

Plant & Soil Sciences

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Extension Newsletter



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Brown wheat mite showing up in winter wheat

By Tom Royer

Despite the Million Dollar Rain that we received this past weekend, Ron Hayes, Director of Farm Programming with Radio Oklahoma Network reported that there are still some small pockets of dry conditions in the northern parts of Woods and Alfalfa counties as well as parts of the Panhandle. This means that pests, such as brown wheat mite have not been knocked out in all locations. Roger Gribble, area agronomy specialist in Enid reported brown wheat mite infestations in western OK (Ellis and Harper counties). Producers need to remain alert to these problems so that their wheat is not suffering dual problems of dry growing conditions PLUS brown wheat mite.

This mite is small (about the size of this period.) with a metallic brown to black body and 4 pair of yellowish legs. The



forelegs are distinctly longer than the other three pair. Brown wheat mites can complete a cycle in as little as 10-14 days.

They will undergo up to 3 generations each year, but have probably already completed at least one or two by now. Numbers will likely decline if a hard, driving rain occurs. Spring populations begin to decline in mid-late April when females begin to lay "diapause" eggs.

Brown wheat mite causes problems in wheat that is stressed from lack of moisture. They feed by piercing plant cells in the leaf, which results in "stippling". As injury continues the plants become yellow, then dry out and die. These mites feed during

the day, and the best time to scout for them is in mid-afternoon. They do not produce webbing and will quickly drop to the soil when disturbed. They are very susceptible to hard, driving rains, but until then they can cause yield loss when present in large numbers.



Research suggests that a treatment threshold of 25-50 brown wheat mites per leaf in wheat that is 6-9 inches tall is economically warranted. An alternative estimation is "several hundred" per foot of row. However, make sure you check your field before deciding to spray your field, because that "Million Dollar Rain" may have already spread some wealth your way by killing off some of those pesky mites!

Check CR-7194, Management of Insect and Mite Pests in Small Grains for registered insecticides, application rates, and grazing/harvest waiting periods. It can be obtained from any County Extension Office, or found at the OSU Extra website at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2601/CR-7194web2008.pdf>.

Tom Royer can be reached at tom.royer@okstate.edu.

Plant & Soil Science Extension

368 Ag Hall
Stillwater, OK
74078

Phone:
405-744-6130
Fax:
405-744-0354

Wheat disease update

By Bob Hunger

Oklahoma:

20-Apr; Dr. Bob Hunger, Extension Wheat Pathologist, Oklahoma State University: Examining plots and trials around Stillwater I found powdery mildew, leaf rust and stripe rust. Wheat was mostly in at full boot with some heads just starting to emerge. Later planted wheat was approaching boot. Barley yellow dwarf virus was observed in several trials around Stillwater; however, no or only very few aphids were seen. Presence of BYDV was indicated by flag leaf discoloration, which is indicative of spring infection. In one early planted trial differences in height also were noticeable, which is more indicative of fall infection.

Where powdery mildew was previously found, it has increased significantly on lower leaves (F-3, F-4) and was easily in the 65-90S range. In some early planted Jagalene, I found powdery mildew, leaf rust and stripe rust with leaf rust (25-40S) being the primary disease present. Flag leaves were still clean and infection on the F-1 leaf was still low (10% range). Stripe rust was present here and elsewhere, but at a relatively low incidence. Dr. Art Klatt (OSU wheat breeder) and Sarah Wright (graduate student) also have reported seeing stripe rust in their breeder lines here at Stillwater. Leaf rust also was observed in several plots and trials around Stillwater. These observations indicate to me that for Oklahoma the decision to spray a foliar fungicide onto higher-yielding fields is here – especially for central and southern OK. The wheat in this area is between growth stage 10-10.5 (full boot-heads fully emerged), and the window to spray will quickly close as fungicides cannot be applied after heads are fully emerged. This is especially true for the earlier planted wheat. In northern, northwestern and the panhandle of Oklahoma, the wheat probably is not quite as far along, but weather for the last 4-5 days and the forecast for the next 4-5 days has been and is favorable

for infection and spread of foliar diseases. For more information on foliar fungicides, please see the OSU Current Report (CR-7668) titled, “Foliar Fungicides and Wheat Production in Oklahoma – April 2010,” which is available through the print-on-demand system at O.S.U. at: <http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage> and type CR-7668 in the search box.

Texas:

16-Apr; Mr. Rex Herrington, Research Associate, Texa A&M: “Here in our College Station nursery, wheat stripe rust is still active. Wheat leaf rust is rapidly increasing on susceptibles, and TAM 110 rust spreader borders are up to 90-100S LR on flag leaves where the stripe rust missed them. Oat crown rust is also increasing on susceptibles. There is only a trace of oat stem rust now. No wheat stem rust has been found yet in the nursery. Temperatures are averaging from the mid 50’s to the mid 70’s.

