



# Pest e-alerts



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## Wheat Disease Up

Bob Hunger, Extension Wheat Pathologist



This likely will be my last OK disease update for a while as diseases have mostly “run their course” in Oklahoma and harvest has started. However, I wanted to provide a follow-up on the late season root rots we saw at several locations across northern Oklahoma. Symptoms and a description of the setting in the field all pointed to take-all in several of the samples, and Jen Olson in the Diagnostic Lab and I did find visual signs of the take-all fungus. With further examination, Jen found lesions indicative of *Rhizoctonia* root rot, and subsequently, she isolated *Rhizoctonia*. In another sample with whiteheads that to me appeared to be take all, Jen isolated *Parastagonospora nodorum* and *Fusarium* (most likely *acuminatum* as indicated by DNA sequencing). In a third sample in which roots appeared clean but the lower stems were discolored, Jen isolated *Rhizoctonia*, but also more commonly *Fusarium* (again most likely *acuminatum*), *Curvularia*, and *Parastagonospora*. Likely some of these were secondary. So, the exact cause of the whiteheads is somewhat uncertain with *Rhizoctonia* root rot, take-all, and perhaps some *Fusarium*-induced root rot all involved.

**Reports/excerpts of reports from other states:** Just to let you know, stripe rust appears to be a major disease up through the northern Great Plains and into the mid-east as indicated below. In many of these states, producers are facing the dilemma of needing two sprays – one to control early season stripe rust and another at flowering to help suppress *Fusarium* head blight (scab). We faced a similar dilemma here in Oklahoma but with an early application to control early season stripe rust and then perhaps a later one to control later season foliar diseases and or scab (in eastern/north-eastern OK). All with low wheat prices, but without the fungicide yield and quality (test weight) would be hurt as with what happened last year.



**North Dakota:** Dr. Andrew Friskop (Ast Professor/Cereal Extn Pathologist); North Dakota State University; May 23, 2016: “Stripe rust was confirmed in two counties in North Dakota on May 23. One sample was from a winter wheat research plot near Fargo (Cass County), and the other was from a winter wheat variety performance trial in southwest ND near Hettinger (Adams Co.). This is approximately 10 days ahead of when stripe rust was detected in North Dakota last year. Given the susceptibility in popular spring wheat and winter wheat varieties, growers will be encouraged to scout especially with rain and dew in the forecast.”



**Ohio:** Dr. Pierce Paul (Asso. Professor); Ohio State University; May 24, 2016: “Stripe rust (Figure 1) continues to spread across the state of Ohio. This is the most widespread and the earliest I have seen this disease in the state in 13 years. Several varieties in fields south of interstate 70 and west of interstate 71 are severely affected, with substantial damage to the flag leaf well before flowering in multiple hot spots in some field. As we approach flowering in more northern counties, the reports continue to come in. Several fields have already been sprayed for stripe rust, but the dilemma facing most growers is whether to spray for stripe rust or wait to spray for scab in fields not yet at anthesis.”



*Figure 1: Severe stripe rust in Ohio – Dr. Pierce Paul*



**South Dakota:** Dr. Emmanuel Byamukama (Asst. Professor/Extn. Spec. – Plant Pathology); South Dakota State University; May 27, 2016: “I scouted several winter wheat fields this week in East (Codington, Clark), Central (Beadle, Hyde, Hand, Hughes) and West (Stanley, Jackson, Pennington) South Dakota and I found stripe rust in almost every field I scouted. The majority of these fields have stripe rust just starting while a few have moderate to severe stripe rust (Fig. 2). Winter wheat is beginning to head and a few fields are at flowering. With more rain in the forecast, a fungicide may be necessary to manage stripe rust. The challenge is going to be needing another fungicide shortly for scab management. And with the wheat prices not encouraging, producers are concerned applying 2-3 fungicides in winter wheat this season.”



*Figure 2: Severe stripe rust in South Dakota – Dr. Emmanuel Byamukama*

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## Sugarcane Aphids Are Present in Oklahoma

Jessica Pavlu, Graduate Research Assistant,  
and  
Tom A. Royer, Extension Entomologist

Last week, we conducted a survey of Johnsongrass in Atoka, Coal, Pontotoc, Pottawatomie, Lincoln and Logan Counties. Sugarcane aphid was collected in Atoka, Coal and Pontotoc counties. Not surprisingly, we also found yellow sugarcane aphid in all but Logan county, and greenbugs in all but Pontotoc and Lincoln counties. There is no need to panic, but we want to make sure that sorghum producers are aware that the sugarcane aphid is already in Oklahoma.

