Upland Cotton Regional Variety Trial, 2000

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Abstract

Each year the University of Arizona conducts upland cotton variety tests to evaluate the performance of a diverse set of experimental and commercial varieties in Arizona. One such program is the Regional Variety Test (RVT). In 2000, we evaluated a total of 61 varieties at one or more locations in Arizona. These varieties were submitted to us for testing by 13 private seed companies and three public breeding programs. This report presents the results of the trials conducted at Maricopa, Marana, Safford and Yuma.

Introduction

Variety selection is the first and perhaps most critical decision cotton producers make each year. A productive variety provides a solid foundation for building a profitable cultural program. Conversely, even the best growers find it difficult to coax profitable yields from a poor variety that is not adapted to the region.

Many sources of information are available to growers to help them choose a good variety. The best source of information, of course, is personal experience with a particular variety on the farm, but given the large number of varieties to choose from, it is impossible to try them all. Many growers, therefore, consider performance data from variety trials that are conducted by seed companies and universities within the region of interest. University variety trials provide growers with unbiased head-to-head comparisons of many varieties from different seed companies. Data generated through these testing programs also are useful to seed companies and other segments of the cotton industry.

The University of Arizona conducted three different upland cotton variety testing programs in 2000- the Advanced Strains Test, the Regional Variety Test, and the State-wide Upland Cotton Variety Test. The Regional Variety Test (RVT) is designed to evaluate a diverse group of commercial varieties in trials that are conducted on research stations throughout the cotton producing regions of Arizona. The RVT is part of a belt-wide program, the National Cotton Variety Testing Program, which is conducted through a cooperative effort among the USDA and various university programs.

The purpose of this report is to present our results from the 2000 Regional Variety Test.

Materials and Methods

We evaluated a total of 61 varieties in one or more trials in 2000. Thirteen private seed companies and three public breeding programs entered varieties into the trials. Four of the varieties; Maxxa, NUCOTN 33B, Atlas, and SG747 are national standards.

We planted trials at four University of Arizona research stations in 2000: Yuma Valley Ag Center (YAC), Maricopa Agricultural Center (MAC), Marana Ag Center (MAR) and Safford Ag Center (SAC). We planted two tests at MAC; an early season test (harvested 15 September) and a full season test (harvested 29 September). The early season test was terminated when SG747 reached maturity, while the full season test was terminated when NuCOTN 33B reached maturity.

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The basic experimental procedures were similar for all trials. Plots at MAC, MAR and YAC were four rows wide spaced 40 inches apart and plots at SAC were two rows wide spaced 36 inches apart. The plots varied from 37' to 46' feet long. Plots were arranged in a randomized complete block design with five replications at MAC and MAR and four replications at YAC and SAC. We used a high seedling rate of approximately 30 lbs/A and then thinned all plots to a final stand of three plants per foot of row. We planted the YAC test on 10 March, the two MAC tests on 13 April, the MAR test on 20 April and the SAC test on 21 April. The target population of approximately 40,000 plants per acre was reached for most of the plots, however a few of the plots with unacceptable stands were discarded from the data set.

All tests were grown using standard herbicide and fertility regimes. We used IPM practices for conventional varieties to control pink-bollworm, lygus and whitefly in all five trials.

The plots at MAR were visually evaluated for foliar symptons of *Verticillium* wilt just prior to defoliation. Each plot was given a score ranging from 0 for no visible symptoms to 9 for extensive foliar symptoms. The plots at MAC and YAC were visually evaluated for extent of lodging with 1= no lodging and 5=extensive lodging.

A 50 boll sample from each plot in three replications at each site was picked just prior to machine harvest. Boll size, lint percent and seed percent were determined from this sample and the lint was sent to ITC (International Textile Center) for HVI analysis. The middle two rows of each 4-row plot were mechanically harvested for seed cotton weight. The lint yield was calculated from the lint percent obtained by the 50 boll samples. Plant height was measured from three replications of each test immediately after harvest. The plots were harvested on 7 September at YAC, 15 September for the early season test at MAC, 29 September for the late season test at MAC, 5 October at SAC and 20 November at MAR. The late date for MAR harvest was due to unusual heavy rain in October.

We conducted an analysis of variance on the data for each test and calculated protected Least Significant Difference (LSD) values for all applicable traits.

Results and Discussion

In the early season test at MAC, the average lint yield of the 28 entries was 1523 lbs/A. The range was from 2002 (SG747) to 1191 lbs/A (PG094) with SG747 yielding significantly more than the other entries. The value per acre($/A) and the premium(cents/lb) are listed in Table 1. A negative number in the premium column denotes a discount on the price paid. Agronomic characteristics for the early season at MAC is listed in Table 2. Note that both the full season and the early season tests experienced some lodging shortly after peak bloom.

The mean for the full season test at MAC was slightly higher than the early season test at 1639 lbs of lint per acre. The range was 2030 (SG747) to 1207 lbs/A (Atlas). As in the early season test, SG747 yielded significantly higher than the other 23 varieties (Table 3). SG747 had the greatest value per acre even though it was heavily discounted because of fiber quality.

In the test at MAR, the average lint yield was lower at 1144 lbs/A due to the cotton stringing out after heavy rains in October. PM1560BR, AP9257, SG747, SG501BR and STX9903RR yielded significantly higher than the other 31 varieties (Table 5). AP9257 and PM1560BR produced the highest value per acre. The correlation between yield and *Verticillium* wilt susceptibility was not as apparent as it was last year (Table 6).

