PLANT DISEASE AND INSECT ADVISORY

Department Entomology and Plant Pathology
Oklahoma State University
127 Noble Research Center
Stillwater, OK 74078

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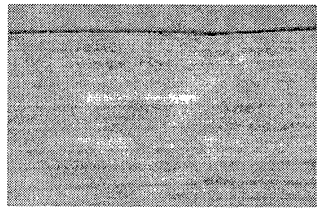
Wheat Disease Update

Bob Hunger, Extension Wheat Pathologist

On Tuesday, May 07th, I traveled from Stillwater to the Burlington/Cherokee area and then south to Lahoma, Hennessey, Marshall, and back to Stillwater. On Friday, May 10th, I traveled south to the Tuttle-Chickasha-Apache area. I also rated breeder plots near Stillwater for reaction to leaf rust, and Brian Olson and I diagnosed numerous samples that were received in the Plant Disease & Insect Diagnostic Lab. Listed below are the highlights & observations from last week.

Wheat streak mosaic virus (WSMV) definitely is more common this year in Oklahoma than it has been for quite some time, with samples received from Altus, Kingfisher, Lahoma, Hennessey, and Marshall all testing positive for the virus. Apparently the vector of WSMV (the wheat curl mite) was more active over bigger parts of Oklahoma last fall than is usually the case. Although nothing can be done about these WSMV infections, remember for next fall that the two biggest contributors to WSMV are the occurrence of volunteer wheat in the late summer and fall, and early planting. Both of these contribute to a higher incidence of the mites, which in turn leads to more severe WSMV.

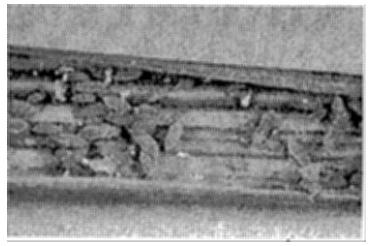
Wheat leaf rust is at a high level around Stillwater (on susceptible varieties, 6-8 on a scale of 1-9). In the field, I have seen levels on Jagger as high as 6 or 7 (approximately 65-80 MS/S), but it appears to me that for the most part, the crop should be sufficiently mature that losses to leaf rust over most of Oklahoma will be minimal.



The only place I saw a significant severity of **wheat stripe rust** is on some demo strips at the Lahoma Station. Everywhere else I've been I've either seen only very scattered stripe rust infections or none.

Many samples and fields appear to have a combination of **WSMV and root rots** (mostly common, sharp eyespot, and Fusarium root rots). Both of these (WSMV and root rots) would have been favored by early planting. In many of these fields, there also is a great deal of **leaf spotting** on leaves and stems. Isolations from these leaves and stems have revealed the pathogens associated with **tan spot, septoria, and common root rot**.

I have seen some head trapping and leaf rolling consistent with **Russian wheat aphid (RWA)** here around Stillwater, but have not been able to actually find any RWA. Just as a point of interest, I also found some fairly high levels of thrips infestations in rolled-up leaves, which according to the literature do not damage wheat. The best indication is to open the rolled-up leaves and look for scattered dark spots on the leaf surface, which is the frass (excrement) of the thrips.



Update on Cancellation of Benlate Fungicide

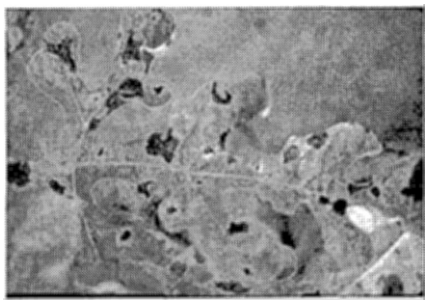
John Damicone, Extension Plant Pathologist