At McGregor today (west of Waco), wheat stripe rust is very active, and is widespread throughout the nursery. Infections appear the same as at College Station, with Jagger, Jagalene, and 1822 being the worse in the uniform variety test. TAM 110 borders are also very susceptible to stripe rust. Wheat LR is 30S on TAM 110 flag leaves, and I found a green middle leaf of Jagger that was 70S. Many susceptible wheat flag leaves are covered in both stripe and leaf rust. The majority of the wheat has headed out. I found a few pustules of oat crown rust erupting on the flag leaves of Nora oat. No wheat or oat stem rust was observed. Elbon rye had @ 20S LR on lower leaves.”

Kansas:

20-Apr; Dr. Erick DeWolf; State Extension Specialist, Kansas State University: “Stripe rust was observed in North Central Kansas today. The disease was found at low levels in research plots near the town of Belleville (Republic County) and was present in the varieties Jagalene, Jagger, and Santa Fe. The size of the lesions and position

Wheat disease (cont.)

in the canopy suggests that the inoculum resulting in these infections likely arrive 3 to 4 weeks ago. Wheat at this location was at the end of jointing with flag leaves emerging over the next week to 10 days. This is the first report of stripe rust in Kansas for



Stripe Rust

2010. This find is significant because all the varieties affected should have been resistant to stripe rust. All evidence to date suggests that the population stripe rust population

has changed within the Southern Great Plains and that varieties including Fuller, Santa Fe, Overley, Post Rock, Jagalene, and Jagger should now be considered susceptible to stripe rust. The risk of significant yield loss to stripe rust is high for growers in Central Kansas. The current weather forecast for this region includes temperatures near the 70 F and scatter showers. Growers in this region should be on alert for potential development of stripe rust in their fields and be ready to apply a fungicide between flag leaf emergence and heading. Fields with a yield potential of more than 40 bu/a and seed production fields should be a top priority. No leaf rust or stem rust was observed at the Belleville location.”

*Bob Hunger can be reached at
bob.hunger@okstate.edu.*

Peanut planting considerations

By Chad Godsey

With peanut planting time right around the corner I thought it would be good to mention a few key points. The first point is don't repeat mistakes from the past. We all make mistakes and we should use these mistakes to learn. Growers who insist on doing things the way they have always done them may be missing an opportunity to increase profits. A classical example of this is with weed control. Over the last couple of years growers who have become more aggressive with their pre-emerge herbicide program have kept their fields cleaner all season long. Do not rely only on a pre-plant incorporated herbicide (i.e. yellow herbicide). Make the decision early as to which pre-emerge products you will use. Refer to <http://www.oilseeds.okstate.edu/prodinfo/index.htm> for more specific herbicide information. Also have a plan ready to go for post-emergence.

The second point to getting your 2010 peanut crop off to a fast start is planting date. Knowing the soil texture of different fields helps decide which fields to plant

first. Sandy soils tend to warm more quickly than finer textured soils, which have some clay or loam. This difference relates to the water-holding capacity of the soil types. Sand holds less moisture because of its coarse texture. Soils with some clay or loam have a finer texture that has a higher water-holding capacity. Moisture resists temperature change. Sandy soils have less moisture and tend to warm more rapidly than finer-textured soils with higher moisture content. Water uptake is the first step in germination of peanut seed. Seeds require a moisture level greater than 35 percent for germination. Seeds that take up cold water during germination may perform poorly.

The standard recommended planting dates for Oklahoma peanuts are May 1 through May 15 for Runners and Virginias and May 1 to May 30 for Spanish varieties. They have proven to be reliable, and planting close to these dates usually results in greater success. Favorable soil temperature is also necessary for germination. Peanut seed

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Peanut planting (cont.)

will actually germinate over a wide temperature range (41 F to 104 F). Germination will be quick within a range of 77 F to 86 F. The optimum temperature for rapid germination and seedling development is 86 F to 91 F.

Planting should not commence until the soil temperature is 65 F at a 4-inch depth, measured at 7 a.m. for three consecutive days. This is rarely before May 1 in Oklahoma. The Mesonet is an excellent source to identify what the soil temperature is in your area. You may find this information at: http://agweather.mesonet.org/index.php/data/section/soil_water. Currently, the soil temperatures at 7 am have been in the mid to upper 50's.

The final point, growers need to manage their peanut crop to reach a realistic yield goal. Average yields have increased in Oklahoma over the past several years and as



a result inputs may need to be increased. If you step back and think about it, how can we expect to increase yield without increasing inputs or increasing efficiency in the inputs? We can increase yield from genetic

improvements in varieties but that will only take us so far. A common and realistic approach to setting yield goals is to consider past averages.

With this approach the recent average (3-5 years) is increased by 10% to 20% with the higher yield becoming the yield goal. Most producers should have a yield goal of 4,000 lb/ac or higher. Carefully consider your inputs to reach this goal, whether it is fertilizer, fungicide, and/or herbicide.

