FOCUS on South Plains Agriculture

A newsletter from the Texas AgriLife Research and Extension Center at Lubbock

Volume 52 number 1 29 March 2013

http://lubbock.tamu.edu/focus

Editor's Note

Experiment with a New Delivery Method

As we begin the new publication year we are trying an experiment to determine whether our readers prefer html or PDF for delivery of the newsletter. The e-mails that announce each new edition will have links to both an html and PDF version on one website and a link to a PDF version on a different website. Please try each type of delivery and just keep using the one you prefer. We will aggregate the download statistics later in the season and determine which delivery type is the most popular. RPP

Wheat Cropping for Grain & Forage

Wheat Freeze Injury Potential

With temperatures early Monday morning in the South Plains ranging from the low and mid-teens in the northeast along the Caprock as well as the northwest South Plains, to 20-22 F in the central and lower South Plains, there will be questions and concerns about the prospects for freeze injury on wheat, especially if crops are going to grain. The duration of freeze, several hours, also elevates the concern. I saw some dryland wheat in Dawson Co. last Thursday that had flag leaves emerging on some plants (but no boot), the earliest stage of growth I have observed. Other fields throughout the region are spread out for maturity, some still at early jointing if planted late, but most well in to growth at some degree past jointing, and many fields 4-8" tall on forage.

The AgriLife Extension document 'Freeze Injury on Wheat' is a good summary and includes many photos. Also, a scale of temperatures is listed as well. Oklahoma State Univ. published some information on freeze damage in wheat on March 27th. Duration of cold can influence potential injury and wheat that is lush (higher moisture content) is more susceptible to injury. Droughted, hardened off wheat is less susceptible. The above document's guidelines on temperature for potential and significant freeze injury are 28 F at booting, 24 F for wheat in some stage of jointing (and we were below that), but vegetative wheat injury may require temps as low as 12 F to inflict injury. My Extension colleague Dr. Travis Miller, College Station, noted that for

wheat with two nodes above the soil line (second joint), if 22 F is the critical temperature then of course duration, conditions of the wheat, the ACTUAL temperature down in any canopy near the soil line (in contrast to air temperature), etc. come into play.

I have not seen any indication of damaged foliage though I have received two producer reports in north or west Hale Co. noting darkened foliage, which is evidence of freeze damage, but if the temperatures are not that low at the bottom of the canopy (if there is a canopy; thinner stands where soil is still exposed will have lower temperatures to ground level), there will be favorable difference. I expect that some of our wheat will demonstrate burned-back leaf tips and yellowing and I also anticipate some of the characteristic "water soaked" appearance of the vegetation. As long as that is on the upper leaves, at this point I don't think I would be too concerned. However, if in jointing wheat I examine the growing point in a week or so and find brown or mushy tissue, then the growing point is dead. (Use a small sharp knife or razor blade to shave away the surrounding tissues to find the growing point above the topmost hollow stem). Any emerging leaf that is brown is also a sign of a dead growing point.

There are two final considerations for potential wheat freeze injury: 1) Wheat freeze damage is rarely as bad as it looks. Freezes in March can hurt yield potential whereas freezes in April can lead to direct yield losses that may not be recovered. Tillering is your friend in wheat, and freezes at this time, if you indeed have damage to primary tillers, can still compensate for yield; 2) if you are going to hay or silage then the freeze is less of a concern. Whereas a freeze can diminish grain yield potential such that later tillers cannot very well compensate for the yield, tiller growth can still produce ample forage, so there is inherently less risk of a freeze to the forage crop than for grain.

Wheat Diseases Not Prominent

Limited reports of wheat streak mosaic virus (or it could be High Plains virus or Triticum mosaic virus, which require lab tests to distinguish from WSMV) and barley dwarf mosaic virus are limited at this time. It still early to expect significant expression of many of these diseases at this point. For information on wheat plant health, consult the plant pathology Extension page of the Texas A&M AgriLife Research & Extension Center, Amarillo. Two of the best resources on this URL are the pictures in 'Wheat Disease Identification Book' and the information for individual diseases in 'Wheat Disease Fact Sheets.'

