Pest Update (July 6, 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.

Plant development

We are right on schedule for plant development this year, maybe even a little ahead. The smoke trees are blooming in Brookings just about on schedule. During cooler summer they often bloom in the middle of July.

Timely topics

The "growing" story is the wide-spread drought that is intensifying across much of South Dakota. While it was a nice spring in much of the state, mild and moist, it seems that the spigot was shut off sometime in May or June. We are now beginning to see trees and shrubs under moderate to severe drought stress.

The most common symptoms for moderate moisture stress are leaves turning a lighter green than is typical for the species. Affected leaves also are showing brown and crisp margins and often browning dips beyond the margins along the veins. Some trees in the southwestern part of the state are already having the leaves curl and fall, a symptom of severe stress. Eventually trees showing severe moisture stress will begin to dieback.

The symptoms for drought-stressed conifers, particularly seedlings, is yellow to almost purple needle tips. Some of the older needles on drought-stressed trees, those that formed three to five years ago, are beginning to drop prematurely.

The only treatment now is WATER. This is particularly important for new planting, whether they are seedlings in a new windbreak or a tree just planted in a yard. A seedling will need between a pint and quart of water per day while a newly planted 10 to 12 foot tall tree will need about 2 gallons per day at this time. Most young tree belts are probably not receiving anywhere close to this amount and I suspect there will be a lot of replanting next spring particularly in the western part of the state.

Established trees will not need daily watering, but still require weekly watering to survive this dry, hot summer. A 2-inch diameter tree (measured at 6-inches above the ground) should be receiving about 20 gallons of water a week and this is best applied slowly with a soaker hose placed near the tree. Tree roots typically extend out as far as the tree is tall but the critical watering zone is a

distance out about 2/3's the height. As an example, if the tree is about 24 feet tall, the watering should occur within 16 feet of the trunk.

I always receive questions about cottonwood shedding small branches and twigs about this time of year. A common reason for this abscission, a process called cladoptosis, is usually in response to changes in the environment, typically the weather changing from moist to hot and dry. If you look closely at the base of these fallen branches you'll notice there is a well-defined abscission zone, rather than a shredded tear that would characterize a branch or twig broken off by strong winds. The phenomenon is most common on mature cottonwoods and poplars. Usually the twigs start falling about the end of June and this can continue through September. Just a little more raking.

Codling moth (*Cydia pomonella*) is not the most common apple pest in South Dakota but we still see lots of fruit in the eastern part of the state infested by this small worm. Codling moth damage is visible on the surface of the apple. There will be "stings", a shallow hole or depression where the larvae started to burrow but died or moved to another location. There will also be crisp holes in the fruit. These are entry holes where the larvae began to tunnel into the fruit. There will also be exit holes where the larvae left to drop to the ground. These will often have powdery golden-brown frass near the surface. If you cut into the infested apple you'll find a small worm with a pinkish body and a brownish head. The larvae start out fairly small, less than 1/8 inch but grow to be about 1/2 inch before exiting the fruit. The tunneling is concentrated near the core as the developing larvae like to feed on the seeds. At this time of year there is not much that can be done other than removal all infested fruit from the tree. This can reduce the number of larvae that drop to the ground to pupae and become adults.

E-samples

A common call at this time of year is the small "bumps" on maple leaves. These small greenish bumps that appear on the upper side of the maple leaf are the work of the maple bladder gall mite (*Vasates quadripedes*). The galls turn red and black. You can find all three colors on some leaves, kind of pretty when you think about it. A leaf can be covered with them, almost completely, yet the tree suffers little harm from the mite infestation (other than it looks ugly). There are almost no real effective treatments for this pest, and some treatments such as oil sprays just before bud-break can actually do more harm to the maple than the mite.

Another common call about bumps is the **hackberry nipple gall**. This is not caused by a mite as with maples, but a very small psyllid insect, the hackberry nipple gall maker (*Pachypsylla celtidismamma*). The adults overwinter in bark cracks and crevices along the warty bark of the hackberry tree. The adult move out to the expanding leaves to lay eggs. The nymphs hatch in about 10 days and begin feeding on the underside of the leaf. This causes the leaf tissue to form a pouch around the insect as they feed. The galls do not harm the tree at all, even if an entire leaf is covered with them.

I received a great cell phone picture of galleries in a dying American elm. The elm was being removed due to the "X of death" for Dutch elm disease (*Ophistoma novo-ulmi*). The first symptoms of the disease are branches with leaves turning yellow and wilting. Affected leaves can remain attached to the branch for several weeks, often turning an ash-gray before dropping. If the branch showing these symptoms is removed and the bark peeled back, you'll usually find green to brown streaking of the sapwood. The disease is carried to a healthy elm by several different bark beetles. The smaller European elm bark beetle (*Scolytus multistriatus*) has the larval galleries branch off from the main tunnel but the larvae galleries do not cross or meander as they frequently do for the banded elm bark beetle (*S. schevyrewi*). The smaller European elm bark beetle is the most important vector for Dutch elm disease in our state.

Samples received/site visits

Butte County **Is this tree dying? She wants to kill it, he wants to keep it.**

Ah, the task of a horticultural marriage counselor! The tree is an eastern redcedar and the problem is cedar apple gall. It will not kill the tree, but does make it look ugly. However, since beauty is in the eye of the beholder I'll sidestep this issue.

Lake County **What is wrong with this crabapple?**

The yellowing, browning, wilting leaves appear to be due to fireblight (*Erwinia amylovora*). There are very few effective treatments for managing this disease. When most of the tree is affected its best to remove it and plant another one. There are many lists of crabapples that are resistant to this disease, 'Kelsey' and 'Prairifire' being two good examples.

McCook County **What is causing the dead shoots in the Rocky Mountain juniper?**

This is phomopsis (*Phomopsis juniper-ovora*), one of the fungi associated with juniper blights, as evident by the small black, pimple-like structures that are the fruiting bodies on the needles. Typically the foliage tips begin as a reddish-brown and then turn an ash-gray as the season progresses. We see more problems with Rocky Mountain juniper East River due to the higher humidity. The wet spring was perfect for the development of the disease and I expect to see more samples of this disease as the summer progresses. It is too late for treating the disease this year. Phomopsis can be treated with fungicides containing copper, mancozeb or propriconazole at 14-day intervals beginning in mid-May and continuing until growth ceases or dry weather begins.

Minnehaha County **What is wrong with my blue spruce?**

There were two samples submitted and between the two trees almost every pest or pathogen was found; spruce spider mite and spruce bud scale for pests, cytospora canker and stigmina needlecast for pathogens. This is a common occurrence on Colorado spruce due to its popularity in the landscape. Stigmina needlecast (*Stigmina lautii*), is probably the problem which needs to be treated starting next spring. A fungicide containing chlorothalonil should be applied when the new growth begins to expand then every 10-days through August. Treat the entire canopy, not just the lower branches.

Roberts County **What is causing the black spots on the pear leaves?**

This is pear scab (*Venturia pirina*) a closely related disease of apple scab. The symptoms are blackened leaf margins that soon engulf the entire leaf instead of the olive-drab spots and blotches that occur on apples. I expect to see more samples of the disease since the wet spring was ideal for development of the disease. It is too late for treatment this year, but most general fruit tree sprays will control the disease if applied in early spring as the leaf buds are starting to expand.

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