Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK

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2011 Crop Recap

2011 has been quite a ride for Oklahoma cotton producers. The terrible drought finally gave way to considerable autumn rainfall. The Altus Mesonet Station has recorded 5.2 inches of precipitation since October 1 (compared to the "normal 5.4 inches), and that is very near normal in terms of amounts and distribution by month. This has allowed many producers to get cover established on previously parched fields. The bad news is we still have cotton in the field in some areas at this late date. One producer indicated that in the last 2.5 months, he has only been able to conduct stripper harvesting operations for only about 10 days. This has added insult to injury relative to fiber quality issues.

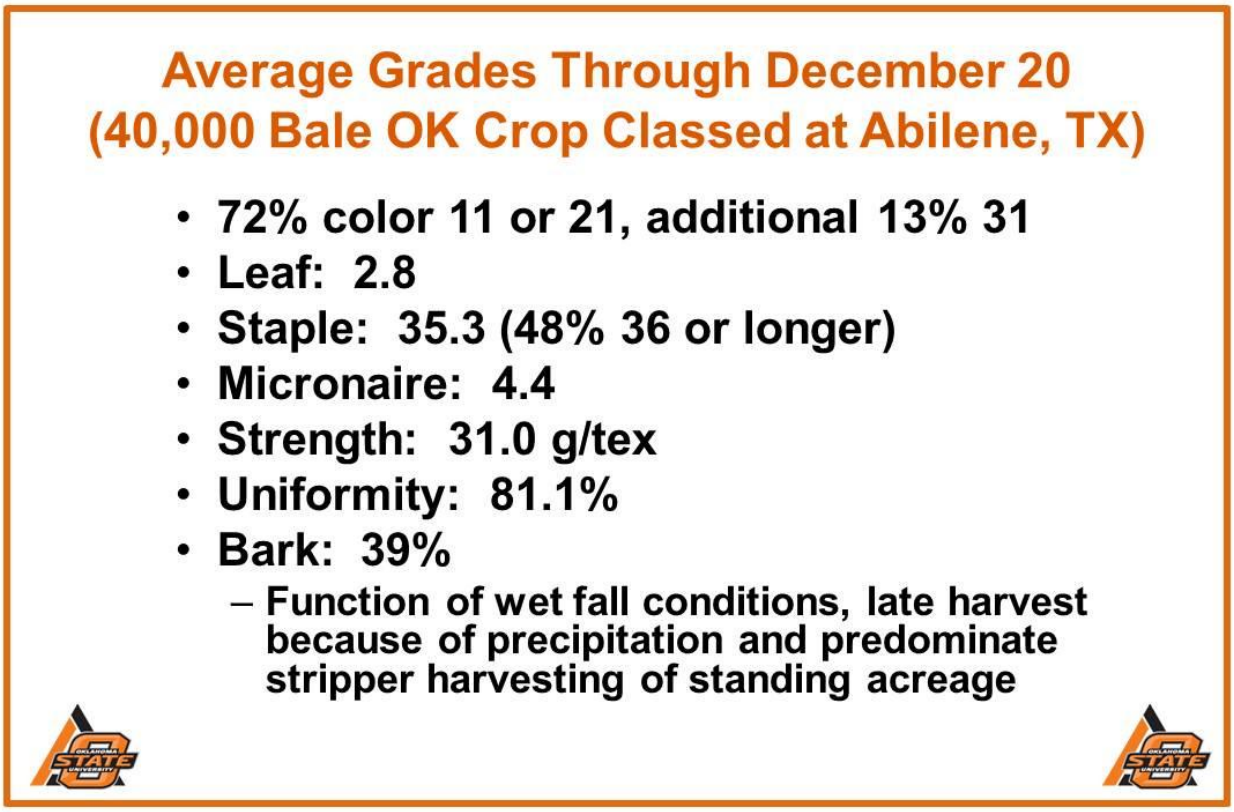
The December USDA-NASS estimate indicated that the Oklahoma crop had 100,000 standing acres, would yield 432 lbs/acre and would ultimately produce 90,000 bales. I have a hard time with the 90,000 bale production estimate based on experience and what we know about the 2011 crop. If we assume we planted about 400,000 acres and if we assume we are harvesting 50,000 then that results in an abandonment rate of about 87% during the worst drought year on record. Data provided by the USDA-FSA State Office indicated that dryland planted acreage was about 262,000 whereas irrigated acreage was about 134,000 for a total of 396,000 acres in the state during 2011. I think it can be safely assumed that essentially all of the dryland acreage failed. I know there is some out there, but not a lot. If we assume 5,000 dryland acres standing then about 2% of planted acres made it to harvest, which resulted in a 98% failure rate.

