FOCUS ON QUALITY – BREEDING THROUGH SPINNING: WHAT HAPPENED IN 1999? TEXAS-OKLAHOMA REGION

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Abstract

The growing environment in this large cotton production region (~ 6 million acres) is more diverse than across the entire cottonbelt. Planting begins in early-to-mid February in the lower Rio Grande Valley and continues through May and often into June on the High Plains. Boll development, therefore, occurs under very hot, dry conditions during June-August in South and Central Texas and under cooler temperatures (August-September) in the Rolling and High Plains. July and August are typically hot and relatively dry across the entire state. Only 30-35% of the total cotton acreage in Texas is capable of supplemental irrigation and even those acres do not have enough water to provide 100% of the crop water use. Therefore plant water stress is the single greatest limitation to productivity. Both water supply and temperature conditions during the boll-filling phase of development affect lint quality. High temperatures coupled with water stress during boll filling result in relatively short fibers with high micronaire in Central and South Texas. Cool temperatures during September result in low micronaire many years on the High Plains.

In 1999 the weather and associated cotton production and quality were more diverse than ever. The central and coastal areas of Texas received above average rain in June and July, which resulted in outstanding (record) yields and excellent fiber quality. The Corpus Christi office classed nearly 1.2 million bales that averaged 33.9 staple. Only 10.5% were 32 or less and 70% was 34 or greater. The Abilene classing office covers the Rolling Plains and Southwest Oklahoma and classed 841,064 bales as of January 20. About 25% of the acreage in this area have some irrigation. The area received essentially no rainfall in July and August, during the first 6 weeks of boll development. Yields were below average especially on the dry land. Staple length was shorter than normal averaging 32.8. Thirty-six (36.5%) percent of the crop had staple lengths less than 32 and 38.6% of the crop was 34 or longer. The Lamesa office covers the southern end of the High Plains, which has a majority of dry land production. As of January 20 the office classed over 622,000 bales. Rainfall was above average in the April-June period and all the cotton acreage was planted and got off to a good start. However, July and August were also way below average for rainfall but only slightly above average for temperature. Staple was slightly below normal averaging 33.1. Staple lengths of 32 or less comprised 32% of the total; whereas, 40% of the crop had staple lengths of 34 or greater. The Lubbock office covers the Central and Northern High Plains region and classed over 2.3 million bales as of January 20. Staple was shorter than normal averaging 32.7 with 40% of the crop having staple lengths of 32 or less and only 30% of the crop having 34 or greater.

Strength and micronaire were affected largely by growing region reflecting the predominant varieties grown and less by weather. Corpus Christi had 16% of the bales with micronaire of 5.0 or greater; this is less than the long term average for this area where boll maturation occurs in July and August when both day and night temperatures are very hot.

The Lubbock area had the highest average micronaire (46) reflecting the very warm conditions in late September and October and only 10.9% below 3.5.

The major fiber quality trait that was affected by the weather in the Texas-Oklahoma region was the fiber length. In the areas which received adequate rainfall or had irrigation during the first 6 weeks of flowering, the staple lengths were unaffected and reflected the genetic potential. In areas of the Rolling Plains and High Plains that were very dry during the July-August period, the staple length was 1 to 2 32nd's shorter than the genetic potential. Other fiber traits were largely unaffected by weather.

Table 1. Fiber quality for Texas and Oklahoma in 1999.

LOCATION	BALES CLASSED	STAPLE		
		MEAN	≤ 32	≥ 34
ABILENE	841,064	32.8	36.5	38.6
CORPUS	1,187,638	33.9	10.5	70
LAMESA	622,138	33.1	32.4	40
LUBBOCK	2,325,638	32.7	39.6	30

Table 1. Continued

LOCATION	STRENGTH			MICRONAIRE		
	MEAN	≤ 25	≥ 28	MEAN	<3.5	>4.9
ABILENE	27.3	10.6	46.8	42	6.3	5.7
CORPUS	26.2	11.6	17.1	44	2.5	15.9
LAMESA	28.2	2.6	67.2	42	8.1	1.8
LUBBOCK	28	2.4	64.9	46	10.9	3.9

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