The sugarcane aphid is light yellow, with dark, paired “tailpipes” called cornicles and dark “feet” called tarsi. The yellow sugarcane aphid is bright yellow with many hairs on its body and no extended cornicles. The greenbug is lime green with a darker green stripe down the middle of its back and has dark tarsi and only the tips of the cornicles are black; the corn leaf aphid is olive green with a dark head and legs (Fig. 3).



**Sugarcane aphid**



**Yellow sugarcane aphid**



**Greenbug**



**Corn leaf aphid**

*Figure 3: Different aphids found in Oklahoma.*

Once sorghum has emerged, it is critically important to check their fields and scout accurately. Do not spray until suggested thresholds are reached, and apply the spray with the highest amount of water carrier as possible (5 or more gallons/acre by air, or 10 or more gallons/acre by ground) as spraying too early and with inadequate coverage may require a second application from aphid recolonization.

The current recommendation for control of sugarcane aphid is ***to treat if 20-30% of plants are infested*** (an infested plant has at least one colony of aphids). Consult CR-7170, *Management of Insect and Mite Pests in Sorghum* for suggestions on other registered insecticides.

Two insecticides are registered for control of sugarcane aphid that are effective. Sivanto received a Section 2ee registration that allows producers to apply it at 4-7 fl oz per acre. Oklahoma obtained a Section 18 Emergency Exemption label for the use of Transform WG that is in effect until April 8, 2017. It is registered for application at 0.75-1.5 oz./acre. For pollinator protection, it may not be applied from three days before bloom through seed set.

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## **'Voluntary' Ban of Phosphite and Propiconazole Fungicides on Peanuts**

John Damicone, OSU Extension Plant Pathologist

Peanut growers and those who work with the peanut industry as old as myself will remember that Lasso (alachlor) herbicide was registered for use on peanuts in the 1990s, but could not be used because of residue concerns by peanut buyers and manufacturers. This was an early example of industry concerns trumping EPA pesticide regulations. Despite directions for use on the label, and the adage that "the label is the law", peanut growers had to sign a waiver stating that they would not use Lasso on their peanut crop. Lasso essentially was lost to peanut producers as I am not aware of alachlor, now labeled on peanuts as Intrro, being used on peanuts. Fortunately, peanut farmers have had alternative weed control products such as Dual (metolachlor) and Outlook (dimethenamide-P) with similar weed control activity.

A similar 'voluntary' ban on fungicides is now being faced by the peanut growers in response to concerns about pesticide residues found on peanuts in the European Union (EU). The EU is a customer for exported US peanuts, particularly Virginia types. Phosphorous acid is registered for use on peanuts and other crops to control diseases caused by water molds including *Pythium*, *Phytophthora*, and downy mildews. Formulations with peanuts on the label include Agri-Fos, Fosphite, Rampart, KPhite, and ProPhyt. Peanut growers in the Southwest US began using phosphorous acid for control of *Pythium* pod rot (Fig. 4) based on our research at OSU several years ago. Tim Brenneman at the University of Georgia first



Figure 4: *Pythium* pod rot on virginia-type peanuts.

identified activity of phosphorous acid on *Pythium* pod rot in research conducted in Nicaragua before that.

Phosphorous acid ( $H_3PO_3$ ) and the related fungicide Aliette (Fosetyl-AL or aluminum phosphite) both break down into phosphite ( $PO_3$ ) when taken up by the plant. The EPA currently considers phosphite a fertilizer and GRAS (generally regarded as safe) and has never set a residue tolerance for it on crops. However, phosphite apparently provides little if any phosphorous (P) nutrition to plants. Phosphate ( $PO_4$ ) provides P nutrition in plants. It is not clear why the EU is concerned about phosphite residues in nuts, but because there is no tolerance set, their default value is 2 ppm. They began testing Almonds, Pistachios, and Walnuts imported from the US for phosphite residues in 2014 and levels above 2 ppm were found. Phosphorous acid is used in the production of tree nuts in California for control of *Phytophthora* root rot. They set a temporarily higher tolerance for the 2014 crop but it reverted back to 2 ppm in 2015 when they expected that phosphites would no longer be used on tree nuts exported to the EU. Similarly, they began testing peanuts in 2015 and found levels above 2 ppm.