The average lint yield at SAC of the 43 entries was 1030 lbs/A. The range was from 1329(PM1560BR) to Atlas (608). PM1560BR, DP655, DP458BR, Delta Pearl and NUCOTN33B produced the highest yields (Table 7). Agronomic characteristics for the SAC trial are listed in Table 8.

The average lint yield at YAC of the 28 entries was very good at 1941 lbs/A (Table 9). The range was from 2466 (SG747) to 1394 (PG094). SG747, SG215BR, and SG501BR were the highest yielding varieties in this test. The variety with the highest value, however, was SG125BR because of the higher premium paid on the fiber qualities relative to SG747 and SG215BR. Agronomic characteristics are listed in Table 10. Lodging of some varieties in this test was extensive due to strong winds that struck shortly after peak bloom.

2000 was a good year for cotton production in Arizona. The only serious weather problem was a very wet October in Marana, which delayed harvest and probably decreased the yields in this test. Heat stress was present in the low desert elevations, but was not unusually high for Arizona. Insect pressure in all five tests were light.

Acknowledgements

We wish to thank the seed companies for their cooperation and support of the variety testing program at the University of Arizona. The land and resources provided by the University of Arizona Agricultural centers at Yuma, Maricopa, Marana and Safford are also greatly appreciated.

Table 1. Lint yield, value, and fiber properties of 28 upland cotton varieties in the early season test at MAC, 2000.

Entry	Value	Lint Yield	Mic	Fiber Length	Staple Length	Unifor-mity Ratio	Fiber Str.	Elon-gation	Rd	+b	Premium
	($/A)	(lbs/A)		(in)	(32nds)		(g/tex)				(cents/lb)
SG747	940	2002	5.3	1.10	35.0	83.8	25.0	7.3	79.0	9.7	-3.52
SG215R	790	1780	5.4	1.06	34.0	82.8	23.4	7.0	79.4	10.0	-6.05
DP20B	877	1723	5.0	1.11	35.7	84.2	25.6	6.8	81.4	8.8	0.43
STV474	807	1711	5.4	1.08	34.7	83.3	26.5	6.4	77.8	9.6	-3.30
DP451BR	811	1695	5.3	1.13	36.3	84.7	25.5	6.5	81.5	8.7	-2.58
DP422BR	813	1668	5.1	1.10	35.7	83.5	24.9	7.2	81.7	8.9	-1.72
STX9903RR	811	1631	5.1	1.11	35.7	83.2	26.8	6.5	78.1	9.8	-0.73
DP428B	780	1627	5.4	1.12	36.0	84.4	26.0	6.6	82.6	8.0	-2.53
BR9802	764	1598	5.7	1.10	35.3	84.7	27.9	6.5	79.8	9.4	-2.67
AP9257	811	1584	5.1	1.11	35.7	84.2	27.4	6.4	82.1	8.3	0.73
6M045	810	1578	5.0	1.11	35.7	84.0	29.6	6.9	80.1	9.4	0.88
NuCOTN33B	779	1559	5.1	1.13	36.7	83.8	28.6	6.7	81.4	8.7	-0.50
SG501BR	719	1541	5.3	1.08	34.7	84.8	26.2	7.1	79.7	9.4	-3.80
BR535	723	1520	5.5	1.11	35.7	83.3	27.0	6.2	79.3	8.8	-2.87
FM958	824	1516	4.8	1.16	37.0	84.7	30.6	5.9	81.1	8.3	3.93
PSC355	744	1494	5.1	1.10	35.3	84.3	27.6	7.3	78.5	9.7	-0.63
BR9803	731	1480	5.3	1.13	36.3	84.5	29.8	6.3	79.5	8.8	-1.07
SG125BR	702	1479	5.3	1.08	35.0	83.5	24.2	6.9	79.7	9.6	-2.98
BR9801	729	1455	5.1	1.12	36.0	84.9	29.2	6.3	79.4	9.0	-0.35
PSC413	732	1426	5.0	1.13	36.3	84.4	26.7	6.9	78.0	9.6	0.85
PG092	684	1412	5.4	1.11	35.7	83.9	26.9	6.3	79.4	9.1	-1.98
PSC952	666	1391	5.3	1.08	35.0	83.0	27.0	6.8	79.6	9.4	-2.58
GA894	756	1389	4.8	1.16	37.3	84.4	31.5	6.2	80.1	9.0	3.95
GA161	709	1338	4.9	1.16	37.3	84.1	30.7	6.1	79.3	9.3	2.52
PG093	716	1320	4.2	1.17	37.3	85.5	29.1	6.5	82.0	8.9	3.77
HS12	648	1292	5.0	1.14	36.7	83.6	30.1	6.1	80.9	8.9	-0.32
PG091	615	1243	5.2	1.16	37.0	84.7	29.8	6.4	79.6	9.3	-0.98
PG094	623	1191	4.9	1.09	35.0	83.9	27.4	6.3	79.3	9.2	1.88
Mean	754	1523	5.1	1.12	35.9	84.1	27.5	6.6	80.0	9.1	-0.79
LSD	46	93	0.1	0.02	0.8	.	1.0	0.3	0.9	0.3	1.64
CV	7	7	2.1	1.83	2.0	1.1	3.3	3.8	1.0	2.7	-179.12

Table 2. Agronomic Characteristics of 28 upland cotton varieties in the MAC Early Season Test, 2000.