Our primary contact for wheat diseases in the Texas High Plains is Dr. Ron French, Extension plant pathologist, Amarillo, 806.677.5600, rdfrench@ag.tamu.edu Dr. French and his colleague, Jacob Price, run the plant disease diagnostic lab at Amarillo, and they welcome wheat samples to assess for disease incidence. A survey sheet to send with wheat samples is available.

Converting Wheat Grain to Hay/Grazing?

If the weather allowed, there is a significant acreage of wheat in the South Plains that would like to go to grain where prices are strong. But with limited irrigation or some dryland that actually has some decent forage, producers may consider moving to forage. We won't know if this was the right decision until May, but if you have decent forage available now but the prospects for grain

are dim, the worst-case scenario is to bypass the hay or grazing, only to have the forage burn up and get no grain either. CT

Grain Sorghum

Seed Supplies and Planting Intentions

The upward trend in cotton prices since the beginning of the year and the anticipated decline in grain prices are opening up a shift in grower planting intentions back to cotton from grain sorghum, although this hasn't appeared to be significant as of yet. Seed dealers have yet to report any significant release of booked seed, and seed supplies for grain sorghum are still tight. Some grain sorghum seed bookings may be returned, which will reduce pressure on seed availability though popular hybrids are still expected to be scarce. Producers who need grain sorghum seed should still seek commitments on supply. If you have grain sorghum seed booked but didn't get what you wanted, then check with your seed dealer to see if any other hybrids might now be available.

Huskie Herbicide Remains a Common Topic for Grain Sorghum

Huskie herbicide (Bayer) remains a topic of considerable interest from producers due to its good post emerge control of broadleaf weeds including the Palmer amaranth species of pigweed. An Extension overview of Huskie is available online.

Grain Sorghum and Alternative Crop Contract Prices

Current prices are currently $0.35-0.40 per bushel under Dec13 corn futures in the central South Plains, then convert to cwt., e.g. about $9.55/cwt.

Guar, sesame, and sunflower retain good pricing at or above 2012 pricing for West Texas for these drought tolerant, heat tolerant crops.

- Guar contracts are $0.45/lb., up from $0.35/lb. in 2012.
- Sesame contracts are $0.44/lb. for dryland, $0.50/lb. for irrigation. In addition, Sesaco is offering a $0.10/lb. bonus to irrigated growers if yields surpass 1,200 lbs./A, which is very achievable. These higher yields will help set a more favorable APH & T-yield for the crop in the region. Seven counties in the South Plains were eligible for a federal crop insurance pilot program (sign up was March 15 for Lamb, Hale, Floyd, Lubbock, Crosby, Dawson, and Terry Counties).
- Sunflower—confectionary: $38/25 to $35/23 per cwt. depending on seed size.
- Sunflower—oilseed: $25-26/cwt., some for oilseed crushing, some for birdfood.

Split-Pivot Irrigation Scenarios

Producer interest in strategies to spread out cropping under the same pivot to avoid irrigation of the full circle at the same time (either all cotton or a cotton/alternative mix) remains. Extension has posted an updated PowerPoint with more scenarios for split-pivot strategies where major overlap of irrigation of two different crops at the same time is minimized. Interest in split-pivot scenarios has been driven in part by producers noting that in cotton they would prefer to grow 60 acres of well-irrigated, well-managed cotton where all their management expertise can come into play vs. having their hands tied and much less ability to manage a good crop if they are trying to water the whole circle. CT

Cotton Disease

Varietal Selection, Seed Treatments and Cotton Disease

Variety selection is one of the single most important decisions producers can make. This statement holds true for all aspects of production including reviewing variety performance data such as maturity, plant management, yield potential, fiber quality, storm resistance, herbicide and insecticide traits, as well as disease and nematode susceptibility. When looking at variety data, keep in mind the objective of the studies when they were conducted, especially as it relates to choosing varieties to plant on farms with specific disease problems. As there is no 'silver bullet' variety, it is important to properly identify disease problems within a field, thus allowing you to choose the variety that best fits the situation.

