

Pest Update (August 16, 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



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) following a dry summer. I have seen a few lilacs, crabapples, and even a magnolia starting to bloom with a few flowers this past week. The 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.

Emerald ash borer - Update

This summer's confirmation of emerald ash borer in Buena Vista County in Iowa, a mere 80 miles from South Dakota, has 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 known population in Iowa.



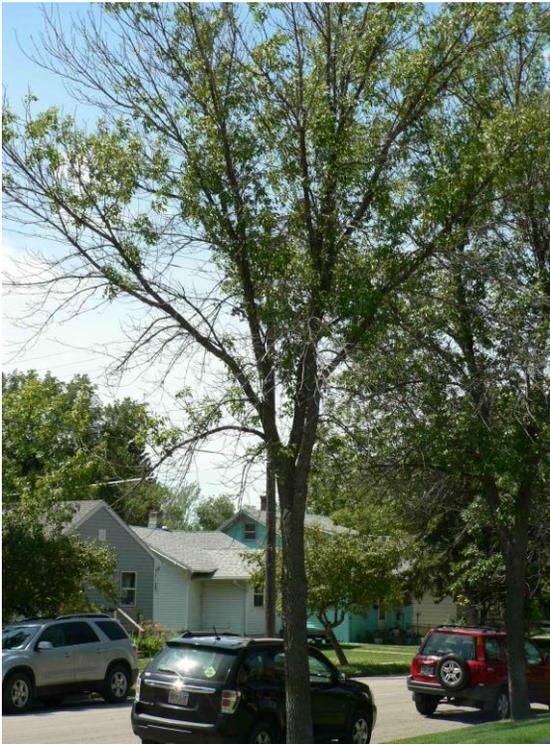
The *Update* will provide weekly information on the location of emerald ash borer confirmed in South Dakota or a bordering county of an adjacent state. ***At this time no emerald ash borer infested trees have been identified in the state or an adjacent county of a bordering state.*** The nearest infestations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

What should we be doing now (before emerald ash borer arrives)

This past we Jon, a SD Department of Agriculture urban forester, and I conducted our annual Dutch elm disease survey in a couple of communities in the northeast part our state. Dutch elm disease is a relatively easy pest to survey. The symptom pattern, yellowing, wilting leaves, is fairly unique and if you

find brown streaking in the sapwood of these symptomatic branches its Dutch elm disease.



Jon and I talked about what it will be like to try to survey for emerald ash borer once it's confirmed in a community. An emerald ash borer survey may be a far more difficult task. First, at least half the ash we saw while surveying for Dutch elm disease had extensive canopy decline, many were more than half dead. Most of the trees had watersprouts along old pruning wounds or branch breaks. Suckers around the base of the trunks were also seen on many trees. These are all common symptoms present in emerald ash borer infested trees and apparently most of our community ash trees already look infested!

D-shape emergent holes are the best sign of an emerald ash borer infestation in a tree, but the holes do not appear along the lower trunk – where they are easily seen – until the tree has been infested for years and is near death.

This means we might be down to looking for woodpecker damage as our only means of distinguishing infested from un-infested trees. This also presents challenges as woodpecker damage (as they strip the bark off looking for emerald ash borer larvae) is generally found on larger trees. I have seen smaller trees (in other states), those less than 20 feet tall, completely infested by emerald ash borer but only a few woodpecker pecks on the wood. Vertical wood splits are common in small trees that are infested with emerald ash borer but I can find splits in ash from frost.

All this means that surveying for emerald ash borer infested trees in a community where we have confirmed its presence is not going to be an easy task. It also means that many ash in our communities are not going to be worth saving with periodic insecticide injections, soil drenches or trunk sprays. Communities might be wise to consider beginning a program of planned removal of their old, declining ash before emerald ash borer is found there.

Emerald ash borer has not been discovered in our state yet. It probably will be within a year or two consider the proximity of infestations in Iowa and Nebraska. But once it is confirmed in a South Dakota community it may be years or even

decades before it appears in more distant communities. This means a community still has time to begin their planned removal of ash. A small community with 300 declining ash street or park trees could plan on removing 30 a year and in 10 years have the task completed and already have new replacement trees established and growing. This is a far better situation than trying to remove the 300 trees within a shorter time period as they become infested. The purpose of planned removal is not that it will prevent emerald ash borer from infesting the ash in a community, but this preempted removal will help spread the costs of removal out over a longer period. Waiting to remove trees once they are infested will mean a community is taking down a lot of trees over a relatively short time period, a very expensive task, plus in communities where the dominant tree is ash, a much depleted canopy cover.