A large number of irrigated acreage also failed, especially in extreme southwestern Oklahoma. Stands were difficult to obtain, and in the fields where stand establishment was successful, dwindling irrigation capacity during the height of the severe growing season resulted in highly stressed fields in many areas. Add to this the early four-bract square issues and extensive abortion of these types of fruit, low seed count due to incomplete pollination which resulted in "parrot beaking" and small boll size, then the prescription for yield disaster was written. If we assume 45,000 irrigated standing acres, then about 33% of planted acres made it to harvest, for a 67% failure of irrigated acres.

If the total standing acres for harvest is about 50,000, the next question is how much production from these acres? Irrigated land on the average may likely contribute more than 1 bale per acre. We do have one producer who farms near Carnegie who was able to produce over 4 bales/acre on a 102 acre center pivot – which had 1,000 gpm or over 9 gpm/acre. This is likely the highest yielding field in the state this year, and I submit that not many producers were able to get anywhere near this yield.

Early harvested cotton fiber quality was plagued by considerable seed coat fragment and bark contamination. Seed coat fragments in lint are basically caused by excessive immature seed. This seed disintegrates at the gin stand and it is difficult to remove seed coats during the lint cleaning process. Currently the Oklahoma 2011 crop indicates a total of about 40,000 bales classed. Where the total will end up is difficult to estimate, but it will likely be somewhere between 50,000 and 75,000 bales off of a similar range of harvested acres.

Overall quality has been remarkably good for some fiber characteristics (see Figure 1 below) considering the devastating growing season. However, seed coat fragments and bark are problematic. Based on my experience, with most of our remaining cotton likely being stripper harvested, bark contamination will usually not go away this late in the season; it will likely increase depending upon the amount of continued weathering of the crop. Texas High Plains research indicates that harvesting as late as January and February will likely result in significant lint weathering due to photodegradation of cellulose. This can reduce fiber length (about 1/32 inch), uniformity (about 1-1.5%), and strength (about 1 g/tex). Therefore, time is of the essence in terms of fiber quality. To see the overall fiber quality of the Oklahoma crop classed thus far, click here.



Soil Sampling Important

Soil sampling should seriously be considered for fields planning to be planted to cotton in 2012. A lot of producers applied a considerable amount of fertilizer to many cotton fields in 2011 anticipating an excellent market and decent weather. Many irrigated fields failed after fertilizer applications, and nitrogen fertilizer prices are important considerations. Since the cotton fiber is an extension of the cell wall of the seed coat, if seed is not produced then neither is fiber. During the last 10 years the amount of seed it takes to produce a bale of lint has fallen from about 800 lbs of seed/bale to about 700 lbs of seed/bale. Another way of looking at this is that the amount of lint produced per pound of seed has increased. Many producers have failed to recognize this fact. I submit that many growers in many areas have tended to over-fertilize cotton. When this occurs, it can cause unintended consequences such as delayed maturity potentially leading to immature fiber and low micronaire, rank growth which requires more plant growth regulator use for control, potentially more challenges with diseases and insects such as *Verticillium* wilt and aphids, and more difficulty with harvest aid performance. Historically, Oklahoma nitrogen recommendations have been 60 lbs N/bale of yield goal, which I believe is excessive. Texas AgriLife Extension Service recommendations are 50 lbs N/bale of yield goal, and there has been recent discussion of lowering this a bit yet. The Texas recommendations include using deep sampling for residual N and including contributions of nitrate-N from irrigation water sources. Some areas in Oklahoma have irrigation water quality that can contribute to the overall cotton N