Here is to a successful peanut crop in 2010 and a "normal" fall!

Chad Godsey can be reached at chad.godsey@okstate.edu.

Guide to Wheat Field Days

By Jeff Edwards

Over the next few weeks, there will be numerous opportunities for farmers to attend field days and determine how new wheat cultivars compare to old standards such as Jagger. A complete listing of field day dates and times is available at www.wheat.okstate.edu but it is never a bad idea to confirm times with the local county extension office. As you attend wheat field days over the next month, I would like to provide a few items for you to consider.

Commit to trying at least one new variety. I am not saying to make a decision to plant the whole farm to a variety based on what you observe at a field day, but I am asking that you try a few acres of at least one new variety. Even if you

are completely satisfied with the varieties you are growing now, it is always best to try a few acres of something new to see how it performs on your farm. This will ensure that when you do have to change the variety lineup on the whole farm, you are not going into the switch blindly and know which new varieties will work best in your system.

Look at the flag leaves. Stripe rust is present in the state and it appears that the races have shifted. As a result, many of the varieties that were previously resistant to stripe rust are now susceptible. So, as you work your way through the varieties, be sure to take a close look to see if disease is present on the flag leaf. If you are not

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Field days (cont.)

willing to use a fungicide, you should definitely consider one the varieties with a clean flag leaf.

Attend the Lahoma or Apache field days to evaluate fungicide efficacy.

We sprayed ½ of every plot at Apache with Stratego on April 20 and will spray ½ of every plot at Lahoma with Quilt sometime the week of April 25. If you want to see how a foliar fungicide affects disease severity on a wide array of varieties, these are the two best



places to do so.

Make notes to go along with yield data. Variety trial yield data will be published in July. Two months is a long time to remember the key points about those new varieties you were interested in at the field day in May. So, make a few notes and review them when yield data are published in July.

Jeff Edwards can be reached at jeff.edwards@okstate.edu.

Fertilizing summer grass pastures

By Daren Redfearn & Brian Arnall

Producers often decide to take advantage of the high forage production potential of introduced forages. These forages are planted and best managed with high fertility inputs, as opposed to native plant communities, which typically receive no fertility inputs. By default, producers have decided to provide the necessary fertility inputs that are required. The first step in the soil fertility program is to obtain a soil sample for analysis.

A soil analysis is used to determine the levels of nitrogen, phosphorus, and potassium in the soil, as well as the soil pH level. Under certain circumstances, analyses for other nutrients may be required. Based on the yield goal for specific forage crops, written recommendations for the level of each fertilizer nutrient required are usually furnished by the laboratory conducting the analysis.

After correcting the soil pH level to greater than 5.7 and meeting the P and K needs, there are only two basic fertilization principles that are required for introduced, warm-season grasses. The first principle is that N fertility is required for grass growth. The second principle is that N fertilization should be based on a reasonable yield goal

for the region of production. The first N application should be in early May, just as the grass is beginning to grow and ahead of late-spring rainfall. Properly timed fertilization can result in a better utilization of late-spring rainfall.

The critical order for proper warm-season grass fertilization is:

- Soil test
- Lime as recommended
- Apply phosphorus and potassium as recommended
- Identify a reasonable yield goal
- Apply nitrogen fertilizer ahead of moisture according to yield goal

Close attention to basic soil fertility fundamentals will ensure the desirable forage production and nutritive value. Poorly managed pastures, on the other hand, can result in high-cost forage that is low in nutritive value. Lack of attention to basic soil fertility will result in the increased purchase of off-farm-feed and forage, decreased animal performance and a reduced level of profitability for the forage-livestock enterprise.

Daren Redfearn can be reached at daren.redfearn@okstate.edu.

Brian Arnall can be reached at b.arnall@okstate.edu.

Upcoming Events

OSU Wheat Field Days

April 26, 2010 Waurika - 6 p.m.

April 28, 2010 Granite - 10:30 a.m.

April 30, 2010 Hollis - 12 p.m.

May 3, 2010 Frederick - time TBA

May 4, 2010 Marshall - 10 a.m.

Billings - 2 p.m.

Sentinel - 11 a.m.

Bessie - 2 p.m.

Minco - 11 a.m.

Weatherford - 6 p.m.

May 6, 2010 El Reno - 10 a.m.

Foss - 11 a.m.

Homestead - 6 p.m.

May 10, 2010 Elk City - 10 a.m.

Hammon - 5 p.m.

May 14, 2010 Lahoma - 8:30 a.m.

Apache - 5 p.m.

**(Note new location: 1 mile south of Apache on HWY 62, around the corner, across the railroad tracks and behind house on north side of highway.)*

May 15, 2010 Kingfisher - 7:30 a.m.

May 17, 2010 Cherokee - 6 p.m.

OSU Plant Science Academy

June 6-8, 2010 OSU Agronomy Farm

Stillwater, Okla.

(Register by April 1.)

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