This does not mean we need to start cutting *all* our ash. Again it may be a decade or two before it appears in a community. But now is the time to begin the process of culling out the old, dying ash, the ones that will not be good candidates for treatments once the beetle does arrive.

“Pruning” as a pest



And if emerald ash borer is not enough of a concern, we also have a “bug” that is cutting off large parts of ash trees and reducing the canopy to a few stubs. Jon and I also had an opportunity to see some unique “pruning” of ash trees. This is referred to as topping, a questionable practice of heading back limbs and trunks to a few large stubs. The trees will sprout back, but the long, slender watersprouts are usually

weakly attached and often snap off in a wind storm. The large wounds also provides an entry point for decay pathogens that slowly undermine the stability of the tree. Topped trees often begin to decline within a decade and then people call me and ask what bug is killing their tree. The “bug” is a person with a chain saw and a lift and we have nothing registered for control of them.

Timely Topics

Update on the cedar survey. This past spring and summer I have surveyed new windbreaks that were dying. The blame is typically focused on either 1) the conservation district planted them wrong or 2) the nursery sold them bad stock.

The real reason the trees are dying this year is 1) they were not watered just after planting and 2) no one watered them at all, period. Why people believe trees should survive without water is a mystery to me. If someone did not provide water for their cattle, horses, or dogs (and who cares about cats), they would not call the vet to ask what killed them (maybe they do, veterinarians might find as many people in denial about being the problem as I do).

During the typical springs where we have consistent rains in May and June, you can often get by with minimal watering, but that certainly did not apply for this year. If you did not water, your trees are dead. Interestingly the largest losses are on “cedars” (Junipers), trees known for their toughness and ability to grow almost anywhere whether you want them to or not. However, as seedlings they are sensitive to very wet or very dry soils so are not drought tolerant at this stage in their life. This also applies to most other evergreens and dying seedling spruce and pine are also common sights. The broadleaf trees - e.g. hackberry, oak, maple – seen to be faring better this year. I have seen a number of belts where the loss of the junipers were near 80% yet only 30% on the broadleaf trees.

Herbicide carry-over problems are appearing in young windbreaks. If lack of care, i.e. watering, is not killing the seedling trees than herbicide carry-over is finishing them off. I have seen some new belts where the trees were dead and the problem was Atrazine carry-over from when the field was in corn. Atrazine, Ally, and Tordon are some of the common herbicides where carry-over in the soil must be considered before planting a windbreak. A conservative recommendation is to avoid planting for two years following an application of these herbicides. Two years is a fairly safe time period, but residues may last longer in certain soils. Soil testing may be required in these instances.

E-samples



Why are the leaves falling from my apple tree? A common reason is **apple scab** (*Venturia inaequalis*). This is a common fungal pathogen on apples and crabapples. The disease is generally a problem on the leaves but occasionally I also see infected fruit. The infection begins in the spring with spores ejected into the air from infected fallen leaves. The spores land on the developing leaves and the first symptoms are small velvety, olive-green spots. Later in the season these spots turn dark brown and develop into blotches that cover much of the leaf. The infested leaves also begin to turn yellow and begin to fall by mid-July.

There is not a lot that can be done to manage the disease at this time of year other than rake up the fallen leaves every week. The best treatment is move the tree and plant a scab resistant tree in its place. 'Adirondack', Molten Lava™, and 'Prairefire' are just three examples of scab resistant crabapples. The other approach is begin an annual regiment of fungicide sprays beginning when the buds are just beginning to open in the spring and repeat the treatment every 10 days (every 7 if it's a rainy spring) until after petal fall. That is a lot of spraying and most tree owners are just going to endure the annual display of infected leaves.