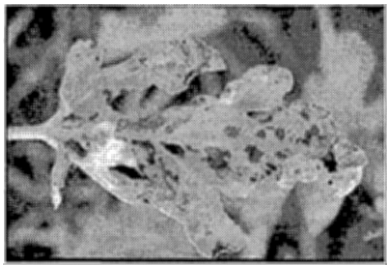
EPA approved the cancellation of Benlate fungicide on Aug 8, 2000 when DuPont was not longer permitted to sell or distribute the product. The cancellation was voluntary and apparently the result of excessive lawsuits and resulting damages paid by DuPont over alleged crop injury caused by Benlate usage. EPA is permitting continued sales of existing stocks already in the channels of trade until Dec 31, 2002. There is no end of use date for growers to use existing stocks. However, EPA has proposed canceling tolerances (legal residues) on various crops between Jan 1, 2006 and Jan 1, 2009. These dates are based on the assumption that the last use by growers will be during the 2003 growing season. While it will not be illegal to use Benlate after 2003, benomyl residues on commodities after the tolerance has been canceled will be illegal unless it can be demonstrated that it was applied before the end of 2003. The bottom line is that growers can purchase existing stocks of Benlate through 2002 and use them through 2003. Any product not used by the end of the 2003 growing season can be returned to DuPont for disposal, but the company will not reimburse the grower for the unused product and the grower must pay shipping costs.

Watermelon Foliar Disease Control

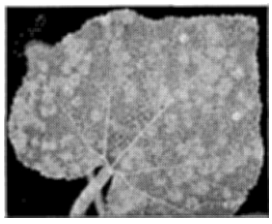
John Damicone, Extension Plant Pathologist

Anthracnose and downy mildew have been the most important foliar diseases of watermelon in Oklahoma. However, powdery mildew is increasing in importance. Anthracnose has been a chronic problem in most areas of the state, although the disease has been virtually absent during the last three growing seasons. I was able to produce a severe anthracnose epidemic in a fungicide trial at Perkins last year.





Downy mildew is a sporadic disease in Oklahoma. The fungus does not survive in Oklahoma, but rather is wind-borne from southern production areas. Normally the disease does not appear in Oklahoma until very late the growing season. However, it has occurred as early as mid July. We will be keeping track of downy mildew outbreaks this season using the cucurbit downy mildew forecast web page (http://www.ces.ncsu.edu/depts/pp/cucurbit) maintained by North Carolina State University. As of yet there are no reports of downy mildew outbreaks in Mexico or South Texas. However, downy mildew has already been reported in Florida and South Carolina.



Powdery mildew has increased in importance throughout watermelon producing areas in the southern United States. Typically, symptoms of powdery mildew on watermelon consist of a grayish-white, powdery growth covering the leaves. Affected leaves typically wither and die. However, symptoms may also consist of yellow blotches that became necrotic with sparse fungal development on the undersides of leaves. The

disease is difficult to identify in this form. Leaves within the lower canopy should be inspected for early disease detection. Usually a few whitish powdery colonies can be observed along with the yellow blotches.

Control of foliar diseases on watermelon is becoming more complicated. We do know that a fungicide spray program is required to manage foliar diseases because adequate resistance is not available to any these diseases. Growers should consider making a preventive application of broad-spectrum fungicide with activity against all these diseases at flowering. Bravo or a tank mixture of thiophanate-methyl or benomyl and mancozeb would be good choices. Sprays with these fungicides can be continued on 14 day intervals or other fungicides with better activity toward a specific disease can be substituted as needed. Should rainy weather become problem or downy mildew become a threat, it may be necessary to shorten spray interval to seven days. Below is a table showing the relative effectiveness of fungicides against watermelon foliar diseases. Note that some of the product ratings changed from last year based on trial results from 2001.

