

Short Staple Variety Trial in Virden, NM, 2000

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Abstract

Twelve varieties were tested including three New Mexico Acalas and one Acala from Buttonwillow Research in California, three roundup ready varieties, a buctril resistant variety, a Bollgard variety and three other varieties. The highest yielding variety in the trial was FM 989 with a yield of 1046 pounds of lint per acre. It was also the highest yielding variety in the Cochise County trial the past two years, but had not been grown in Hidalgo or Greenlee Counties before. BW 9802, a variety from Buttonwillow Research in California, came in a close second. Interesting HVI data are also included in this report.

Introduction

In 1999 nearly all the cotton in the Duncan/Virden valley was lost due to a severe hail storm, so no data were collected. The year before hail had damaged the plots, so this year's study will be the first good data for several years. This study is a sister trial to the varietal evaluation on Cochise County this year. The majority of the varieties included have not been tested in the county before. This test is part of the on going research to evaluate the best cultivars of all the economical crops to aid farmers in the area with their variety choices.

Materials and Methods

This variety trial was planted on the Jones/Swapp farm in Virden, NM, using the cooperator's equipment and managed according to their cultural practices. The varieties were planted in two row 36-inch row spacing plots on the Jones/Swapp farm. There were four replicates planted on each of the farms. The following crop histories provide details on how the fields were managed:

Crop History

Previous crop: Grain sorghum

Soil type: Pima sandy loam

Planting date: 1 May 2000

Rate: 115 lbs/ac

Fertilizer: 150 pounds/ac 18-46 at planting, 200 pounds/ac urea

Herbicide: Treflan pre-plant

Insecticide: None

Fungicide: None

Pix/Prep: None

Defoliation: None

Irrigation: Furrow irrigated

Harvest date: 19 December

Heat units (86/55EF) to 1st frost (1 Nov): 3178 as calculated from data at the Bonita AZMET station.

The plots were picked using the cooperator's equipment and plots from 2 reps were weighed together using a basket scale beside the module builder. Ten boll samples were taken from each plot prior to harvest to determine boll weights and these were ginned to determine percent lint turnout. These ginned hand samples were sent for HVI analysis.

Results and Discussion

Weather conditions were slightly above normal for cotton stand establishment in 2000. A paragraph on this subject is found in reference 1, which will be found elsewhere in this volume. Abnormal rainfall in June and then again in the month of October made the weather year somewhat unique.

Table 1 contains the yield and other agronomic values from the varieties studied on the Jones/Swapp farm. FiberMax 989, a variety with Australian parentage, was the highest yielding variety. This was a bit of a surprise, because it is a fairly long season variety, but on the other hand, it had topped the Cochise County trial, the past two years (2,3). It was followed closely, in yield, by BW 9802, a variety from Buttonwillow Research in California. SureGrow 521RR a Roundup Ready variety derived from SG 125 came in behind the Buttonwillow variety. This is significant because it contains the herbicide resistance trait being sought in the area to help with weed control. The newest Acala variety from New Mexico came in number five, behind 1517-95, the next to the last release from NM. Percent lint turnout varied by variety with BXN 47 and BW 9605 exhibiting very high values. Plant heights are shown in the table along with plant populations. Differences will be left for individual study by the reader.

Table 2 has plant mapping values and boll weight data from the varieties in the study. The first column has First Fruiting Branches (FFB) listed. Variability between varieties was not significantly different and all were in the acceptable range. The number of nodes varied a little bit and were lower than normal. This increased the Height to Node Ratios (HNR). The HNR values indicated that the plants had grown vigorously during the growing season. The average boll weight was high, as it normally is at the higher elevations. BW 9605 an Acala from California had the largest bolls.

Table 3 contains HVI values for all varieties tested at this site. The longest, strongest fiber in the trial was found in FiberMax 989. This was a bit of a surprise, as its fiber characteristics exceeded those of the best New Mexico Acala, 1517-99. Its micronaire (MIC) value was low, indicating a very fine fiber. The next best fiber came from the New Mexico Acalas, 1517-99 and 1517-91. The high yield seen with the FM 989, coupled with its excellent fiber would make it a good candidate for production in the area.