Entry	Plant height	Lint Percent	Seed index	Lint index	Boll weight	Seeds per boll	Lodging Rating
	(m)	(%)	(g/100)	(g/100)	(g)		
SG747	1.03	41.8	9.6	7.0	5.5	33.3	2.8
SG215BR	1.15	41.4	10.0	7.2	5.6	32.1	3.2
DP20B	1.09	39.8	9.8	6.6	5.3	32.1	3.2
STV474	1.03	42.2	10.0	7.4	5.2	29.5	3.6
DP451BR	1.21	37.2	10.7	6.4	5.5	31.9	3.2
DP422BR	1.04	38.8	10.7	6.9	5.7	32.3	4.6
STX9903RR	1.04	41.0	10.5	7.4	5.2	28.6	3.6
DP428B	1.04	38.2	10.7	6.6	5.5	31.8	3.4
BR9802	1.14	37.9	10.7	6.6	5.8	33.4	2.8
AP9257	1.16	40.6	9.4	6.5	5.2	32.5	4.0
6M045	1.11	39.8	9.5	6.4	5.3	33.1	4.2
NuCOTN33B	1.19	37.9	9.4	5.8	5.4	35.1	2.2
SG501BR	1.14	39.6	10.7	7.1	5.4	29.9	3.0
BR535	1.04	34.1	12.3	6.4	5.9	31.3	2.4
FM958	1.05	40.3	10.9	7.5	5.8	31.4	3.0
PSC355	1.05	39.3	9.9	6.5	4.7	28.1	1.6
BR9803	1.05	37.7	10.0	6.1	5.2	32.3	3.2
SG125BR	1.19	39.5	10.5	6.9	5.5	31.3	2.8
BR9801	1.11	37.7	10.1	6.2	5.0	30.6	3.2
PSC413	0.90	38.8	10.1	6.5	4.9	29.2	2.4
PG092	0.99	38.6	10.7	6.8	5.1	28.9	2.6
PSC952	1.15	39.9	9.5	6.4	5.2	32.6	3.2
GA894	1.28	38.4	12.0	7.6	6.1	31.1	3.6
GA161	1.16	38.4	11.6	7.2	5.7	30.3	3.4
PG093	0.90	38.9	10.3	6.6	5.3	31.0	2.4
HS12	1.21	38.3	9.7	6.1	5.2	32.6	2.4
PG091	1.15	34.8	10.8	5.8	5.6	33.8	2.0
PG094	0.91	35.4	10.9	6.1	5.3	30.7	3.2
Mean	1.09	38.8	10.4	6.7	5.4	31.5	3.0
LSD	0.09	0.7	0.4	0.3	0.2	1.7	0.6
CV	7.85	1.5	3.6	4.2	3.6	4.6	20.3

Table 3. Lint yield, value, and fiber properties of 24 Upland cotton entries in the full-season test at MAC, 2000.

Entry	Value	Lint yield	Mic	Fiber length	Staple Length	Uniformity ratio	Fiber Strength	Elongation	Rd	+b	Premium
	($/A)	(lbs/A)		(in)	(32nds)		(g/tex)				(cents/lb)
SG747	942	2030	5.5	1.10	35.3	84.2	24.6	7.1	79.2	9.1	-4.03
BXN47	924	1886	5.2	1.11	35.3	83.5	27.4	6.7	79.7	9.0	-1.47
6M045	926	1853	5.2	1.13	36.3	84.2	28.2	6.9	81.5	8.6	-0.47
STV474	862	1821	5.3	1.09	35.3	83.8	26.7	6.4	78.7	9.2	-3.10
NuCOTN33B	887	1814	5.2	1.10	35.3	82.9	26.8	6.5	83.0	7.6	-1.53
AP7126	872	1752	5.1	1.13	36.0	82.7	27.6	6.3	82.6	7.9	-0.67
GC377	847	1744	5.3	1.12	36.3	84.9	27.5	6.8	82.7	7.7	-1.88
HS12	829	1733	5.4	1.12	36.0	83.5	28.8	6.1	81.8	7.9	-2.63
DP458BR	825	1729	5.3	1.12	36.0	83.5	27.1	6.5	82.9	7.8	-2.72
GC271	840	1685	5.0	1.12	35.7	83.7	28.4	6.4	81.0	8.2	-0.62
DP675	798	1673	5.4	1.11	35.7	83.1	29.7	6.6	80.5	8.3	-2.73
PSC952	755	1628	5.3	1.07	34.0	84.0	26.5	6.9	79.2	8.8	-4.12
PSC355	809	1627	5.1	1.10	35.3	84.0	27.1	7.3	79.8	8.6	-0.72
PM1560BR	791	1626	5.2	1.10	35.3	83.3	27.2	6.2	81.4	7.9	-1.80
GC114	855	1592	4.8	1.11	35.7	83.9	28.2	6.3	79.3	8.8	3.28
PSC413	797	1582	5.1	1.09	35.3	83.5	27.6	6.9	78.5	9.0	-0.08
PG095	818	1578	4.8	1.08	34.7	83.6	28.6	6.1	78.8	8.9	1.40
Delta Pearl	808	1544	4.9	1.15	36.7	82.0	28.1	5.8	84.0	7.4	1.87
GA161	793	1531	5.0	1.18	37.7	85.1	31.4	6.1	80.4	8.3	1.35
GA894	796	1505	4.9	1.15	37.0	84.1	30.7	6.1	81.0	8.3	2.45
FM966	771	1489	4.9	1.13	36.3	83.9	31.9	5.4	82.2	8.0	1.32
FM989	782	1445	4.9	1.13	36.7	83.5	30.3	6.0	80.5	8.2	3.65
Maxxa	683	1250	4.4	1.14	36.3	85.2	34.0	6.2	81.9	8.6	4.18
Atlas	588	1207	5.0	1.04	33.3	83.2	27.8	6.8	80.8	7.8	-1.73
Mean	817	1639	5.1	1.11	35.7	83.7	28.4	6.4	80.9	8.3	-0.45
LSD	34	68	0.2	0.02	0.8	.	0.9	0.2	1.0	0.3	1.81
CV	5	5	2.8	1.66	1.9	1.2	2.6	3.1	1.0	2.7	-347.98

Table 4. Agronomic characteristics of 24 Upland cotton entries in the full season test at MAC, 2000.

