Lace-like defoliation on a rose can be due to a number of insects, with the most common being the rose chafer (*Macrodactylus subspinosus*). The adult insect is almost 1/2-inch long, pale green to tan and slender. Adults emerge from the soil beginning in late May and can be found feeding on foliage and flowers until mid-July. While the rose

chafer feeds on a wide range of plants, as the name implies they really like roses. They will chew holes in the petals and create a lace-like appearance to foliage as they do not feed on the tougher veins only devouring the soft tissue between them (like cutting off the crust of toast I guess). The adults are slow moving and anything slow moving is very well defended. They contain a toxin that is deadly to birds and chickens. Since eating them is not an option the best treatment is spraying the foliage with an insecticide containing Carbaryl or Malathion when the damage is first noticed. The larvae feed in the soil but are not a major problem in the landscape.

Japanese beetles (*Popillia japonica*) also feed on roses and create the same damage but these insects are only established in a few areas of the state at this time.



A weed picture came in last week and the sender wondered if it was poison hemlock (*Conium maculatum*). However a close look at the picture shows that it is elderberry (*Sambucus*). The difference is poison hemlock will have alternate, bi-pinnately compound leaves that are so finely divided they create a lace-like appearance. Elderberry has opposite leaves that are only pinnately compound with about 5 to

7 leaflets. Poison hemlock stems are hollow between nodes while elderberry stems have a white pith.

Samples received/site visits



Faulk County

What is the problem with this spruce?

It's difficult to tell from the sample. There were no signs or symptoms of insects, mites or pathogen. The current year needles are extremely short and this is usually due to an environmental stress. This stress may be anything from drought to herbicide, but what cannot be determined from the sample.

What

Lawrence County
spruce?

What is causing this damage on Black Hills



This is Lirula needlecast, a fungal (*Lirula macrospora*) disease we rarely see but for some reason it is showing up in samples this year. Unlike most needlecast disease that seem to only infect Colorado spruce, this disease is most common on Black Hills spruce (and not just in the Black Hills, it's a problem on this tree in Minnesota and even Michigan). The other unusual characteristic of this disease is the needles are not cast

very quickly, as the dead needles may remain attached for several years. The disease infects the current year's needles but it's the second year that the raised black line appears on the needle's midrib. This is the spore producing structure which releases spores the following year when the needle is three years old. The most common treatment is applications of a fungicide containing Chlorothalonil when the new needles are about half the length of the mature needles and repeat about a month later. It will take three consecutive years of treatment to significantly reduce the disease.

Minnehaha County

What are these small bumps on the tips of oak?



These are lecanium scales (*Parthenolecanium*). The female scales form brown, hard, round shells around themselves as they feed. Unlike the "bumps" of galls, these are shells, formed from the insect rather than the plant. The term lecanium is just a general term for a number of closely related insects. They all feed by sucking sap from the twigs and heavy populations can remove

enough sap to cause twig and even branch dieback. The simplest treatment is a soil drench of an insecticide containing imidacloprid applied in autumn. This chemical is transported to the twig and will kill the new crawlers or adults the following summer. Imidacloprid should not be used on trees that have flowers that are insect-pollinated or applied to any tree with flowers beneath as the chemical can move to the pollen.

Insecticidal soaps, horticulture oil and common insecticides such as those containing Carbaryl and Malathion can be used to kill the crawlers, the young that hatch in the spring but timing of these sprays is difficult. Also Carbaryl and Malathion treatments may end up killing more of the scale's natural enemies than scales.

Tripp County **Is this Dutch elm disease or verticillium wilt on these American elms?**

Since the samples were mostly wet (so moldy) leaves it is impossible to test for these pathogens. The sample should be taken from a branch that is flagging and the branch, not the leaves are what we test. The branch should be about 1/2-inch in diameter and about 8 inches long. Place the sample in a plastic bag and do NOT add water or moist paper towels (but a dry paper towel will help absorb condensation). The sample should be mailed on a Monday or Tuesday so it will arrive before the weekend.

Union County **What is causing this leaf damage on our oak?**



This is the oak lace bug (*Corythucha arcuata*). Lace bugs, both the nymphs and adults, feed by sucking sap from the foliage leaving small stipples in the leaf surface. The lower surface of these discolored leaves will often be covered with small powdered-like dust, the frass or excrement from the insects. At this time of year most of the damage is done and treatments are probably not warranted. Insecticides containing Carbaryl or Malathion may be used for managing this insect. These should be applied in late spring just after the eggs have hatched and the nymphs begin feeding on the leaves.

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