

Pest Update (June 17, 2013)

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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/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.

Timely topics

Plant development.....	2
What to treat now	
Spruce bud scale.....	2
Spruce needleminer.....	2
Information you can use	
Why are spruce dying across the state?.....	3
Dutch elm disease symptoms are appearing.....	4

E-samples

Apple scab.....	4
Cottonwood petiole gall.....	5
Leaf blotch disease of buckeye.....	5
Procerum root disease of white pine.....	5

Samples received

Stanley County (drought stressed spruce).....	6
Yankton County (dying maple).....	6
Yankton County (dying evergreens).....	6

Timely Topics



Plant development. We are still way behind in plant development from most years. This week the hawthorns are nearing the end of their bloom and the black locust are just beginning to bloom in Brookings; about a month behind last year and a maybe two weeks later than normal. Unless the weather turns warm soon see may not see catalpas in bloom until the beginning of July!

Treatments you should have done by now or very soon



Spruce bud scale crawlers are 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 – meaning very soon. The time to control them 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. Control is usually with a pesticide containing carbaryl as the active ingredient and labeled for this use. The trees should be treated this week as the adults begin to take flight.

Information you can use

The overwhelming questions this past month were; *“Why are my spruce dying? What disease is killing all the spruce in the state? What can I spray?”*



The cause for this concern is the widespread dieback and decline of spruce, particularly Colorado spruce throughout almost the entire state. The typical call is regarding a tree belt of mature spruce, usually 20 to 30 years old, in which some trees are almost bare, others have a few or more branches that have discolored needles or are dead and some other trees in the belt appear healthy.

The caller or email always mentions that it must be a new disease since 1) the problem just showed up this spring and 2) not all the trees in the landscape or tree belt are dying.

Apparently the fact that the state was in a severe drought from the summer of 2011 to just recently appears to have been forgotten. Also forgotten is the fact that the winter of 2011-2012 was very mild and dry, wonderful for people (unless you are a skier) but hard on evergreens. The trees were already suffering a water deficiency going into that winter and the dry, warm weather (one of the warmest and driest on record) resulted in more water loss. The following spring, 2012, the conditions did not improve and the spring and summer were hot and dry.

Colorado spruce is native to a region where climate is cool and humid. The mean maximum July temperature is 72°F and the annual precipitation is 18 to 24 inches. How does that compare to our South Dakota weather the past two years?



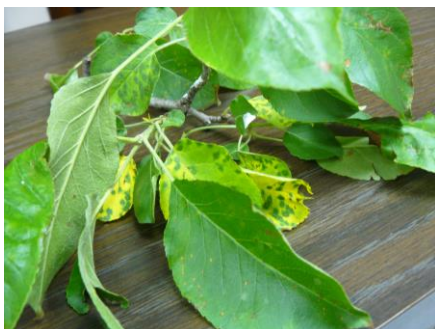
The picture to the left is a perfect example of what has been occurred. The shoot growth on spruce in the east-central part of our state is often between 7 and 9 inches, last year it was often less than 1 inch. The shoot in the photograph has ¼ inch of shoot growth in 2012 and 3 inches in 2011. This is much less than normal for spruce – an indication that the tree was very stressed for the past several years.



Dutch elm disease is beginning to showing up across the state. The symptoms of Dutch elm disease are wilting and browning leaves, often throughout the canopy but sometimes restricted to the length of an individual branch or limb. They trees expressing symptoms now were probably infected last year or even several years ago, sometimes by root grafts with near-by DED-infested trees that were not promptly removed. These early expression of symptoms are not usually due to new infections carried in by beetles. The symptoms of new infections started by beetle-carried spores generally occurs in July and are often limited, at least initially to the leaves at the tips of branches turning yellow and

wilting. Bark beetles and root grafts are the primary means by which the fungus spreads from host to host. The most effective community-wide effort is to quickly identify and remove DED-infested trees. The sooner infested trees are removed, the less likely the surrounding healthy elms will become infected. Individual, healthy trees can be protected from the disease by root-flare injections of either Arbortect or Alamo fungicides though these must be repeated every two to three years.

