Abstract

The overall quality of the 2004 American Upland cotton crop, which totaled about 17.2 million bales as of December 23, 2004 was significantly affected by unusual weather across several areas of the cotton belt. According to USDA official estimates, the 2004 Upland crop has the potential to be the largest on record, as much as 22.1 million 480 pound bales, up 23 percent from the 2003 crop. That estimate has not been realized to date due to significant harvest delays in Texas, Oklahoma and Kansas. Texas is expected to produce over seven million bales, partially due to unusually generous rains on the Plains during the growing season.

Rains became a threat to 2004 cotton starting in September, when the first of four hurricanes struck the southeastern states. The hurricanes hurt yields and quality in the southeastern states where mature fields were defoliated and ready to pick. Weather problems persisted until December 1, when almost eighty percent of the Texas Plains, Oklahoma, and Kansas cotton remained in soggy fields. The Desert Southwest and San Jaoquin Valley harvests were delayed by rain, and grades were subsequently lowered. As a result of this adverse weather during the fall, average fiber quality measurements were lower for color grade and extraneous matter than in 2003. A significant bright spot in quality was that staple length was longer than in many years. Micronaire was down slightly, and the length uniformity index remained very close to the same level as in 2003. Average strength increased significantly and was higher than any of the previous five crop years.

The percentage of official color grades that were 41/32 and higher was 82 percent compared to 96 percent for 2003 and 75 percent for the 2002 crop. The classer leaf grade average was 3.3 for 2004, which indicates the crop carried more leaf than the 3.1 average in 2003. Through December 23, extraneous matter was identified in 8.0 percent of the crop, much higher than the previous year's total of 3.1 percent and equal to the extraneous matter level of the 2000 crop.

The average micronaire for 2004 was 4.4, slightly lower than the 2003 average of 4.5 and continuing a slight downward trend that began last year. Strength measurements for U.S. Upland cotton continued to increase for the fifth consecutive year, reaching an average of 29.4 grams per tex in 2004, up noticeably from the average of 28.7 in 2003. Average length was noticeably longer for 2004 at 1.095 inches or 35.2 thirty-seconds. Length uniformity remained consistent with previous years at 81.4.

With almost three-quarters of the estimated 2004 American Pima crop classed, quality is a little lower than that of the 2003 crop. Grade 3 and higher accounted for 91.1 percent of the crop, compared to 99.1 percent the previous year. Average micronaire for Pima was consistent with previous years at 4.1. Pima length was shorter at 46.5 thirty-seconds and strength was lower at 40.3 grams per tex compared to 46.9 thirty-seconds and 40.5 grams per tex for the 2003 crop.

Introduction

Quality of the 2004 Upland and American Pima cotton crop as determined by USDA classification is compared with crops from the previous five years for the most important quality factors. The official color and leaf grades for American Upland and American Pima cotton, extraneous matter for Upland, plus instrument measurements for micronaire, strength, staple length, and the length uniformity index were compared. The comparisons were made for the entire United States Upland and Pima crops with the following regional comparisons made for Upland: the Southeast; the Mid-South; Texas-Oklahoma-Kansas; the Desert Southwest; and the San Joaquin Valley. The regional breakdown and USDA classing office groupings by region are as follows:

REGIONCLASSING OFFICES DATA INCLUDEDSoutheastFlorence, SC; Macon, GA; Birmingham, ALMid-SouthRayville, LA; Dumas, AR; Memphis, TNTexas-Oklahoma-KansasCorpus Christi, TX; Abilene, TX; Lamesa, TX; Lubbock, TX

Desert Southwest Phoenix, AZ San Joaquin Valley Visalia, CA

Discussion

Color Grade

The percentage of official color grades for American Upland in the 41/32 and higher-grade range was 82 percent for the 2004 crop, noticeably lower than the 96 percent for 2003. Percentages of 41/32 grades were also lower in 2004 when compared to the previous year in every region except the Desert Southwest. The largest decrease occurred in the Mid-South region. The Mid-South percentage of grades 41/32 and higher dropped from 97 to 74 percent. The extremely wet harvest season for 2004 had a negative impact on color grades compared to the excellent weather during the 2003 harvest.

Classer's Leaf Grade

The leaf grade average of 3.3 for the 2004 U.S. crop indicates that the cotton contains more leaf than the 3.1 average in 2003. The average leaf grade by region ranged from a low of 2.2 for the Desert Southwest to a high of 3.5 for Texas-Oklahoma-Kansas.

Extraneous Matter

Extraneous matter was identified in 8.0 percent of the 2004 crop. This is a significant increase from the 3.1 percent for 2003. The Texas-Oklahoma-Kansas region continued to account for the highest amount at 26.9 percent, a dramatic increase from 6.1 percent for this region last year. The late, wet harvest surely contributed to this high level of extraneous matter.

Micronaire

Micronaire averaged 4.4 for 2004 which was down slightly from the 4.5 average in 2003. The micronaire average by region ranged from a low of 4.0 for Texas-Oklahoma-Kansas to a high of 4.6 for the Desert Southwest. The biggest change by region occurred in Texas/Oklahoma/Kansas where the average mike dropped from 4.4 in 2003 to 4.0 in 2004.

Strength

Average strength for the 2004 crop was 29.4 grams per tex, up significantly from the 28.7 average in 2003. The U.S. crop average strength has increased each year since the 2000 crop which averaged 27.6 grams per tex. The region with the largest increase in strength was the Mid-South, where the average strength went from 28.2 grams per tex in 2003 to 29.0 in 2004.

