FOCUS on South Plains Agriculture

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Cotton Agronomy

High Plains Crop Conditions

Although it has been said many times this season, the cotton crop in the Texas High Plains continues to be a "mixed bag". Most irrigated acres are in fair to good condition across the region with some pockets of excellent irrigated cotton with tremendous yield potential. I was in a drip irrigated cotton field earlier today that was sitting at 6-7 nodes above white flower (NAWF) and has been blooming for 3-4 weeks. Further investigation revealed outstanding 1st position fruit retention with 95% or better. Furthermore, several 2nd and 3rd position fruit was observed. However, most of the irrigated fields I have seen are at or near physiological cutout (NAWF=5). As far as dryland acres are concerned, the last 2 weeks of high temperatures and little to no rainfall have taken their toll on the cotton crop. Most dryland fields entered bloom at cutout or reached hard cutout very quickly and are blooming out the top. As with the irrigated acres, there are some bright spots where timely and significant rainfall events have provided decent moisture for dryland production. Just south of Floydada, I observed a dryland field that was in excellent condition for this year. It was at 6 NAWF and had been blooming for approximately 2 weeks with a good boll set. This "mixed bag" of crop conditions for both irrigated and dryland are mostly a result of the sporadic rainfall events that have occurred across the region. Total rainfall amounts reported by the Texas Tech West Texas Mesonet stations for June through August 8 range from 7.32" at the Abernathy station to 0.76" at the Lamesa Station. Again, with the spotty showers that have occurred this year, amounts may vary greatly within a short distance from these stations. Isolated observations of up to 4" or better from a single rainfall event have been reported. At the time of this writing, heat unit accumulations for Lubbock (CottonHeatUnits.com) from May 1 to August 8 are at 1927 which is 304 heat units (or 20%) above the long term average of 1603 for this period.

Late Season Irrigation Issues

The 2012 growing season has been challenging for much of the region. Lack of rainfall has devastated most of the dryland crop and has made profitability of irrigated crops difficult. Many fields have virtually no soil profile moisture, except in the irrigation zone, at this time and those fields are now entering cutout. Some have crashed hard, and others are on the way down. This implies a lower yield than desired. It also indicates that this crop will mature much faster than what has been experienced in previous years (with exception to 2011, which we all want to forget!!).

Some fruit shed will be observed in fields that can't keep up with crop moisture demands. Normally a boll will be retained once it reaches 10-14 days after bloom. Even though the plant retains this boll, it will likely be smaller and have shorter fiber length if continued moisture stress is observed. Deficit irrigated pivot fields that have not received significant rainfall amounts have soil profiles that are depleted of moisture. We would like to target the soil profile to be nearly depleted as we enter harvest aid season. Producers should attempt to reduce moisture stress in a

field at least until the final bloom to be taken to the gin becomes about a 10-14 day old boll. This will reduce the likelihood of small bolls shedding due to water stress. Fiber length is generally determined during the first 25 days or so in the life of the boll. This indicates that small amounts of irrigation should be applied to carry the boll through the important fiber length development phase. After that, late bolls can handle considerable stress. For a boll set on August 10th, it is apparent that the field should have reduced amounts of water stress probably at least through the end of the month, unless rainfall is received to offset irrigation. Otherwise moisture stress could limit quality of the uppermost bolls.

A rod probe or other tool may be useful in determining the amount of moisture remaining in the soil profile of fields. Water holding capacities of major High Plains soils are found in Table 1. MSK

Table 1. Average available water holding capacities for typical High Plains soils[1]. Soil series	**Dominant texture**	**Available water holding capacity, inches/foot**
Amarillo fine sandy loam	sandy clay loam	1.8
Amarillo loamy fine sand	sandy clay loam	1.7
Arvana fine sandy loam	sandy clay loam	1.8
Brownfield fine sand	sandy clay loam	1.4
Portales fine sandy loam	sandy clay loam	1.6
Acuff loam	sandy clay loam	1.9
Olton loam	clay loam	2.0
Estacado clay loam	clay loam	1.6
Pullman clay loam	clay	1.8
Miles fine sandy loam	sandy clay loam	1.8
Ulysses clay loam	clay loam	1.6
Mansker loam	clay loam	1.8
Lofton clay loam	clay	1.9

Cotton and Peanut Diseases

Things have not changed as far as cotton diseases go. We continue to see the effects of Fusarium wilt, Root-knot nematodes, Verticillium wilt and a little Bacterial blight; however, several diseases are being observed in the regional peanut crop. Below is an excerpt from the recent Peanut Progress Newsletter.

As the year's peanut crop continues to develop, scouting should be conducted to protect the developing pegs and pods. I have received several samples over the past week exhibiting symptoms of pod rot. This disease is characterized by the dark rotting that occurs from pods becoming infected by various fungi. The two most prevalent causal agents associated with pod rot are Pythium spp. and Rhizoctonia solani. The two diseases look similar in the field and may also occur in concert. However, there are subtle differences that can be used to help in diagnosis. If it is not possible to diagnose the cause of pod rot in the field, symptomatic pods can be placed in a plastic bag containing a moist paper towel. Incubate at room temperature overnight, and then examine the pods. In general, Pythium spp. will have a distinct white cottony growth and infected pods will appear water-soaked and greasy; whereas, R. solani will appear as brown fungal growth and pods will be relatively dry. Applications of fungicides for pod rot control should be made 60-75 days after planting with subsequent applications made approximately 30 days later. Banding applications over the center of the row can be done to improve deposition of fungicides, such as Abound and Ridomil, into the lower canopy. Furthermore, increasing the carrier volume (20 gallons per acre minimum) will help with fungicide deposition as well.