Entry	Plant height	Lint percent	Seed index	Lint index	Boll weight	Seeds Per boll	Lodging Rating[1]
	(m)	(%)	(g/100)	(g/100)	(g)		
SG747	1.15	41.3	10.6	7.6	5.7	30.8	2.4
BXN47	1.18	40.6	10.3	7.2	4.9	27.9	3.8
6M045	1.15	39.3	9.7	6.4	5.4	33.3	4.2
STV474	1.12	40.8	10.5	7.3	5.3	29.4	3.8
NuCOTN33B	1.23	38.2	9.4	6.0	5.0	32.4	2.2
AP7126	1.13	39.9	9.2	6.2	5.2	33.1	2.8
GC377	1.25	40.6	8.6	5.9	4.9	33.5	2.8
HS12	1.23	37.5	10.0	6.0	5.2	32.0	2.2
DP458BR	1.23	39.5	9.1	6.0	5.3	34.7	1.4
GC271	1.07	36.3	10.1	5.8	4.8	30.3	2.4
DP675	1.21	38.6	9.8	6.3	5.3	32.2	3.0
PSC952	1.25	39.3	9.4	6.2	5.0	31.8	2.6
PSC355	1.18	38.5	10.1	6.4	4.7	28.3	2.2
PM1560BR	1.19	38.9	9.9	6.4	5.3	32.2	2.8
GC114	1.12	36.3	10.6	6.2	4.5	26.7	3.6
PSC413	1.05	38.2	10.2	6.4	4.8	28.6	2.6
PG095	1.13	36.6	10.7	6.3	4.9	28.4	3.2
Delta Pearl	1.26	39.9	8.8	5.9	4.6	31.0	2.6
GA161	1.25	37.4	12.0	7.4	5.9	29.8	3.2
GA894	1.24	37.2	12.0	7.5	6.1	31.0	3.8
FM966	1.22	38.8	12.0	7.7	5.9	29.8	1.6
FM989	1.19	38.7	10.9	7.0	5.7	31.6	4.6
Maxxa	1.16	40.5	12.1	8.4	5.5	26.5	1.6
Atlas	1.13	34.1	11.5	6.1	5.6	31.0	2.2
Mean	1.18	38.6	10.3	6.6	5.2	30.7	2.8
LSD	0.06	0.8	0.4	0.3	0.3	2.0	0.6
CV	4.58	1.9	3.7	3.7	5.7	5.7	22.2

[1] Visual score of lodging; 1=no lodging, 5=extensive lodging

Table 5. Lint yield, value per acre and fiber properties of 36 Upland cotton entries in MAR test, 2000.