References

1. Clark, L.J. 2001. Short staple variety trials in Cochise county, 2000. Cotton, A College of Agriculture and Life Sciences Report, The University of Arizona, Tucson, AZ. *In this publication.*
2. Clark, L.J. 2000. Short staple variety trial in Cochise County, 1999. Cotton, A College of Agriculture and Life Sciences Report, The University of Arizona, Tucson, AZ. Series P-121, pp. 116-120.
3. Clark, L.J. 1999. Short staple variety trial in Cochise County, 1998. Cotton, A College of Agriculture and Life Sciences Report, The University of Arizona, Tucson, AZ. Series P-116, pp. 142-1484.

Acknowledgment

Appreciation is expressed to the Jones and Swapp families for their interest and cooperation in these studies. Seed was provided by New Mexico Crop Improvement and several other seed companies.

Table 1. Lint yields and other agronomic data from Upland/Acala trial in Virden, NM, 2000.

Variety	Lint Yield	% Lint	Plant Height	Plants per Acre
FiberMax 989	1046.1 a	36.1 abc	34.3 ab	44468 ab
BW 9802	1014.3 a	33.3 ef	32.0 b	41745 abc
SureGrow 521RR	913.0 ab	35.1 bcd	33.0 b	29948 b-e
1517-95	876.6 b	33.1 ef	32.3 b	37208 a-e
1517-99	837.6 bc	34.7 cde	39.5 b	38115 a-d
Paymaster 1560BG	835.9 bc	36.2 abc	32.0 b	32670 b-e
DP 420RR	790.7 bcd	35.0 bcd	33.0 b	29948 b-e
BXN 47	776.6 b-e	37.3 a	35.0 ab	28133 cde
FM 819	716.2 cde	36.4 ab	31.3 b	49459 a
BW 9605	689.9 de	37.3 a	31.5 b	24049 de
1517-91	654.7 de	33.0 f	35.0 ab	22688 e
DP 425RR	644.5 e	33.9 def	31.5 b	34485 b-e
Average	816.3	35.1	33.4	34409
LSD(05)	129.1	1.49	5.69	13151
CV(%)	7.18	1.93	7.75	17.4

Table 2. Plant mapping and boll weight data from Upland/Acala variety trial in Virden, NM, 2000.

Variety	FFB	Nodes	HNR	Boll Weight
FiberMax 989	8.0 a	20.3 a	1.69 cd	6.18 a
BW 9802	6.0 a	18.3 ab	1.75 bcd	5.45 c
SureGrow 521RR	5.5 a	17.0 b	1.94 ab	5.68 bc
1517-95	7.0 a	20.8 a	1.57 d	5.68 bc
1517-99	6.8 a	19.0 ab	2.08 a	5.68 bc
Paymaster 1560BG	6.0 a	17.3 b	1.85 bc	5.62 c
DP 420RR	6.0 a	19.8 ab	1.67 cd	5.75 ab
BXN 47	6.3 a	19.8 ab	1.77 bcd	5.40 c
FM 819	6.8 a	18.5 ab	1.69 cd	4.93 d
BW 9605	5.8 a	18.5 ab	1.71 cd	6.40 a
1517-91	5.5 a	19.3 ab	1.82 bc	6.10 ab
DP 425RR	7.3 a	18.5 ab	1.70 cd	5.55 c
Average	6.4	18.9	1.77	5.7
LSD(05)	3	2.52	0.20	0.4
CV(%)	21.1	6.05	5.2	3.17

Table 3. HVI data from Upland/Acala variety trial in Virden, NM, 2000.

Variety	Grade	Mike	Length	Strength	Uniformity	RD	+b
FiberMax 989	41	4.1	1.23	32.3	84	75	67
BW 9802	41	4.7	1.11	27.6	83	73	73
SG 521RR	41	3.6	1.13	28.3	83	74	67
1517-95	51	4.1	1.11	27.5	82	73	63
1517-99	51	4.2	1.21	30.4	84	72	67
PM 1560 BG	51	4.5	1.1	27.6	82	72	68
DP 420RR	51	4.7	1.11	24.6	83	74	64
BXN 47	41	5	1.12	26	83	73	76
FM 819	51	4.3	1.14	28.6	82	72	63
BW 9605	41	4.3	1.16	31.8	84	74	67
1517-91	51	4.1	1.2	32.7	84	73	70
DP 425RR	51	4.2	1.13	27.8	82	73	64
Average	47	4.3	1.15	2.88	83	73	67