requirement. Residual soil N and that from irrigation water should be subtracted from the overall N requirement of about 50 lbs N/bale. Setting a realistic yield goal based on soils, irrigation capacity and anticipation, and overall management is also important. Boll weevil eradication, new transgenic traits providing Bt and glyphosate tolerance delivered in higher yielding and higher quality varieties, more efficient irrigation systems, and other improvements in management have resulted in much higher profitability potential than in the past. Other nutrients such as P, K, and Zn should also be assessed during the "off-season" in order to fine tune fertilizer applications. For a good Texas AgriLife Extension Service publication concerning deep sampling, click here.

Reminder Concerning Trait and Seed Refunds

Deadlines are looming for submission of paperwork to various companies for trait and seed refunds. I have reproduced with slight modification what we published in our August 12 newsletter:

The modern transgenic varieties have provided a lot of value to producers in terms of improved yield and quality. Producers are fortunate that transgenic trait providers are sharing the risk in our region (Monsanto Seed Drop Zone E, Bayer CropScience Southwest Geography Zone CE, both of which cover the entire State of Oklahoma). Drought associated losses are covered for all Monsanto Genuity traits by 100% refund of the published tech fee price for losses associated with drought. These traits would include Roundup Ready Flex and Bollgard 2.

One important requirement for the Monsanto program for Genuity Traits is that: "You purchase only Roundup WeatherMAX or Roundup PowerMAX agricultural herbicide from an authorized retailer for the first postemergence application on cotton acres containing the Genuity Roundup Ready Flex trait."

This can be triggered either by non-emergence or if the field ultimately produces less than 150 lbs lint per land acre. Bayer CropScience has a similar program for its Liberty Link and GlyTol technology fees.

In addition to 100% trait refunds in case of non-emergence or 150 lb lint production per land acre, various seed companies are also sharing risk. However, a 50% refund of published seed cost is provided. There are issues specific to the various companies. It will be important to know and file the required paperwork (seed and herbicide purchase receipts, FSA forms) by the specific deadlines (which can vary by company). Some companies may require one of their representatives to investigate claimed acres while the crop is still in the field. Some reserve the right to reject without settlement any potential claim not inspected by their representative. Losses due to other perils such as disease, pests, hail, blowing sand damage, etc are not eligible for coverage.
If producers have specific questions, Shawn Wade with Plains Cotton Growers in Lubbock posted information which is company specific.

The direct link for this information on the PCG website can be accessed here:

http://www.plainscotton.org/seeddroughtrelief11.html

Drought losses for dryland are covered by Monsanto's 2011 Drought Relief Program for Genuity traits including Roundup Ready Flex and Bollgard 2 and by Bayer CropScience for Liberty Link and Glytol technologies.

Complete information for Drought Relief programs concerning traits can be accessed here:

Monsanto:
http://www.plainscotton.org/SeedDroughtPDF/2011prog/DPL_2011DroughtReliefWestTX.pdf

Bayer CropScience:
http://www.plainscotton.org/SeedDroughtPDF/2011prog/Bayer2011CottonDroughtRelief.pdf

The deadlines for Monsanto's Drought Relief program covering dryland losses for their transgenic traits are later, and on January 13, 2012. Bayer CropScience's Drought Relief deadline for Liberty Link and/or Glytol traits January 15, 2012 for our area.