Length

The 2004 Upland crop averaged 35.2 thirty-seconds of an inch in length. This was the longest average since 1997 when the crop averaged 35.1, and it is even more notable in a year when the fiber length in the San Joaquin Valley decreased almost a full thirty-second of an inch. Average length ranged from 34.8 thirty-seconds in the Southeast to 36.5 in the San Joaquin Valley. All regions were longer in 2004 than the previous year except the Desert Southwest and the San Joaquin Valley. The largest regional changes in fiber length from 2003 to 2004 were 0.9 of a thirty-second of an inch in the Texas/Oklahoma/Kansas region and the San Joaquin Valley. The change was positive in Texas/Oklahoma/Kansas however, and negative in the San Joaquin Valley.

Length Uniformity

The average length uniformity index increased slightly for the 2004 crop to 81.4. This is a slight increase over the pattern of crop years 1998 to present, when the length uniformity index remained in a narrow range between 81.1 and 81.4. Length uniformity ranged from 80.8 in the Desert Southwest to 81.7 in the San Joaquin Valley when comparing the five regions for 2004.

American Pima

American Pima cotton color and leaf grades were first separated for the 2001 crop harvest. Pima cotton with Grade 3 and higher color accounted for 91.1 percent of the 2004 crop. This was lower than any of the previous five years. The Micronaire average for this cotton was 4.1, consistent with previous year averages. The average length was 46.5 thirty-seconds of an inch, 0.4 thirty-seconds of an inch shorter than the previous year. The 2004 average strength of 40.3 grams per tex for American Pima was down slightly from the 2003 crop average of 40.5.

Summary

The 2004 U. S. American Upland Crop quality will be remembered as the first one to show advancement in average fiber length for many years. This came after several years of concern with the lack of advancement in that quality factor. Overall, 55 percent of the crop fell in the base quality for all factors measured compared to 55.9 percent for 2003 and 34.0 percent for 2002 (white color grades Strict Low Middling or higher, leaf grade 1 to 4, no extraneous matter, length of 34 thirty-seconds and longer, strength of 26.5 grams per tex and higher, micronaire of 3.5 to 4.9, and a uniformity index of 80 and higher). Color grades of 41/32 and higher accounted for 82 percent of the crop, leaf grades of 4 and higher accounted for 96.2 percent and the average leaf grade was 3.3. The percentage of extraneous matter was up from the previous year to 8 percent. Micronaire was slightly lower than the three previous years with an average of 4.4. The 2004 crop Staple length average of 35.2 was the longest in many years. The average strength was higher at 29.4 grams per tex than any of the past five years. Length Uniformity index was only slightly higher at 81.4.

The 2004 American Pima crop quality was a little lower than that of 2003. Color and leaf grades were the lowest in the five years compared. Micronaire average remained constant at 4.1. The average length was the third longest in the five years compared, even though it was shorter than the previous year. The average strength was at 40.3 grams per tex, which was lower than the three previous crops.

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States
2003	94.6%	97.0%	94.8%	96.1%	98.5%	96%
2004	89.5%	73.7%	82.7%	98.0%	94.2%	82%

Table 2. Comparison of 2003 and 2004 Upland crops - Average Leaf Gr	ade
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Table 2. Comparison of 2003 and 2004 Upland crops – Average Leaf Grade							
Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States	
2003	3.4	3.4	2.8	2.4	2.5	3.1	
2004	3.4	3.4	3.5	2.2	2.6	3.3	

Table 3. Comparison of 2003 and 2004 Upland crops – Extraneous Matter

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States	
2003	3.0%	1.0%	6.1%	6.9%	0.9%	3.1%	
2004	3.4%	1.0%	26.9%	3.6%	1.0%	8.0%	

Table 4. Comparison of 2003 and 2004 Upland crops - Micronaire

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States
2003	4.3	4.6	4.4	4.7	4.1	4.5
2004	4.5	4.5	4.0	4.6	4.4	4.4

Table 5. Comparison of 2003 and 2004 Upland crops - Strength

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States
2003	27.9	28.2	29.2	28.9	32.6	28.7
2004	28.6	29.0	29.6	29.2	32.6	29.4

Table 6. Comparison of 2003 and 2004 Upland crops - Length

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States
2003	1.071	1.079	1.070	1.104	1.164	1.082
2004	1.084	1.094	1.095	1.107	1.136	1.095

Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Vallev	United States
2003	34.4	34.6	34.3	35.5	37.4	34.7
2004	34.8	35.1	35.2	35.5	36.5	35.2
Table 8. Compa	arison of 2003 ar	nd 2004 Upland	crops – Uniformity			
Cron Vear	Southeast	Mid-South	Texas/Oklahoma	Desert	San Joaquin	United
Crop rear	Southeast	Mid-South	Kansas	Southwest	Valley	States
2003	80.9	81.6	81.1	80.5	82.0	81.3
2004	81.2	81.7	80.9	80.8	81.7	81.4
Table 9. Compa	arison of 2003 ar	nd 2004 Upland	crops – Base Qualit	y and Higher		
Crop Year	Southeast	Mid-South	Texas/Oklahoma Kansas	Desert Southwest	San Joaquin Valley	United States
2003	57.5%	56.5%	44.5%	49.2%	89.0%	55.9%
2004	60.2%	56.4%	37.8%	56.5%	84.0%	55.0%
Table 10. Com	parison of 2003 a	and 2004 crops	– American Pima Q	uality		
Crop Year	Grade 3 Higher	& Mici	ronaire Le	ngth	Staple	Strength
2003	99.1%		4.1 1.	364	46.9	40.5
2004	91.1%		4.1 1.	354	46.5	40.3

Table 7. Comparison of 2003 and 2004 Upland crops – Staple