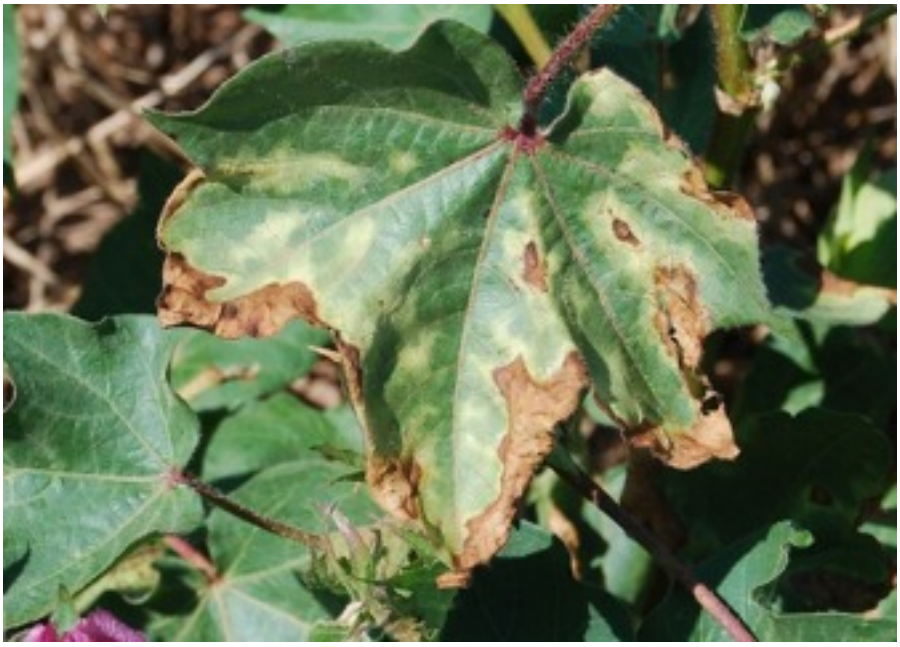
There are several diseases that commonly occur on the Southern High Plains of Texas. Verticillium wilt, Root-knot nematodes, Bacterial blight and Fusarium wilt, as well as the seedling disease complex. Seedling diseases occur every year in west Texas. While, substantial losses are seldom experienced, cool wet conditions after planting can increase seedling disease. Symptoms associated with R. solani and Pythium spp. are similar and can be observed on young seedlings. Initial symptoms consist of sunken lesions at the soil level, resulting in girdling and collapse of the stem following infections that take place prior to or during emergence, plant mortality can occur.

Initial infections of post-emergence damping-off (*R. solani*)
Note the lack of lateral roots and the constricted, necrotic lesions.

This is fairly common under warmer conditions in conjunction with high winds. In addition, black root rot (caused by Thielaviopsis basicola) can be experienced on the Southern High Plains.

Plants infected with T. basicola may also exhibit severe necrosis on roots, severe stunting and swelling of the cortex; however, plants are rarely killed. Black root rot is more severe in the presence of the root-knot nematode. This is due primarily to the effectiveness of the fungicide seed treatments that come with commercial seed. Different seed companies use different seed treatment fungicides; however, most all have activity against the primary seedling diseases Rhizoctonia, Pythium and Black root rot. See the following link written by Dr. Tom Isakiet, Extension Plant Pathologist, College Station for a detailed description of most of the products available. For 2013, Fibermax and Stoneville varieties will be treated with a combination of Vortex combined with Baytan and Allegiance FL. Bayer CropScience will also offer Trilex Advanced as an over-treatment. The base seed treatment for Deltapine is comprised of pyraclostrobin, trifloxystrobin, metalaxyl, and myclobutanil, with their over-treatment Acceleron being available in the future. Americot and NexGen varieties will be treated with Maxim, Apron, Systhane, Nusan, and Lorsban. Syngenta is offering the additional fungicide treatment Dynasty CST which contains axozystrobin, fludioxonil and mefenoxam.

