University of California Cooperative Extension

California Cotton Review

The Newsletter of the UC Cooperative Extension Cotton Advisors
Volume 57 January 2001

In This Issue

Farm Advisor and Specialist Variety Trials in the San Joaquin Valley
San Joaquin Valley Cotton Board and Specialist Variety Trials
Variety Trial Information / UCCE Cotton Web Site
Winter Cotton Production Meeting Announcement

Visit our web site at: cottoninfo.ucdavis.edu

FARM ADVISOR AND SPECIALIST VARIETY TRIALS IN THE SAN JOAQUIN VALLEY

Variety choices for California cotton growers are a lot more complicated than at any time in recent memory. This issue of the *"CA Cotton Review"* is meant to provide information from a wide range of San Joaquin Valley variety trials in which University of CA researchers had a primary role in 2000. These research trials include the "Approved Acala", "Approved Pima", "CA Uplands Large Scale", "CA Uplands Advanced Strains" and "San Joaquin Valley Cotton Board" tests, which have varying degrees of Farm Advisor and Specialist involvement. In all these trials, we are grateful to and dependent upon the patience and generosity of grower/ cooperators who help out and put up with a lot in allowing these trials on their farms.

This is by no means a comprehensive treatment of the available data. Additional information on HVI lint quality in the trials covered in this issue will be provided in the next issue of *"CA Cotton Review"* which is planned for February, 2001. As information on plant mapping results, Verticillium Wilt symptom rankings, and other information is analyzed from the 2000 season, most will be available on the University of CA cotton web site: (address:cottoninfo.ucdavis.edu) for the Farm Advisor trials in the Approved Pima, Approved Acala and CA Upland trials.

Additional information on the San Joaquin Valley Cotton Board testing program directed by Dr. Shane Ball of the University of CA will be available through direct contact with either the San Joaquin Valley Cotton Board or from his office. The thorough analysis of fiber quality data in the San Joaquin Valley Cotton Board trials, including detailed quality analyses and advanced spinning tests will be prepared in advance of the San Joaquin Valley Cotton Board variety evaluation meetings in March.

There certainly is additional data also available from the seed companies, as well as individual growers who were doing their own comparisons this past year. All available sources of information should prove useful in making informed and reasonable choices on how much of your acreage to devote to each variety.

Approach Used to Determine Entries in Trials other than the San Joaquin Valley Cotton Board Trials

Approved Acala Trials.

These tests were conducted by UCCE Farm Advisors and Extension Specialist and staff to provide continuing large-scale evaluations of some varieties already approved by the San Joaquin Valley Cotton Board (SJVCB). Tests were supported by the Cotton Incorporated State Support Committee and participating seed companies Note that not all varieties currently approved for the SJV are in these "approved " trials.

In Acala tests, entries included varieties newly-approved by SJVCB for the current year, varieties released last year that are in their second year of testing, plus the top 6 or 7 previously-approved varieties (in terms of planted acreage). New varieties are the focus of tests, but only remain in the tests for the first two years following release unless the variety moves into the top 6 or 7 varieties in planted acreage. Some exceptions to this rule were made based upon recommendations of individual seed companies that some varieties are for limited markets or

Support for this publication is provided by California Cotton Growers through their Cotton Incorporated State Support Program

varieties they see as of declining interest.

Approved Pima Trials.
The approach for Pima varieties has been similar, but fewer entries are retained in the tests than in Acala trials. Some varieties have lower long-term yield performance (such as S-6) and have been excluded from most tests to avoid yield losses in grower fields. Other varieties are grown on such limited acreage, they were not retained in tests to keep experiment size manageable for the very limited funds available for these tests. Support for these tests comes from the CA Crop Improvement Assoc. and Supima Association in addition to University of CA.

California Upland Trials.
Two specific programs were initiated: (1) a multi-county (6 location) study with large field plots in grower fields (hereafter referred to as "CA Upland Large-Scale" test), and (2) a smaller-scale study (3 locations, small field plots 50-75 feet in length) for screening purposes (hereafter called "Advanced Strains CA Upland" test). Seed companies were allowed a maximum of 2 entries per company in the Large-Scale trials, and 3 entries in the Advanced Strains trials. The choice of varieties entered was made by seed companies. For comparison purposes, two Acala varieties (CPCSD "Maxxa" and Phytogen-33) were included in these tests. Support was provided by Cotton Inc. State Support Committee, participating seed companies and the University of CA.

Measurements and Sampling.
CA Upland,,Approved Acala and Approved Pima Trials.
All plots were machine harvested for yield measurements, with six pound seedcotton samples ginned at Shafter REC. Fiber samples were sent to the USDA Classing Office for HVI fiber quality analyses. Twenty-five plants were evaluated per replication in several varieties in each test for presence/absence of vascular streaking and leaf discoloration as an index of incidence of *Verticilium* wilt. Data other than lint yields will be available at a later date as analyses are completed.

San Joaquin Valley Cotton Board Trials. Similar data collection was done in these trials in terms of harvest method and basic plant characterization. In addition, larger seedcotton samples were collected to allow both HVI testing through the USDA and other labs as well as more advanced tests involving seed characteristics, and advanced spinning quality characteristics. This other data will be available as part of the official written reports available through Dr. Shane Ball's program of the University of CA in cooperation with the San Joaquin Valley Cotton Board.

