
From: K-State turf information [K-STATE_TURF@LISTSERV.KSU.EDU] on behalf of Megan Kennelly [kennelly@K-STATE.EDU]
Sent: Saturday, September 19, 2009 4:45 PM
To: K-STATE_TURF@LISTSERV.KSU.EDU
Subject: [K-STATE_TURF] K-State turf: foliar diseases of trees and shrubs
Attachments: Sept19.jpg

Hello,

Attached is a jpg file with some images of foliar diseases of trees and shrubs.

Not much turf news this week.

I still can't make pdf files, so I'll try the jpg method again. Computer issues are almost resolved, but not quite... One person said that the jpg last week caused the email to go straight to the junk/spam folder, but maybe it was my writing and photos that were labeled and filtered as "trash" :)

Venture below the dashed line only if you are brave and in the mood for some potato pathology and quarantine pathogens.

Potato wart?

This is for the pathology fans out there who were wondering why (as I mentioned in the email last week) I spent 2.5 days learning about potato wart:

I spent much of this week at a workshop for a potato disease called potato wart. Along with turf and ornamentals my job responsibilities also include fruit and vegetables, and we do have some potato production in Kansas.

The potato wart pathogen, *Synchytrium endobioticum*, is not known to occur in the US, and if we ever did get it, there would be major implications for international trade for our potato crops. That is, other countries might stop buying our potatoes.

So, potato wart is one of the diseases that the people at the US Dept of Ag-Animal and Plant Health Inspection Service (APHIS) works on. Within APHIS we have the Plant Protection and Quarantine (PPQ) and the Center for Plant Health Science and Technology (CPHST).

Is that enough alphabet soup for you?

I was at a CPHST facility near Washington, D.C. where they work on pathogens of quarantine or other regulatory significance. For example, some of the other diseases they work on are sudden oak death (present on the west coast, and we'd like to keep it from spreading elsewhere), *Ralstonia* wilt of geraniums (which is a potential threat to commercial potatoes), and citrus greening (present in Florida but NOT in California).

At the CPHST building, the potato wart pathogen (and the rest of the nasties) are kept in secure labs with lots of safety precautions. It is kind of like the Centers for Disease Control (CDC) but for plant pathogens instead of human pathogens. People need to research this stuff, but we don't want it just floating around out there. The brand new Biosecurity Research Institute at K-State houses similar labs, and the incoming NBAF (National Bio and Agro-Defense Facility) will house even more tightly controlled labs.

The group of us present for the training learned about the biology of the disease, how to id the symptoms, how to id in the microscope, and then we went through a DNA-based technique to identify the organism. So, we extracted DNA and did some other procedures to ID it. There are some important quality controls to include in the testing. It's kind of like the DNA testing that might be done at a crime scene. It is important to avoid both "false positives" and "false negatives" because there can be very bad consequences of both.

Here's a link that describes some of the trade issues/politics due to potato wart in Canada:

<http://www.uiweb.uidaho.edu/ag/plantdisease/pwart6.htm>

And, here is a ton of information about potato wart:

<http://www.apsnet.org/online/feature/potato/>

Congratulations if you ventured below the dashed line and read all this! Two bonus points.

K-State Turf, Sept 19th

There's not much to report on the turf disease front except a few more cases of large patch symptoms in various sites.

As I've mentioned numerous times, the wet weather in many areas this year has led to an abundance of foliar leaf spots on shrubs, trees, and other ornamentals. Here are some examples in the photos below. For the most part, trees and shrubs are pretty tolerant of some defoliation, and one 'bad' year will probably not hurt the overall health.



Mycosphaerella leaf spot of ash has defoliated much of the tree canopy (left) The close-up above shows individual leaf spots



This row of hawthorn was defoliated by rust

Rose black spot. A common sight here, but more severe this year due to rain



Rose rust—upper side of leaf.



Rose rust, lower side. Rose cultivars differ widely in their susceptibility to rust.