Losses to Verticillium wilt have increased over the last several years, making it the most economically important disease of cotton during that time. Leaves of plants infected with the Verticillium wilt pathogen (Verticillium dahliae) appear wilted and exhibit a yellowing between the veins before becoming necrotic.



Verticillium wilt

As the disease progresses, stems of infected plants will have a discoloration of the vascular system. Infected plants will also appear stunted and in some cases may defoliate prematurely and death may occur. The fungus survives in the soil as specialized structures (microsclerotia), which germinate in response to moisture and root growth. Observations from 2012 yield some consistent results in three of the Verticillium wilt trials conducted in the High Plains. Although variety selection is most important in Vertcillium wilt management, other production practices may also influence disease development. A report on the affect of irrigation, seeding rate, crop rotation, and fertility on Verticillium wilt is currently available and will be updated as newer information is made available.

Advances in breeding programs have also yielded varieties that have partial resistance or improved tolerance to the root-knot nematode (Meloidogyne incognita). Varieties such as Deltapine 174RF, Phytogen 367WRF, Stoneville 4288B2F and Stoneville 5458B2F have partial resistance and/or improved tolerance. Results from 2012 root-knot nematode trials are available. In addition to the aforementioned varieties new offerings, including Fibermax 2011GT and Stoneville 4946GLB2 have shown promise in 2012 and will continue to be evaluated in 2013. Symptoms associated with root-knot damage include stunting, poor vigor, yellowing of leaves, and wilting, which may be confused with a nutrient disorder or deficiency. One characteristic that can be used to identify root-knot nematode is the formation of small galls that form on the root after the female nematode initiates a feeding site.

The amount of damage observed in the field is more severe when there are higher populations of the nematode in the soil. Nematode damage is often enhanced when plants are experiencing other early season stresses. Seed applied nematicides such as Avicta and Aeris are labeled for use in cotton to combat nematodes; however they have been shown to be most effective under low nematode pressure. With the recent loss of Temik, variety selection has taken center stage in my research and education efforts.

While sporadic in its occurrence, Bacterial blight (caused by Xanthomonas campestris pv. malvacearum) can also adversely affect yield and fiber quality. Cotton plants are susceptible to infection at all developmental stages. Stand losses and reduced vigor can be experienced if infections occur during the seedling stage.