Brand name	Chemical name	Anthracnose	Downy mildew	Powdery mildew
Aliette	fosetyl-AL	P	G	P
Benlate	benomyl	G-E	P	F-G
Bravo	chlorothalonil	G-E	G	F-G
Dithane, Penncozeb	mancozeb	G-E	G	F
Flint	trifloxystrobin	G	F	E
Microthiol Special	sulfur	P	P	G-E
Nova	myclobutanil	P	P	G-E
Quadris	azoxystrobin	G	F	F-G
Ridomil/Bravo	mefanoxam+chlorothalonil	G	G	F-G
Topsin	thiophanate-methyl	G-E	P	P-F
Benlate+Dithane		G-E	G	F-G
Topsin+Dithane		G-E	G	F-G

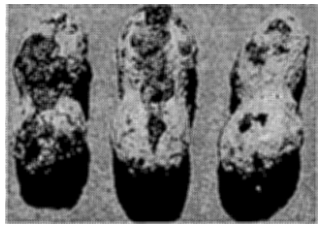
E=excellent, G=good, F=fair, P=poor (no control)

Reducing the Costs of Disease Management Programs in Peanuts

John Damicone, Extension Plant Pathologist

Peanut growers will be under a new economic environment with the passage of the latest farm bill. While there is considerable uncertainty about program details and how to proceed, the biggest impact obviously will be reduced price for farmer stock peanuts. I have received several calls about how to reduce production costs. For disease management, my first answer is that there is no single program or "package approach" that will work everywhere. Growers should evaluate fields on an individual basis to identify critical diseases that must be controlled in order to produce high yields. Disease management inputs should be applied against these diseases, ignoring other, secondary diseases that may not be causing real yield reductions. However, my feeling is that most growers have been doing this all along, particularly since 1996 when the first hit on farm price occurred. Meaningful reductions in disease control inputs will require a higher degree of management by growers. The following are suggested strategies, for diseases that growers in Oklahoma typically face.

Seedling diseases - Seed treatment is sufficient to control seedling diseases. The addition of in-furrow application of fungicides has not resulted in increased stand establishment or yield in OSU trials, even in fields with a history of pod rot and or southern blight.

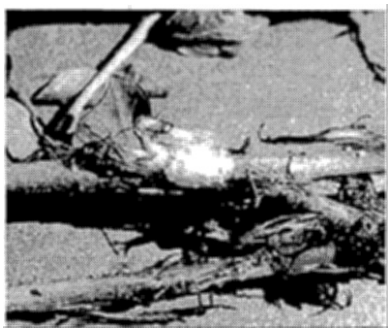


Nematode diseases - Nematicide applications for root-knot nematode should be based on soil test results. Ignore lesion and ring nematodes because treatments that provide a return on investment are not available.

Foliar Diseases - Early leaf spot and web blotch are primary diseases that must me managed to produce high yields. The efficiency of spray programs for early leaf spot can be maximized using the early leaf spot advisory program (http://www.mesonet.ou.edu/premium/ agmodels.html). Contact your county Ag Educator for information on how to use this weather-based program. The goal of a foliar disease program should be to control the disease during early and mid-season, and keep defoliation levels below 50% by harvest. For runner varieties, it is highly unlikely that fields free of leaf spot on September 1st will benefit from late-season sprays. Web blotch on Spanish varieties will require a regular fungicide program. Pepper spot should be ignored because yield losses from this disease have not occurred.

Southern blight - Where levels of this disease in excess of 5% (5 hits per 100 ft of row) are anticipated, a preventive fungicide program with Folicur, Moncut, or Abound should be initiated on or about August 1st. Most growers have already fine-tuned programs with these fungicides. An application of Omega to control Sclerotinia blight will effectively substitute for a fungicide application to control southern blight.

Limb rot - This disease is a tough call. In most trials this disease has bee n of minor importance. Runner varieties in some high-yielding situations respond to fungicide programs (Abound, Folicur, Moncut). However, untreated plots in those trials have also produced good (two-ton) yields. This disease is a good candidate for input reduction.