Entry	Value	Lint yield	Mic	Fiber length	Staple Length	Unifor-Mity Ratio	Fiber Str	Elon-gation	Rd	+b	Premium
	($/A)	(lbs/A)		(in)	(32nds)		(g/tex)				(cents/lb)
PM1560BR	733	1392	4.9	1.17	37.7	84.6	29.5	7.3	79.6	8.2	2.18
AP9257	751	1391	4.8	1.17	37.3	84.8	27.9	7.2	81.4	7.3	3.55
SG747	641	1348	5.4	1.16	37.3	84.9	24.4	7.7	78.1	8.5	-2.93
SG501BR	644	1304	5.2	1.13	36.3	85.7	26.7	7.6	79.2	8.3	-1.03
STX9903RR	618	1299	5.3	1.11	35.7	83.6	26.3	7.2	78.2	8.5	-2.85
GC114	668	1268	4.8	1.17	37.3	85.1	28.4	6.9	78.8	8.7	2.18
DP565	659	1255	4.9	1.20	38.3	84.0	28.0	6.8	81.0	7.7	2.07
DP675	671	1238	4.8	1.20	38.3	85.3	29.8	7.4	80.4	8.2	3.80
DP458BR	645	1227	4.9	1.18	37.7	84.2	28.9	7.4	80.9	7.5	2.10
BR9802	586	1224	5.6	1.15	36.7	86.0	28.5	7.3	78.2	8.4	-2.57
AP7126	639	1220	4.9	1.20	38.0	83.7	28.3	6.9	80.6	7.8	1.93
PSC413	609	1220	5.1	1.16	37.3	85.1	26.3	7.4	78.2	8.4	-0.53
NuCOTN33B	633	1200	4.9	1.20	38.0	85.7	27.8	7.3	80.9	7.7	2.27
FM966	636	1193	4.9	1.19	38.0	84.7	33.2	5.9	80.5	7.4	2.83
SG125BR	598	1186	5.0	1.13	36.3	83.6	25.2	7.8	79.4	8.0	-0.08
FM958	605	1173	5.0	1.19	38.0	84.4	30.9	6.1	81.6	7.4	1.18
PSC355	570	1159	5.2	1.16	37.3	85.5	27.0	8.1	77.5	8.2	-1.27
HS12	572	1158	5.1	1.22	38.7	85.3	29.6	6.8	80.1	8.6	-1.03
GC377	575	1153	5.1	1.18	37.7	84.9	27.4	7.3	81.2	7.5	-0.55
GC271	563	1142	5.1	1.20	38.0	84.9	29.1	6.9	78.8	7.8	-1.13
FM989	624	1142	4.8	1.22	39.0	86.0	32.1	6.4	79.5	8.1	4.17
PSC952	577	1131	5.0	1.14	36.7	84.2	25.9	7.5	78.6	8.3	0.60
STV474	521	1097	5.4	1.14	36.7	85.4	25.5	7.2	77.0	8.6	-2.93
PG092	522	1091	5.5	1.14	36.3	85.0	27.1	6.9	78.6	8.4	-2.60
Delta Pearl	543	1063	5.0	1.19	38.3	84.0	28.4	6.6	80.9	7.2	0.65
MISCOT8806	532	1038	5.0	1.13	36.3	85.3	28.0	7.3	78.5	8.0	0.80
BR9801	510	1033	5.2	1.19	38.0	85.3	29.1	7.2	78.2	8.1	-1.10
BR9803	529	1032	5.1	1.18	37.7	84.5	29.4	7.1	78.9	8.2	0.85
PG091	542	1022	4.9	1.21	38.7	84.9	30.7	6.6	78.7	8.7	2.58
PG094	499	1017	5.2	1.11	35.7	84.7	27.6	7.0	78.5	8.2	-1.37
GA894	513	999	5.0	1.18	37.7	84.6	30.1	6.7	78.7	8.1	0.90
MISCOT8839	490	990	5.1	1.17	37.3	84.5	25.7	6.9	79.4	8.0	-0.93
BR535	471	986	5.4	1.17	37.0	85.1	26.5	7.0	80.3	7.5	-2.67
DP61	469	965	5.3	1.20	38.3	84.7	27.1	6.9	81.0	7.8	-1.83
PG093	500	923	4.1	1.20	38.3	85.5	28.8	7.1	80.3	7.7	3.67
GA161	483	915	4.9	1.23	39.7	85.3	29.7	6.7	78.6	8.1	2.32
Mean	582	1144	5.0	1.17	37.5	84.9	28.2	7.1	79.5	8.0	0.37
LSD	52	103	0.2	0.02	0.7	.	1.1	0.3	0.6	0.4	2.04
CV	10	10	3.1	1.62	1.7	1.3	3.3	3.4	0.7	4.4	481.12

Table 6 Agronomic characteristics of 36 Upland cotton entries in the MAR test, 2000.

Entry	Plant height	Lint percent	Seed index	Lint index	Boll weight	Seeds per boll	Verti-cillium rating
	(m)	(%)	(g/100)	(g/100)	(g)		
PM1560BR	1.32	39.1	10.9	7.1	5.4	30.0	2.4
AP9257	1.38	39.1	10.2	6.6	5.3	31.2	0.6
SG747	1.23	41.4	10.8	7.7	5.5	29.8	4.8
SG501BR	1.27	38.6	11.2	7.1	5.6	30.5	2.4
STX9903RR	1.23	41.3	11.1	7.9	5.3	27.8	4.4
GC114	1.33	36.0	11.7	6.7	4.9	26.6	1.0
DP565	1.38	38.9	9.9	6.4	5.2	31.8	1.4
DP675	1.42	37.5	10.4	6.3	5.5	33.1	1.2
DP458BR	1.57	37.8	9.5	5.9	5.1	32.7	1.0
BR9802	1.30	36.3	11.6	6.7	5.8	31.5	1.6
AP7126	1.32	39.5	9.4	6.1	5.0	31.8	1.4
PSC413	1.20	38.4	10.4	6.6	5.0	29.4	4.0
NuCOTN33B	1.37	36.5	10.3	6.0	5.6	34.1	2.4
FM966	1.42	38.9	12.3	8.0	6.2	30.2	1.0
SG125BR	1.37	37.6	11.1	6.8	5.4	29.8	2.6
FM958	1.37	39.8	11.8	8.0	5.9	29.5	1.4
PSC355	1.30	38.0	10.7	6.7	4.8	27.3	2.4
HS12	1.52	36.8	11.0	6.4	5.3	30.0	1.2
GC377	1.47	39.2	9.0	5.9	5.3	35.7	1.7
GC271	1.30	36.1	10.5	6.0	5.4	32.8	3.7
FM989	1.37	38.6	11.8	7.5	6.1	31.0	0.4
PSC952	1.37	38.6	10.1	6.4	5.1	30.6	2.0
STV474	1.08	41.8	11.0	7.9	5.3	28.3	5.2
PG092	1.25	37.7	11.2	6.9	5.5	30.1	3.7
Delta Pearl	1.35	39.1	9.6	6.2	4.9	31.1	0.0
MISCOT8806	1.30	38.2	10.8	6.8	5.1	29.1	4.4
BR9801	1.33	36.6	10.8	6.3	5.1	29.7	2.2
BR9803	1.32	37.4	10.1	6.1	5.1	31.1	3.0
PG091	1.32	34.3	11.2	5.9	5.6	32.6	2.0
PG094	1.23	35.5	12.0	6.7	5.7	30.3	2.4
GA894	1.43	37.5	13.0	7.8	6.2	29.8	0.7
MISCOT8839	1.62	36.7	11.6	6.8	5.2	28.3	1.4
BR535	1.20	33.9	12.4	6.5	5.5	28.9	3.7
DP61	1.23	37.9	11.6	7.1	6.0	31.9	2.4
PG093	1.23	38.0	10.4	6.4	5.2	30.4	5.0
GA161	1.52	36.2	12.6	7.2	6.2	30.8	0.7
Mean	1.34	37.9	11.0	6.8	5.4	30.5	2.3
LSD	0.11	0.9	0.4	0.3	0.3	2.0	1.0
CV	7.21	2.1	3.5	4.1	5.0	5.6	45.8

Table 7. Lint yield, value per acre and fiber properties of 43 Upland cotton entries in the SAC test, 2000.