Marssonina leaf blight (*Marssonina*) is appearing on quaking aspen and cottonwoods throughout eastern South Dakota. This leaf disease appears as dark brown leaf spots with a faint yellow halos as seen in this picture sent in by Rick, one of the SD Department of Agriculture foresters. The individual spots often are fused at this point in the growing season and now many infected leaves have large black patches covering

most of the leaf. This is only one of many foliage disease on *Populus* and there are also trees infected with *Septoria*, *Venturia* leaf and shoot blight, and *Melampsora* leaf rust. Management for all these diseases is similar, just live with it. While there are fungicide treatments for these diseases, they are rarely used (three applications spaced 12 days apart beginning when the buds open). These diseases rarely cause serious problems for the tree and if we have a dry spring we see very little of them. This year I only see problems in the eastern edge of South Dakota, the region that had rain last spring.



Powdery mildew is showing up this summer in just a few moist, shaded locations. We have not had the spring and summer rains to really drive a major infection from this disease. The most common host is lilac, but I have received a number of pictures of the disease on purple leaved ninebarks such as Diabolo^R (*Physocarpus opulifolius* 'Monlo'). The disease is characterized by a powdery, almost cloudy,

appearance to the leaf surface. Sometimes you can find small black dots in this powder and these are the cleistothecium, fruiting structures, to the fungi. There are many different species of powdery mildew fungi, almost 100 and they cover several different genera. These fungi are very specialized and usually a powdery

mildew species is limited to a specific plant genus. The mildew colonies continue to enlarge through the summer and by early autumn most of the leaves on the plant may be covered with a white powdery material. While the leaf surface appears powdery, the foliage itself may turn yellow.

The simplest management of powdery mildew is to alter the growing environment making it less favorable for the development of the disease. This requires pruning to open up planting beds to decrease night humidity and improve air flow. Fungicides may be used to manage the disease, but are best applied before the problem appears. The picture shows all the leaves at the time completely white and this usually means the infection grew out of the bud. However, fungicide treatments during the summer can protect the remaining foliage, though expect to see some development even with treatments.

Tar spot (*Rhytisma*) is showing up in only a few trees this summer – most of the state did not receive enough moisture this spring to really allow the disease to develop on Freeman, red, and silver maple trees.



The disease began as greenish-yellow spots in late June and then develops into these black tar-like structures we are seeing now. The remaining leaf tissue is sometimes chlorotic. The treatment for the disease is two-fold. First, a common recommendation is to remove and destroy the fallen leaves this autumn to reduce the overwintering fungus, usually not a practical treatment unless you are able to

go through an entire neighborhood. Next year treat the tree with a Bordeaux mixture as the leaves expand and repeat the application about two weeks later. However, if we do not have a wet spring the disease is not likely to be severe.



An interesting gall showing up now is the willow cone gall created by the **willow cone gall midge** (*Rhabdophaga strobiloides*). The adult midge lays an egg on the expanding terminal bud and the feeding by the larva causes this pineapple or cone shaped growth to develop. A single midge larva is inside each cone gall at this time and will form a pupa next spring and then emerge as an adult fly. There is no effective treatment nor does

there need to be as the galls usually only result in some distorted branches.

Samples received/site visits

Clay County

Is this a cotoneaster and the problem fireblight?

Yes to both and a fairly common combination. The plant is hedge cotoneaster (*Cotoneaster lucida*) and the blackening shoot tips that are curled are infected by the bacterial disease fireblight. The hedge should be cut back to about 2 inches tall this winter and the tops destroyed. Generally the new sprouts will come back without the infection and can grow to 2 to 3 feet tall the first season after pruning back.

Day County

What is wrong with this cottonwood? The leaves get spots on them then the leaves turn yellow and fall off the tree.

The problem is Septoria leaf spot. This is a common disease of cottonwoods, particularly seedless cottonwoods, and the symptoms appear beginning in late June. The symptoms are irregularly shaped spots that are light tan in the center and a dark brown margin (as opposed to the faint, yellow margins that occur with Marssonina). By mid-August the ground beneath the cottonwoods becomes littered with the falling infected leaves. Often the only leaves not showing any symptoms are at the top of the tree as the spores “rain” down from infected leaves and twigs.

Pennington County
strange bud.

Is this a willow? It has a



The stems of our shrub willows are often infested with a small fly (*Rhabdophaga strobiloides*) that forms a cone shaped gall at the tips – referred to as the willow cone gall or sometimes as the pine cone gall. I was able to pull the larvae out of the gall submitted as a sample. There are no treatments for this pest other than to remove and burn infested tips. More information is above in e-samples.

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