Propiconazole is one of the oldest triazole or Group 3 fungicides registered on peanuts and other numerous other crops. It is marketed alone as Tilt, PropiMax, or Bumper. It is also sold in combo products such as Stratego (+ trifloxystrobin) and Tilt/Bravo (+ chlorothalonil), which are commonly used on peanuts for control of leaf spot (Fig. 5). Apparently the EU no longer accepts the current method for measuring propiconazole residue as valid and expects that the fungicide will no longer be used on peanuts exported into the EU until the issue is resolved. The tolerance (maximum allowable residue level or 'MRL') will have to be reset based on methods accepted by the EU, which will apparently take time and considerable expense.



Figure 5: Early leaf spot on peanuts.

Several major peanut shellers in the US required that growers sign a waiver pledging that they will not use products containing phosphorous acid or propiconazole on their peanuts in 2016. Alternative products for control of *Pythium* pod rot are limited to metalaxyl (MetaStar and Ultra Flourish), metalaxyl-M (Ridomil Gold), and azoxystrobin (Abound and generics). Unfortunately, use of metalaxyl products for *Pythium* pod rot will increase the cost of production of Virginia peanuts in Oklahoma. Abound has not provided adequate control of *Pythium* pod rot recently and led to grower use of phosphorous acid in the first place. There are good alternatives for Tilt/Bravo and Stratego for leaf spot control. Bravo can be tank mixed with tebuconazole (one of several generic Folicur formulations), cyproconazole (Alto), flutriafol (Topguard), or tetraconazole (Eminent). A premix formulation of chlorothalonil + tebuconazole (Muscle ADV) and a co-pack of chlorothalonil + tetraconazole (Echo/Eminent Co-Pac) are also registered for use on peanuts. Alternative products for Stratego on peanuts include fluoxastrobin + tebuconazole (Evito T) and trifloxystrobin + tebuconazole (Absolute). Consult the 2016 OSU Extension Agents' Handbook of Insect, Plant Disease, and Weed Control

(Circular E-832) for more information on application rates and disease control pointers for peanut production.

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## Canola Disease Update

John Damicone, OSU Extension Plant Pathologist

Diseases appear to have had a minor impact on canola once again in 2016. However, two diseases with potential to severely impact yields were observed in 2016 and are worth monitoring in the future.

Sclerotinia stem rot - Sclerotinia stem rot in Oklahoma is caused by two different species of the fungus *Sclerotinia*. The disease causes a white colored stem rot after flowering in the spring (Fig. 6) that kills plants prior to grain fill. Plants killed by *S. sclerotiorum* have large black sclerotia (fungus seeds) in the stem cavity up to ½ inch in size (Fig. 7) while plants killed by *S. minor* have more numerous, smaller black sclerotia imbedded in the stem about 1/8 inch in size (Fig. 8). The sclerotia serve as seeds of the fungus that can germinate to infect plants directly, or indirectly via a tiny cup mushroom that releases airborne spores which colonize flower petals before invading stems. *S. sclerotiorum* was observed in the demo plots at Kingfisher Co. while *S. minor* was observed at the demo plots at the Caddo Research Station. It is currently occurring at low levels but its presence is worth monitoring. As peanut growers can attest, Sclerotinia disease can become a persistent problem when sclerotia build up to high levels in fields because they can survive in soil for up to 10 years. Crop rotation with non-hosts such as wheat is effective to prevent the buildup of sclerotia, but is of little value where levels of the fungus are high. Canola growers should avoid short crop rotations where this disease has been identified. We expect to publish a fact sheet shortly with more information on the biology and management of Sclerotinia stem rot.



Figure 6: Sclerotinia stem rot on canola.



Figure 7: Large sclerotia of *Sclerotinia sclerotiorum*.



*Figure 8: Small sclerotia of Sclerotinia minor.*

Aster yellows - Aster yellows is caused by a phytoplasma, a wall-less, bacteria-like pathogen spread by a leafhopper. Because phytoplasma diseases are systemic and insect transmitted, they behave very much like a virus disease. Affected plants do not flower properly and produce sterile green rather than fertile yellow flowers. Severely affected plants appear stunted, have a purple color to leaves and do not produce grain (Fig. 9). We normally see a low level of this disease, particularly in research trials that have tilled alleys, and in fields with poor plant stands. Both of these predisposing factors occurred in research trials at Perkins this year where some plots had over 30% of plants affected. There has been little research done on aster yellows disease of canola except that we know that the aster leafhopper is active in the fall and we suspect that fall infections produce the most severe symptoms.



*Figure 9: Aster yellows of canola.*

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## **Plant Disease and Insect Diagnostic Laboratory**

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