Entry	Value	Lint yield	Mic	Fiber length	Staple Length	Uniformity ratio	Fiber Strength	Elongation	Rd	+b	Premium
	($/A)	(lbs/A)		(in)	(32nds)		(g/tex)				(cents/lb)
PM1560BR	698	1329	5.0	1.13	36.7	84.0	28.2	7.0	80.1	8.7	2.10
DP655BR	714	1324	4.5	1.14	36.3	83.3	30.1	6.7	82.4	8.3	3.53
DP458BR	689	1314	4.9	1.14	37.0	82.4	28.3	6.9	81.7	8.9	1.92
Delta Pearl	680	1271	4.6	1.11	35.7	81.7	28.5	6.4	82.2	7.7	3.07
NuCOTN33B	668	1240	4.7	1.13	36.3	83.5	27.8	7.3	81.8	8.2	3.38
6M045	644	1228	5.0	1.11	35.7	83.6	26.3	7.3	80.9	9.1	2.02
HS12	645	1222	4.7	1.17	37.7	83.8	29.8	6.5	81.6	8.4	2.35
GC377	605	1210	5.0	1.15	36.7	84.0	27.2	7.2	82.1	8.2	-0.50
STX9903RR	571	1185	5.3	1.08	34.7	83.8	25.1	6.7	79.0	9.1	-2.25
DP90	635	1177	4.6	1.14	36.3	83.3	30.7	6.7	81.4	8.7	3.50
DP675	611	1158	4.7	1.13	36.0	83.6	29.7	7.1	80.5	8.5	2.35
SG125BR	567	1153	5.0	1.10	35.3	84.2	24.9	7.4	81.5	8.5	-1.30
AP7126	599	1142	4.9	1.16	37.0	83.3	28.0	7.1	81.7	8.0	2.05
SG747	564	1135	4.9	1.11	35.7	83.8	27.5	7.6	78.8	9.3	-0.73
SG501BR	543	1115	5.1	1.06	34.0	83.7	26.1	7.3	80.5	8.8	-1.77
STV474	522	1111	5.5	1.09	35.0	82.5	25.5	6.7	79.3	9.0	-3.48
DP5690RR	583	1108	4.8	1.12	36.3	83.7	29.0	6.6	81.4	8.1	2.15
FM989	578	1105	4.9	1.09	35.3	82.6	29.6	6.3	80.0	8.6	1.87
PSC952	550	1100	5.1	1.11	35.7	83.1	25.5	7.7	78.9	9.0	-0.47
GC303	575	1094	4.9	1.14	36.7	83.8	28.2	7.1	81.5	8.1	2.13
GC114	547	1081	4.9	1.08	34.7	83.5	27.8	6.5	79.6	9.1	0.18
PSC355	526	1079	5.2	1.10	35.0	84.3	26.2	8.0	79.3	9.4	-1.72
BXN47	505	1050	5.4	1.11	35.7	83.4	25.3	6.5	78.8	9.3	-2.38
AP9257	530	1040	5.0	1.10	35.3	82.8	26.9	6.8	82.3	7.6	0.48
195-208	550	1017	3.8	1.29	41.7	84.0	37.0	7.1	77.3	9.8	3.65
FM966	501	974	5.1	1.14	36.3	83.8	30.6	5.8	82.1	8.0	0.97
FM958	482	968	5.2	1.12	35.7	83.4	28.1	5.8	81.6	7.8	-0.63
GA894	508	960	4.9	1.15	37.0	83.9	30.2	6.8	80.4	8.6	2.43
GC271	476	960	5.1	1.11	35.3	82.8	27.9	6.7	78.6	8.4	-0.93
PSC413	471	919	5.1	1.13	36.3	84.4	26.5	7.5	78.1	8.8	0.78
BR9803	483	918	4.9	1.14	36.7	84.2	29.4	6.9	79.5	8.3	2.18
14-08	492	914	4.0	1.38	44.0	88.6	37.3	7.2	76.1	10.0	3.32
BR9801	457	912	5.1	1.13	36.3	84.1	29.2	7.1	79.2	8.5	-0.40
GA161	466	885	4.9	1.15	37.0	83.5	29.6	6.5	79.9	8.5	2.20
BR9802	404	869	5.8	1.06	34.0	84.0	26.7	6.9	78.6	9.2	-4.00
PD93007	403	819	5.1	1.09	34.7	82.9	27.5	6.2	79.9	8.6	-1.27
BR535	388	811	5.6	1.11	35.7	84.7	26.4	7.0	80.6	8.5	-2.58
1517-99	436	800	4.6	1.19	38.0	85.7	31.6	6.6	79.2	8.9	4.08
Maxxa	431	788	4.3	1.15	36.7	84.1	33.4	6.3	80.0	8.2	4.18
151-208	417	760	3.9	1.32	42.7	86.6	38.2	7.1	77.5	9.7	4.43
34-08	402	738	3.7	1.37	44.0	88.2	38.7	7.6	77.2	10.0	3.92
Acala6207	390	716	4.7	1.15	37.0	84.9	32.2	6.4	79.4	8.2	4.00
Atlas	294	608	5.1	1.08	34.7	83.0	26.7	7.3	80.6	8.1	-2.05
Mean	530	1030	4.9	1.14	36.6	83.9	29.1	6.9	80.1	8.7	0.99
LSD	49	96	0.3	0.03	0.9	1.3	1.5	0.3	1.0	0.3	2.33
CV	9	9	4.8	2.12	2.2	1.3	4.4	3.5	1.1	3.3	202.67

Table 8. Agronomic characteristics of 43 Upland cotton entries in the SAC test, 2000.