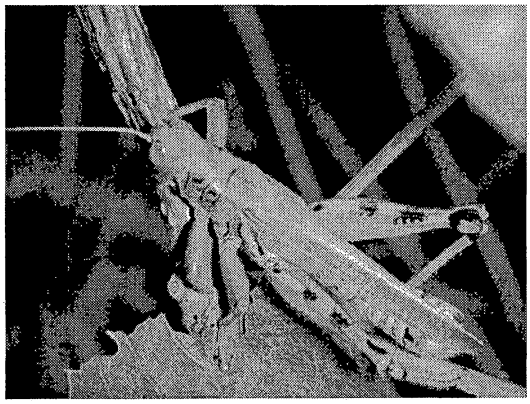


Sclerotinia blight - Most growers realize that a resistant variety (Tamspan 90) or a moderately resistant variety (Tamrun 96) must be planted in problem fields. Additionally, all varieties except Tamspan 90 should receive a single application of Omega 4F at a minimum of 1 pt/A as soon as the disease is first detected. Tamspan 90 may also respond to Omega where vine growth is rank and the disease occurs early (July-August).

Pod Rot - Resistant varieties such as Tamspan 90 and Tamrun 96 should be planted in problem fields. Avoid problem varieties such as Virginia types and AT-120. Fungicides targeted at pod rot have not provided economic returns.

2002 Grasshopper Hatch Underway

Tom A. Royer, Extension Entomologist



Clay Jones, Extension Educator in Bryan County is reporting the grasshopper hatch is underway, with nymphs about ¼ inch long. Over the last few years, Oklahoma ranchers have experienced economic numbers of grasshoppers in counties bordering the Red River. I expect that we will see larger numbers in western counties as well.

Managing grasshoppers is tricky because it is difficult to accurately predict whether they will become enough of a problem to justify the expense of a spray application. Often, large numbers of nymphs will hatch, but as time, weather and natural enemies take their toll, they may not develop into a severe problem. Last year was a good example; grasshopper numbers were high in an insecticide demonstration plot in Jefferson County, but as the summer progressed, numbers declined to below economic numbers in both the treated and untreated check plots.

The best time to control grasshoppers is now through about July 1, while they are immature. When they become full-grown mobile adults, they become nearly impossible to control. If the infestations are spotted early, an insecticide application in egg hatching areas may reduce numbers to the extent that few acres will require chemical treatment later on. Egg hatching areas include fencerows, grassy terraces and roadside ditches.

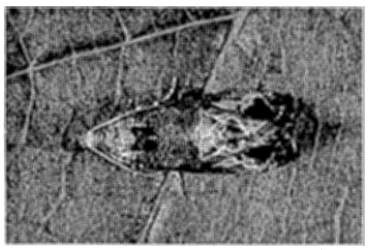
It is difficult to judge whether control is economically justifiable. In rangeland, control is not justified unless numbers exceed 12-16 per square yard. There is a newly registered product, called Dimilin 2L, that can be used in rangeland to control grasshoppers. It can be applied as a Reduced Agent and Area Treatment (RAAT). This involves applying it as a strip spray, with coverage ranging from 50 to 90%. It works by interfering with the molting process of the immature grasshopper and must be ingested by the nymph to work. It will not work on adults.

I must caution producers that Dimilin is not registered for use in improved pasture, and therefore is not legal to use. Even if it were legal to use, coverage would have to be at the 90% level because the forage grows rapidly enough to create a large amount of untreated foliage that would become available for consumption by the grasshoppers. Also, as hay is harvested, the product is removed with it. Other products that are registered for pasture should be used instead. They include Sevin XLR Plus or Malathion 5E. For additional control recommendations, consult the Extension Agents' Handbook of Insect, Plant Disease, and Weed Control, Publication E-832, pages 262-263.

We have received a grant from the Animal Health and Plant Inspection Service to conduct 3 large-scale demonstrations for grasshopper control in rangeland. I will share the results of that work in a future Progress Report as the data becomes available.

Grape Berry Moth Model Results

Phil Mulder - Extension Entomologist



The table below represents model output for three monitoring sites for Grape Berry moth, respective degree-days for each, and larval infestations through May 13, 2002.

Location	Degree-days	No. larvae per 100 clusters
Chandler	492.1	0
Haskell	343.5	0
Perkins	467.2	0

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