E-samples



Apple scab samples are also still coming in. The apple scab infection occurred during the spring, conditions were perfect for infection as much of May was cool and moist. While the infection occurred then, the disease does not really begin to show symptoms until now. The control time period started more than a month ago beginning when the buds were first beginning to open and no fungicide spray will

correct the damage now. However while these infected leaves will begin to fall soon, the trees should still be watered to prevent further dieback and decline.



Just about every year I receive samples of fallen cottonwood leaves with a “bump” at the base and the first one for this year was from Winner. This is the **cottonwood petiole gall** formed by the feed activity of a very small green aphid. The insects begin feeding on the leaves in the spring and this galls forms around them. The aphids usually mature by July and the winged adults emerge from the galls and fly to another host. The damage from this insect is

a nuisance – who wants to rake in August – but it does not harm the tree. The fallen leaves do not need to be burned; the insect has already left, so leaving these leaves will not increase the problem next year. An application of dormant oil can be applied on the tree to kill the aphids before they move out from their overwintering sites in the bark fissures on the tree.



Leaf blotch on buckeyes is also putting out its annual appearance. 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 and horsechestnuts. The disease, caused by the fungus *Guignardia aesculi*, results in reddish brown blotches on the leaves that often have a yellowish margin. The blotches continue to expand as the season progresses with the entire leaf often becoming

brown by late summer/early autumn and dropping prematurely. The disease is easy to confuse with scorch, particularly this hot, dry summer but tiny black specks of pycnidia may be seen with a hand lens though they are not as easily seen or found this summer. Scorch is usually more common on the sunnier, windy side of the tree while blotch will be found throughout the tree. Probably the best means of separating the two leaf problems is that leaf blotch occurs in the leaf, which scorch is often limited to the margins of the leaf.



but that work will begin soon.

We received some pictures and samples of eastern white pines with what may be **procerum root disease** caused by *Leptographium procerum*. I say “may” since this diagnosis is based on symptoms and discussion with other forest health specialists in the region that have seen the disease. We have not yet found the pathogen in the sample. The symptoms of the disease are red-brown

needles that wilt and hang from the branches for a short time period. These branches may also have small, dark blotches of resin and resin may be flowing near the base of the trunk. There is also a blue-black stain in the sapwood. The disease is most common in white pines that are stressed, usually those in poorly-drained soils, but drought can also serve as the stress agent. There is no control for the disease other than remove infected trees and cut them flush with the ground. The disease is spread by insects, primarily weevils so it is important to remove the entire tree to avoid transmission from the stump by these insects.

Samples received

Stanley County FL1300010 **The spruces in the yard are looking poor. They have watered on a regular basis as well as fertilized.**

Unfortunately this is just (or at least mostly) drought stress. The sample showed much reduced shoot growth during the past two years and this has been a common pattern with the drought/heat stress that has been appearing on spruce.

Yankton County FL1300011 **This Norway maple is dying, more than half the canopy has wilted. The maple next to it looks just fine.**

The picture shows the classic symptoms of verticillium wilt, a soil-borne fungus that is responsible for the loss of ash, catalpa, elm and maples in the state. Some infested trees linger on for decades with the disease with just a branch or two dying back every year. Other trees wilt and die within a season. The sample was too small to really isolate the pathogen so the diagnosis of verticillium is an “educated guess” but I will say this wilt disease is blamed for more tree death than it causes since wilting and dieback are symptoms common to many other stresses. The tree is too far gone to recover whatever the cause so remove it and, just to be safe, do not replace it with an ash, catalpa, elm or maple. Oaks do not seem to be affected by the disease and are a good choice for planting.

Yankton County FL1300013 The grove has dead and dying blue spruce, eastern white pines and Scotch pine. What is happening?

The deciduous trees appear to be doing fine and based on the pictures and samples it appears that there are three different problems going on. First, the spruce appears to be drought-stressed (see information above on this condition), the white pine may have the procerum root disease mentioned above, however we would need to collect a sample to be certain, regardless of the wilting, these trees will need to be removed. The Scotch pine appears to be infected with pine wilt and we will need to collect samples to be certain of this diagnosis but the control is prompt removal to reduce the chance of infection for the other healthy appearing Scotch pine. The white pines and Scotch pines that are wilting should be cut flush with the ground and the wood destroyed.