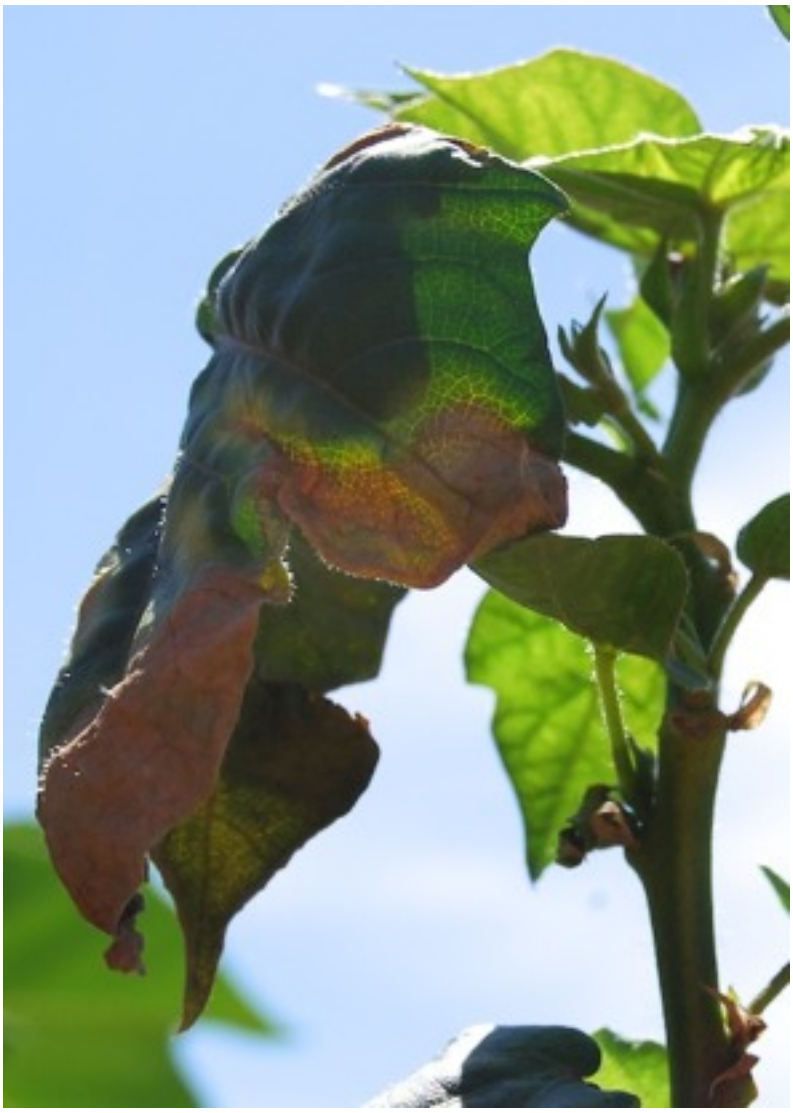
Symptoms include small, dark green, water-soaked spots that are first visible on the underside of leaves.

Bacterial blight

These lesions, which have an angular appearance and are delimited by the veins, later become present on the upper leaf surface. As the disease progresses, a second leaf symptom (referred to as 'Black arm') can be observed along the main vein. As individual lesions coalesce and become necrotic, infected leaves will defoliate prematurely. In addition, water-soaked lesions can develop on infected bolls. These infections often result in a boll rot. There are no chemical management options available for Bacterial blight. The disease is currently managed through the use of resistant or immune varieties and more information is presented here.

Another, economically important disease throughout the south western part of the region is Fusarium wilt caused by the soilborne fungus Fusarium oxysporum f. sp. vasinfectum. Severe Fusarium wilt damage only occurs in fields that are also infested with root-knot nematode; hence losses are more severe on root-knot susceptible varieties. Symptoms of Fusarium wilt can be confused with Verticillium wilt; therefore, proper disease diagnosis is required. For more

information regarding diagnosis see the bulletin 'Diagnosis and Management of Vascular Wilts of Cotton'.



One subtle difference is that seedling mortality may be observed with Fusarium wilt. Therefore, management options that are employed to minimize nematode damage are often integrated into Fusarium wilt management strategies. For example, the use of nematicides results in higher stands, lower disease incidence, and greater yields. While nematicides have no direct effect on Fov the benefit comes from reducing damage caused by the nematode. Furthermore, results from trials conducted in fields infested with Fov have found that varieties which posses partial resistance or improved tolerance to root-knot nematode consistently perform well, as do varieties that seem to have resistance to the fungus, such as Stoneville 4554B2F. Results from the previous Fusarium wilt trial are available. If you have any questions about any of the cotton diseases, variety selection or seed treatment options, contact Jason Woodward at 806-632-0762 or via e-mail jewoodward@ag.tamu.edu.

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Water Management Website, TAMU, Irrigation at Lubbock, IPM How-To Videos, Lubbock Center Homepage, Texas AgriLife Research Home , Texas AgriLife Extension Home, Plains Cotton Growers

County IPM Newsletters

Castro/Lamb, Dawson/Lynn, Crosby/Floyd, Gaines, Hale/Swisher, Hockley/Cochran, Lubbock, Parmer/Bailey, Terry/Yoakum