Development of other diseases, such as Sclerotinia blight, southern blight and leaf spot also occur once canopy closure (or lapping of the row middles) is achieved. Sclerotnia blight, caused by the soilborne fungus Sclerotinia minor or. S. sclerotium, can be identified by a yellowing and/or wilting of lateral branches. A closer examination of the canopy at the soil line will reveal a cottony, white, moldy growth; which is most commonly observed early in the morning. As the disease progresses, infected stems become bleached and become shredded. Small, black, irregular-shaped structures (sclerotia), which serve as over-wintering structures, may be produced on or within infected tissues. Currently, there are only two fungicides (Omega and Endura) used for Sclerotinia blight management; however, studies are currently underway to evaluating newer products.

Another disease, southern blight (caused by Sclerotium rolfsii) may develop under the warm, moist conditions found within the lower plant canopy of well irrigated fields. Southern blight can also occur in other crops including peppers and watermelon. Symptoms of this disease are similar to Sclerotinia blight; however, the sclerotia of this fungus, which readily form on diseased tissue, are spherical in shape and have a brown to bronze color. Numerous fungicides are labeled for use against southern blight; however, Abound, Artisan, Convoy, Folicur (as well as other tebuconazole formulations) and Provost are most commonly used.

Close attention to foliar diseases, predominantly early and late leaf spot, should be paid in fields planted to Valencia and Spanish market-types. Despite dry conditions the potential for leaf spot to develop may exist as a result of dense growth, high humidity, heavy irrigation or dew which allows moisture to accumulate on the foliage in the lower canopy. Peanuts can tolerate substantial levels of leaf spot; however, potential yield loss can occur if pegs or stems become

infected. If fungicide applications are warranted, products containing chlorothalonil, such as Bravo, Echo and Equus can be used preventatively; whereas, Headline can be applied curatively. A complete list of fungicides labeled for use in peanut can be found at http://agrilife.org/peanut/files/2011/10/D_peanut_pdfs_productionguide07_3.pdf. If you have any questions regarding peanut diseases or wish to receive the Peanut Progress Newsletter in addition to FOCUS contact Jason Woodward at 806-632-0762 or jewoodward@ag.tamu.edu. JW

Early leaf spot in the lower canopy

Signs of Sclerotinia blight in the lower canopy

Symptoms of Pythium pod rot

Wheat Varieties 2012 Picks

Texas AgriLife has completed the 2012 wheat variety trial report "2012 Wheat Variety Trials Conducted in the Texas and New Mexico High Plains," compiled by Extension agronomist Calvin Trostle, Lubbock, and wheat breeder Jackie Rudd, Amarillo. For a full report see the URL at the end of this note.

For 2012 fall seedings the Texas AgriLife "Picks" for wheat varieties are noted below. In order to be considered a Pick variety, varieties must be in the trials a minimum of three years (often initially as experimentals), and demonstrate consistent performance or offer a unique trait that merits planting in the High Plains. Multi-year average yields and test weights are reported as regional averages for up to 4 years if a wheat variety has been in the trials since 2009 (22 total locations for both irrigated and dryland). Also, we report the performance of Pick wheat varieties vs. non-Pick wheat varieties, for example, in the 4-year testing for 2009-2012, wheat varieties on our Pick list averaged 12% higher than non-Pick wheat varieties.

2012 Wheat Variety "Picks"--Texas High Plains		
Full Irrigation	**Limited Irrigation**	**Dryland**
TAM 111	TAM 111	TAM 111
	TAM 112	TAM 112
TAM 113	TAM 113	TAM 113
TAM 304		
Duster	Duster	Duster
Hatcher	Hatcher	Hatcher
Winterhawk	Winterhawk	Winterhawk
		Endurance

New Additions to the Wheat Variety Pick List

TAM 113 and Winterhawk were added this year to the Picks list for all production conditions.

- TAM 113 has improved disease resistance to leaf and stem rust. Its yields trail TAM 111 in irrigated and slightly in dryland, but the disease package makes TAM 113 a good choice if you are using TAM 111 and TAM 112. It is not necessarily a replacement for either variety (see the detailed comparison in the full report).
- Winterhawk (Westbred) is the top yielder in both 3-year irrigated and dryland yields, but this variety is one of only two commercial varieties that are routinely if almost automatically susceptible to stem rust thus Winterhawk probably should not be planted on more than 25% of your total acreage.

Some varieties were deleted from the Picks list for 2012 including Bill Brown (all conditions), TAM 304 (limited irrigation), Endurance (irrigated), and Armour (dryland).

For updated wheat variety trial results, variety descriptions, past annual summaries and other Texas High Plains wheat production information, view this and other reports online at http://amarillo.tamu.edu/amarillo-center-programs/agronomy/wheat-publications (the Agronomy link) or http://lubbock.tamu.edu/. CT

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Useful Web Links

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