Entry	Plant height	Lint percent	Seed index	Lint index	Boll weight	Seeds per boll
	(m)	(%)	(g/100)	(g/100)	(g)	
PM1560BR	0.86	40.9	9.9	6.9	5.1	30.3
DP655BR	0.88	38.9	9.6	6.1	4.9	31.2
DP458BR	0.80	39.5	8.6	5.7	4.8	32.9
Delta Pearl	0.91	41.4	8.4	6.0	4.5	30.9
NuCOTN33B	0.79	39.0	8.8	5.7	4.7	32.5
6M045	0.76	40.4	9.3	6.3	5.1	32.9
HS12	0.90	38.5	9.3	5.9	4.8	31.4
GC377	0.77	40.3	8.2	5.6	4.6	32.9
STX9903RR	0.86	42.6	10.1	7.6	5.0	28.2
DP90	0.92	39.3	9.5	6.2	5.0	32.0
DP675	0.83	40.2	9.2	6.2	4.9	31.7
SG125BR	0.83	39.9	10.1	6.8	5.2	30.5
AP7126	0.83	41.0	8.6	6.1	4.6	31.4
SG747	0.87	42.1	10.3	7.5	5.1	28.6
SG501BR	0.88	39.9	10.3	6.9	4.7	27.3
STV474	0.84	41.9	10.4	7.5	4.9	27.4
DP5690RR	0.88	39.1	9.6	6.2	5.0	31.7
FM989	0.90	41.2	10.6	7.5	5.6	30.6
PSC952	0.91	40.4	9.3	6.4	4.6	29.4
GC303	0.81	39.2	8.2	5.3	4.8	35.5
GC114	0.84	38.8	9.7	6.3	4.7	29.2
PSC355	0.90	39.4	10.0	6.6	4.5	27.1
BXN47	0.91	41.2	10.2	7.2	4.8	27.1
AP9257	0.83	40.7	9.3	6.4	4.8	30.3
195-208	1.14	35.2	12.9	7.1	4.2	20.6
FM966	0.81	41.1	11.2	7.9	5.7	29.4
FM958	0.76	41.5	10.6	7.6	5.1	28.2
GA894	0.91	39.8	11.5	7.7	5.6	29.2
GC271	0.86	37.2	9.6	5.8	4.6	29.9
PSC413	0.86	39.1	10.1	6.5	4.4	26.0
BR9803	0.81	37.6	9.7	5.9	4.6	29.2
14-08	1.06	34.0	13.2	6.9	4.2	20.8
BR9801	0.83	38.3	9.7	6.1	4.7	29.6
GA161	0.86	39.3	10.8	7.0	5.3	29.5
BR9802	0.84	37.7	10.5	6.4	5.1	30.0
PD93007	0.88	39.0	10.3	6.7	5.0	29.5
BR535	0.79	35.4	11.8	6.5	5.4	29.5
1517-99	1.04	37.2	11.5	6.9	5.2	28.3
Maxxa	0.85	40.5	11.9	8.2	5.6	27.3
151-208	1.01	32.8	12.7	6.3	4.1	21.3
34-08	1.03	32.9	14.6	7.3	4.5	20.3
Acala6207	0.94	38.6	12.2	7.8	5.8	28.7
Atlas	0.91	35.8	11.2	6.3	5.2	29.3
Mean	0.88	39.1	10.3	6.6	4.9	29.1
LSD	0.05	0.8	0.3	0.3	0.4	2.2
CV	5.69	1.9	2.8	3.8	6.9	6.6

Table 9. Lint yield, value per acre, and fiber properties of 28 upland cotton varieties at Yuma, AZ in 2000.