HOWEVER for SEED company participation for Drought Relief, see each company's individual program. Some of these deadlines are EARLIER than those for transgenic traits. I encourage producers to see the information provided by the various companies and posted on the Plains Cotton Growers Web site at:

http://www.plainscotton.org/seeddroughtrelief11.html

Producers should read the fine print and understand their appropriate deadlines.
If you have questions, contact your specific seed and/or trait company representative as soon as possible.

Variety Trial Update

In 2011, we planned and or established 21 variety projects across the state. Only three of those locations will be reported, and to date only one of those three have been harvested. The remaining two sites have received rainfall nearly every week for the past 6-8 weeks. The one trial we are able to report was in Beckham County under sprinkler irrigation. This was a small-plot replicated trial with 14 entries. Each variety was planted into four rows by 30 feet in length and replicated four times. Plots were seeded with a John Deere 1760 four row planter outfitted with a cone unit. In early-season, alley areas between plots were tilled to facilitate harvesting, and plots were maintained by the producer the same as the rest of the field. Final stand counts were

taken in July and final plant heights were taken in September. Each variety was evaluated for storm resistance prior to harvest. Harvest aids were applied by the producer, and plots were harvested with a two row stripper equipped with a bagging system, scale, and data logger to record weights. Samples were taken and ginned on a small plot gin, and lint samples were analyzed by the Fiber Biopolymer Research Institute at Lubbock. Micronaire, fiber length, uniformity, and strength were determined for each variety. This data was utilized to calculate loan value (assuming 21 color and leaf grade of 2). Although the following tables show results from the test, it should be emphasized that in any single year or location, specific variety performance may vary due to its response to soil type and environmental conditions, stresses during the season, and location in the state. For this reason, it is better to look at multiple years of data on a variety, as well as soil type, location, and growing conditions in the test area as compared to your area. Unfortunately this one trial is 1/3rd of our entire variety report for 2011 and actually ½ of the irrigated results. One of the remaining trials yet to be harvested is irrigated (Merlin Schantz at Hydro) and the other is dryland (Bill Steinert at Fairmont). Fortunately we did have a great year in 2010 and we encourage producers to also consider last year's data when making decisions for 2012. This data is always available on the web at one of two sites: www.osucotton.com or www.ntokcotton.org. Yield, turnout and net value data are presented in table 1 while plant measurements and fiber properties are presented in table 2.

2011 Darrell and Sherry Gamble – Erick, Oklahoma

Planted: May 23rd
Harvested: Nov 10th
Irrigation: Sprinkler
Soil type: Loamy Sand

Table 1. Harvest results from the Beckham County small plot replicated trial, Darrell and Sherry Gamble Farm, Erick, Oklahoma, 2011.

Entry	Lint turnout	Seed turnout	Burr cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/tech cost	Net value	
	---------- % ----------		---------- lb/acre ----------			--$/lb--	---------- $/acre ----------						
PHY 499 WRF	29.2	45.7	3628	1059	1657	0.5716	605	249	854	109	74	671	a
CG 3787 B2RF	26.8	46.2	3021	991	1712	0.5751	570	257	827	111	75	640	ab
FM 1740 B2F	27.1	46.6	3667	992	1707	0.5649	561	256	817	110	75	632	ab
CG 3156 B2RF	26.3	46.2	3804	1000	1757	0.5414	542	264	806	114	74	617	abc
PHY 367 WRF	24.8	45.1	4124	900	1669	0.5760	518	250	768	111	71	586	abc
ST 5458 B2RF	27.3	48.4	3308	905	1603	0.5715	517	241	758	99	74	585	abc
DP 1133 B2RF	26.0	43.9	3537	917	1554	0.5771	529	233	762	106	74	582	abc
AT 81220 B2RF	25.1	48.6	3387	850	1646	0.5704	485	247	732	102	65	565	abcd
DP 1032 B2RF	27.5	44.3	3041	838	1357	0.5683	477	204	680	91	69	520	bcd
AT 81277 B2RF	25.0	48.5	3080	770	1495	0.5733	441	224	666	92	65	508	cd
FM 2484 B2F	25.9	47.1	3034	794	1437	0.5763	458	216	673	91	74	508	cd
ST 4288 B2F	23.9	50.6	3099	742	1569	0.5755	427	235	662	93	69	500	cd
NG 4010 B2RF	23.8	48.7	2962	704	1445	0.5739	404	217	621	89	74	458	d
NG 4012 B2RF	23.9	46.0	2891	701	1325	0.5723	401	199	599	87	66	447	d
Test average	25.9	46.8	3278	869	1567	0.5709	495	235	730	100	72	558	
CV, %	4.8	3.4	19.0	16.6	15.0	1.0	17.0	15.0	16.1	14.4	---	18.6	
OSL	0.0001	0.0001	0.0888	0.0114	0.2256	0.0001	0.0231	0.2256	0.0668	0.0783	---	0.0798	
LSD	1.8	2.3	742†	206	NS	0.0082	120	NS	140†	17†	---	124†	

