Pest Update (September 9, 2015)

Vol. 13, no. 29

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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/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.

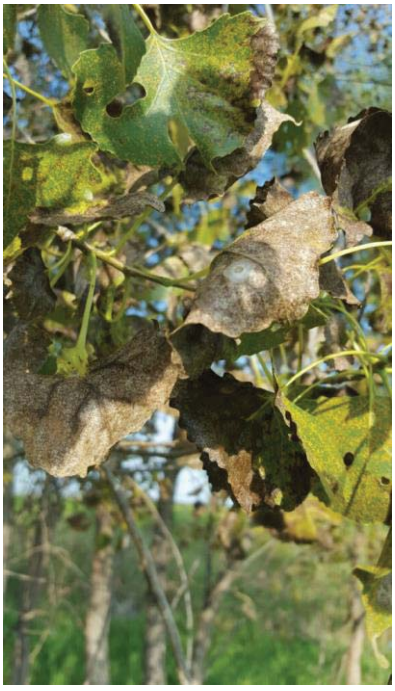
Timely topics

Why are the leaves discolored and falling off my aspen, cottonwood or poplar tree?

It's not a great year to be a cottonwood or poplar tree. I have been receiving many phone calls and emails regarding the appearance of these trees from across the state. The concern is that so many leaves are discolored, curling and

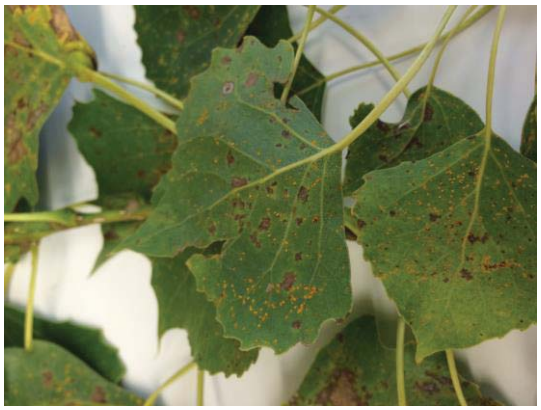
falling that they are worried the tree will die. Fortunately this is not the outcome for the majority of these trees. The problem, or better stated as problems, are leaf diseases and the injury is limited to the foliage.

The wet spring we experienced throughout the state was the perfect incubator for foliage disease. Many of these diseases require the leaf tissue to stay moist for several hours or more for the spores to germinate and penetrate the leaf tissue. Once inside the leaf the fungus develops and begins to degrade tissue. This degradation does not produce visible symptoms until midseason so people are often surprised to find they cannot treat the disease when the symptoms appear. Treatments must be initiated when the leaves are beginning to develop as our fungicide protect tissue from becoming infected. They do not affect the pathogen once it has penetrated the cuticle of the leaf (note: they are exceptions. We have a few fungicides that are systemic and can be used to kill the pathogen once inside the tree and we have a few that can also penetrate the cuticle and kill the pathogen as it begins to develop but there are very few that do this and they are limited to specific diseases and hosts).



One of the most common foliage diseases of cottonwood this year has been **septoria leaf spot** *(Mycosphaerella*). This disease causes leaf spotting and may also result in canker. The symptoms vary somewhat with the host. The typical foliage symptoms are small, circular to angular, gray to brown spots with a dark border. These spots will have small black dots in the gray center. The spots enlarge and coalesce to form blotches. However, on some trees the spots remain small and distinct. Stem cankers only occur on trees that have large spots; the larger the spots, the more likely cankers will develop. The cankers appear on shoots as flat face with a swollen margin but these can become enlarged over time. Other canker diseases such as Cytospora can invade the edges of septoria cankers and this infection can result in dieback and decline of the tree. Septoria can affect all cottonwoods and poplars but is a more common, and serious, disease on the hybrid poplars rather than our native plains cottonwood.

The symptoms of septoria leaf spot are similar to those of **Marssonina blight** (*Marssonina*). The difference is leaves infected by marssonia develop dark brown flecks with a yellow margin or halo, rather than blotches with a dark margin. However, there is quite a bit of overlap between the symptoms of the two diseases so sometimes the only way to tell is a little lab work. Marssonina is more common on aspen than cottonwood and poplars and this can also be used as a diagnostic clue. This disease only occurs on the foliage so it less of a threat to the tree's health than septoria. We are see a lot of this disease due to the wet spring.



Finally, there is also **Melampora rust** (*Melamspora*) that occurs on cottonwoods and aspen. The symptoms for this disease are small pustules of red to yellow spores on the underside of the leaf. Eventually the leaf turns yellow or brown and drops prematurely. The disease has a complex life cycle and can alternate between hosts. Fortunately it is also only a leaf disease and is not a serious threat to the tree's health.

E-samples

Oak leaf blister (*Taphrina*) picture (and sample) was provided by Nicole, a forester for the South Dakota Department of Agriculture. She collected the sample in the Black Hills. This is a similar disease to bur oak blight which was discussed in last week's *Update* and also oak anthracnose (and anthracnose also appeared on these leaves). The symptoms to the oak leaf blister are blisters and budges in the leaf that continue to enlarge and coalesce by mid to late summer. As with many of the foliage disease, infection took place in the spring as the leaves were beginning to open but the symptoms are not noticed until now when most of the leaves are affected. The disease is unsightly, but not a serious threat to the tree unless the tree is repeatedly defoliated. Usually we do not have the spring weather conditions, cool and wet, to cause two or three years of defoliation.

Hedgehog galls are also appearing on bur oak leaves. These galls are the result of the feeding activity of a cynipid wasp, actually it's the kids, not the adults that do the damage (no different from people I guess). The larval feeding stimulates the leaf to form this gall that provides protection and food for the developing larvae. The life cycle and even the species that cause these galls is not well known so no treatments are really even effective. The galls are more a curiosity, than a problem.

Samples received/site visits

This was an interesting stop in Aurora County. A producer had a new belt of lindens that about half were dead and the remainder were suffering dieback. The nearby rows of Amur maples had some leaf injury and the coffeetrees had no injury at all. The question was why did the lindens die?

Of course, the easy answer is 1) poor stock or 2) the District planted them wrong but these are rarely the problem. Stock quality is generally very good and the Districts know how to plant trees so while these possibilities that have to be considered, I often have to look further to find the problem.

The symptom pattern is often very telling and in this instance the lindens had leaves showed chlorotic mottling and distorted tips. Interestingly only the older foliage was showing these symptoms while the new foliage was normal. Lindens are among the first trees to leaf out and unlike many other species they will continue to form new leaves during the growing season rather than have a single flush. Maples leaf out a little later and coffeetrees are one of the last trees to leaf out.

The producer had used Moxy herbicide this spring to kill wormwood in the belt. Moxy (bromoxynil) is a photosystem inhibitor that is effective on actively growing broadleafs. The symptoms on the foliage are consistent with herbicides having this mode of action. Since the other species were not leafing out yet they would escape injury as well as the newer leaves on the lindens. There were also mature honeylocust aside the belt that were also showing distorted leaves.

These trees also tend to leaf out early and legumes, such as honeylocust, are sensitive to bormoxynil. Herbicide drift is the problem here, not the planting.

This publication made possible through a grant from the USDA Forest Service.