Entry	Value	Lint yield	Mic	Fiber length	Staple Length	Uniformity ratio	Fiber strength	Elongation	Rd	+b	Premium
	($/A)	(lbs/A)		(in)	(32nds)		(g/tex)				(cents/lb)
SG747	1194	2466	5.1	1.11	35.7	83.4	24.6	7.2	78.3	9.8	-2.02
SG215BR	1167	2428	5.0	1.08	34.7	82.5	24.1	7.2	80.0	9.5	-2.40
SG501BR	1201	2324	4.9	1.09	35.0	83.6	26.2	7.2	79.8	9.0	1.22
SG125BR	1222	2297	4.7	1.09	35.0	83.5	25.4	7.0	79.8	9.0	2.77
AP7126	1170	2238	4.6	1.15	37.0	82.1	28.5	6.3	80.9	8.3	1.83
DP451BR	1156	2181	4.8	1.13	36.0	82.5	25.1	6.2	82.2	8.3	2.53
DES607	1137	2115	4.7	1.12	36.3	83.3	26.0	6.9	79.3	9.1	3.32
DP388	1109	2065	4.5	1.11	35.7	83.7	28.1	7.0	79.8	9.0	3.28
BR9802	985	2039	5.3	1.09	35.0	84.0	27.5	6.6	78.2	9.1	-2.15
STX9903RR	1048	2036	4.9	1.09	35.0	82.6	25.8	6.5	77.6	9.3	1.03
SG821	1061	2025	4.8	1.13	36.3	83.0	28.1	7.3	78.8	9.2	1.97
PM1560B	1029	1977	5.0	1.10	35.3	83.5	27.0	6.6	79.6	8.8	1.58
BR535	1027	1967	5.0	1.12	36.0	82.4	26.7	6.5	79.6	8.6	1.75
HS12	1046	1952	4.8	1.16	37.0	82.2	27.7	5.7	80.3	8.2	3.12
GA161	1054	1948	4.8	1.18	38.0	84.8	29.8	6.2	79.3	9.1	3.65
NuCOTN33B	1018	1947	4.8	1.13	36.3	82.0	27.3	6.3	81.5	8.2	1.83
BXN47	979	1918	4.9	1.11	35.7	82.8	26.0	6.2	77.6	9.5	0.58
BR9801	982	1868	4.9	1.14	36.7	84.0	29.2	6.6	78.6	8.7	2.10
GA894	1000	1850	4.5	1.14	36.7	82.7	30.7	5.9	79.2	9.2	3.62
STV474	924	1763	4.8	1.09	34.7	83.2	25.9	6.4	77.4	9.3	2.00
PG091	949	1757	4.6	1.16	37.3	83.5	30.0	6.3	78.6	9.1	3.62
PSC952	915	1719	4.8	1.08	34.7	83.3	27.0	6.6	78.1	9.2	2.75
PG092	841	1696	5.0	1.10	35.3	82.9	27.3	6.3	78.4	8.9	-0.83
PSC355	883	1641	4.7	1.12	36.3	84.2	29.1	7.3	76.4	9.2	3.33
PSC413	859	1594	4.5	1.12	36.0	83.9	27.7	6.9	78.2	9.2	3.42
BR9803	852	1591	4.8	1.13	36.3	83.4	28.9	6.4	77.5	8.6	3.12
PG093	855	1571	4.0	1.18	37.7	84.4	30.1	6.4	80.0	8.4	3.97
PG094	719	1394	4.6	1.07	34.0	83.2	28.6	6.4	77.9	9.1	1.10
Mean	1014	1941	4.8	1.12	35.9	83.2	27.4	6.6	79.0	9.0	1.86
LSD	73	139	0.2	0.03	0.9	1.0	1.0	0.3	0.7	0.3	1.67
CV	7	7	3.0	1.97	2.1	1.1	3.1	3.7	0.8	2.7	77.78

Table 10. Agronomic characteristics of 28 upland cotton varieties at Yuma, AZ, 2000.

Entry	Plant height	Lint percent	Seed index	Lint index	Boll weight	Seeds per boll	Lodging Rating[1]
	(m)	(%)	(g/100)	(g/100)	g		
SG747	1.38	40.6	10.8	7.5	5.8	31.7	2.0
SG215BR	1.38	39.0	10.9	7.0	6.0	33.5	2.0
SG501BR	1.34	37.3	11.0	6.7	5.7	32.0	2.0
SG125BR	1.31	37.0	10.8	6.4	5.8	33.4	2.0
AP7126	1.28	38.2	9.3	5.8	4.9	32.1	2.0
DP451BR	1.33	34.8	11.3	6.2	5.4	30.6	1.0
DES607	1.24	39.3	10.4	6.9	5.7	32.5	3.0
DP388	1.31	39.4	10.3	6.7	4.7	27.8	1.0
BR9802	1.39	36.1	10.9	6.2	5.5	32.1	2.0
STX9903RR	1.25	39.7	10.5	7.0	5.2	29.1	5.0
SG821	1.40	37.1	10.9	6.6	5.5	31.3	2.0
PM1560B	1.16	38.5	10.6	6.7	5.2	29.9	3.0
BR535	1.36	33.5	11.9	6.1	6.0	32.8	2.0
HS12	1.40	34.7	10.0	5.4	5.1	33.0	2.0
GA161	1.41	36.5	11.5	6.7	5.7	30.9	2.0
NuCOTN33B	1.34	34.8	9.9	5.4	5.2	33.6	2.0
BXN47	1.33	38.8	10.7	6.9	5.3	30.0	3.0
BR9801	1.30	35.9	10.1	5.7	4.9	30.3	3.0
GA894	1.38	36.2	12.1	7.0	6.0	31.1	2.0
STV474	1.16	39.0	10.2	6.6	4.9	28.8	4.0
PG091	1.51	33.1	10.8	5.5	5.7	34.4	1.0
PSC952	1.34	37.8	9.7	6.0	5.0	32.2	3.0
PG092	1.28	36.5	10.3	6.0	5.1	30.7	2.0
PSC355	1.33	36.7	9.8	5.8	4.4	27.7	3.0
PSC413	1.21	36.4	10.6	6.1	4.8	28.5	5.0
BR9803	1.24	34.8	10.2	5.5	4.7	29.7	3.0
PG093	1.33	36.5	11.1	6.5	5.5	30.8	2.0
PG094	1.28	34.1	10.9	5.7	5.5	32.6	2.0
Mean	1.32	36.9	10.6	6.3	5.3	31.2	2.4
LSD	0.07	0.9	0.4	0.3	0.3	1.3	
CV	5.07	2.1	3.0	4.2	4.1	3.5	

[1]Visual rating of lodging score; 1=no lodging, 5= extensive lodging