For net value/acre, means within a column with the same letter are not significantly different.

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, † indicates significance at the 0.10 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

$3.00/cwt ginning cost.

$300/ton for seed.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. In-season and fiber quality results from the Beckham County small plot replicated trial, Darrell and Sherry Gamble Farm, Erick, Oklahoma, 2011.

Entry	Final population	Final plant height	Storm resistance	Micronaire	Staple	Strength	Uniformity
	plants/acre	inches	1-9 visual scale*	units	32nds inch	g/tex	%
PHY 499 WRF	28,423	33.1	6.4	4.1	35.8	35.2	82.4
CG 3787 B2RF	21,889	29.6	6.6	4.3	36.8	31.6	82.4
FM 1740 B2F	20,582	29.0	5.8	4.5	36.3	30.4	81.7
CG 3156 B2RF	26,789	28.1	5.8	4.0	36.0	27.9	81.3
PHY 367 WRF	32,343	27.2	6.9	4.1	35.0	33.2	82.5
ST 5458 B2RF	26,463	26.9	6.1	4.7	36.8	32.6	81.6
DP 1133 B2RF	25,483	29.9	7.1	4.2	36.0	34.8	83.4
AT 81220 B2RF	29,076	27.9	6.1	4.4	36.5	30.0	81.7
DP 1032 B2RF	18,949	30.0	7.4	4.2	36.5	30.4	81.0
AT 81277 B2RF	25,156	28.6	5.9	4.3	34.0	32.3	81.3
FM 2484 B2F	32,343	29.7	5.5	4.1	35.8	32.1	81.7
ST 4288 B2F	28,096	27.1	6.5	4.4	37.3	32.2	82.0
NG 4010 B2RF	20,255	29.0	5.9	4.1	36.0	32.9	81.4
NG 4012 B2RF	25,483	31.2	6.8	4.0	36.3	32.1	81.6
Test average	26,027	28.9	6.4	4.2	36.1	32	81.9
CV, %	31.1	5.8	8.2	4.9	1.8	2.7	1.3
OSL	0.4293	0.0001	0.0001	0.0009	0.0001	0.0001	0.1746
LSD	NS	2.4	0.8	0.3	0.9	1.2	NS

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, NS - not significant.
*Visual storm resistance scale: 1=tight, 9=loose.

Assumes:
Value for lint based on CCC loan value from grab samples and FBRI HVI results.
Note: Color grades set to 21, leaf grades set to 2 for entire test.

Upcoming Meeting

Beltwide Cotton Conferences – Orlando, FL, Jan 3-6

The folks here at the OSU Southwest Research and Extension Center wish all of our clientele a safe and Merry Christmas and Happy New Year. 2012 is near and we all hope it is much more productive than 2011!

Editors

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SEND US A COMMENT BY EMAIL

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Newsletter in maintained by Jerry Goodson Extension Assistant.

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