UCCE FARM ADVISOR / SPECIALIST APPROVED ACALA VARIETY TRIALS

Bob Hutmacher, Bill Weir, Ron Vargas, Bruce Roberts, Steve Wright, Dan Munk, Brian Marsh, Mark Keeley, Raul Delgado

Thirteen Acala varieties "approved" by the San Joaquin Valley Cotton Board in earlier tests were planted in "Approved Acala" tests in 2000. Varieties in the trials, yields in individual locations, as well as all-location average lint yields and gin turnout are shown in Table 1. In addition, at two test locations (Shafter and West Side REC), two California Upland varieties (Stoneville BXN-47 and DPL Nucotton-33B) were included for comparison purposes.. Tests were located in each of the six San Joaquin Valley cotton-producing counties, plus the Shafter and West Side Research and Extension Centers of the University of CA. Tests in grower fields were large, with individual entries grown in 6 to 8 row width plots averaging 1000 to 1300 feet or more in length. Studies had 4 replications in randomized complete block designs. West Side and Shafter test plots were smaller, with plots 4 rows in width by 300 feet length. Planting dates, soil type and management practices varied across the locations and with grower differences in inputs and management approach.

Lint yields in the Approved Acala variety trials in 2000 averaged all locations were 1495 lbs/acre compared with averages of 1552 lbs/acre (1999), 1092 lbs/acre (1998), 1525 lbs/acre (1997), 1353 lbs/acre (1996) and a 1995 average of 935 lbs/acre. Statistical separation of variety yields is indicated by the LSD (least significant difference) test results. Lint yields and gin turnouts which are separated by the amount shown in the LSD column (or more) were statistically different.

Long-Term Yield Evaluations and Comparisons.
In order to keep yield data in perspective, it can be useful to look at the long-term relative yield performance. Table 2 shows lint yields (as a % of the yield of variety "Maxxa") during the 1994-2000 period using combined data from UCCE Farm Advisor trials plus San Joaquin Valley Cotton Board trials. Available yield data is further separated into averages for different regions of the SJV (Table 2). Although the regional grouping is somewhat arbitrary, this analysis indicates variability in ranking across regions. Growers may want to look carefully at location differences in evaluating yield data. Earlier copies of *CA Cotton Review* articles with yield results can be reviewed at the UC Cotton web site (cottoninfo.ucdavis.edu) to provide actual yield data by locations.

Table 1. **APPROVED ACALA VARIETY TRIALS (Farm Advisors & Specialist Trials) – 2000.** Lint yields, gin turnouts, statistical analyses in 2000 Acala Approved Variety Trials (13 Approved Acala entries at 7 of the original 8 locations (Fresno County location not included due to non-uniform plant populations). For comparison purposes, the CA Upland varieties Stoneville-BXN-47 and Delta and Pine Land Co. Nucotton-33B were included in the Shafter and West Side REC trial locations *(UCCE Cooperators: Hutmacher, Weir, Vargas, Roberts, Wright, Munk, Marsh, Keeley, Delgado, Perkins in grower/cooperator fields and fields at the West Side and Shafter Research & Ext. Centers).*

Seed Company	Variety	40" rows Shafter REC (lbs/acre)	40" rows West Side REC (lbs/acre)	40" rows Kern County (lbs/acre)	38" rows Kings County (lbs/acre)	38" rows Tulare County (lbs/acre)	38" rows Madera County (lbs/acre)	30" rows Merced County (lbs/acre)	Average Lint Yield (lbs /ac)	Average Lint Yield (as % of Maxxa)	Mean Gin T.O. (%)
CPCSD	**Maxxa**	**1167**	**1763**	**1429**	**1379**	**1196**	**1401**	**1675**	**1430**	**100.0**	**35.2**
CPCSD	**GTO Maxxa**	1319	2028	1500	1547	1249	1425	1768	**1548**	**108.3**	**38.5**
Delta Pine Land Co.	**DP-6211**	1222	1853	1536	1544	1137	1526	1693	**1502**	**105.0**	**35.3**
Phytogen	**Phy-33**	1289	1793	1482	1515	1116	1515	1796	**1501**	**105.0**	**33.3**
Delta PineLand Co.	**DP-6207**	1209	1922	1593	1514	1162	1578	1861	**1548**	**108.3**	**34.6**
CPCSD	**SJ-2**	1303	1833	1598	1625	1048	1468	1645	**1503**	**105.1**	**32.2**
Germains	**GC-500**	1129	1895	1434	1447	1158	1434	1648	**1449**	**101.3**	**34.9**
Button-Willow Research	**BR-9605**	1187	1875	1442	1500	1157	1385	1675	**1460**	**102.1**	**34.1**
CPCSD	**C-166**	1191	1846	1478	1340	1193	1207	1723	**1425**	**99.7**	**34.5**
CPCSD	**Ultima**	1243	1913	1424	1457	1176	1330	1690	**1462**	**102.2**	**36.8**
Germains	**GC-505**	1160	2001	1576	1494	1232	1506	1764	**1533**	**107.2**	**36.1**
Germains	**GC-507**	1171	1954	1490	1339	1210	1367	1732	**1466**	**102.5**	**37.0**
CPCSD	**Riata**	1181	2086	1648	1611	1241	1610	1839	**1602**	**112.0**	**36.6**
Mean		**1213**	**1905**	**1510**	**1486**	**1175**	**1442**	**1731**	**1495**		**35.3**
Stoneville	**BXN-47**	1565	1901	-	-	-	-	-	-	**120.9 * (only 2 locations)**	35.8
Delta and Pine Land Co.	**Nucotton-33B**	1368	1786	-	-	-	-	-	-	**109.3 * (only 2 locations)**	33.4
Statistics below apply only to the data on Approved Acala Varieties (does not include BXN-47 and Nucott-33B) At Shafter REC and West Side REC locations											
LSD 0.05 LSD 0.10		101	110	78	111	72	126	96	52		0.5
C.V. (%)		7.0	4.0	3.6	5.2	4.2	6.1	3.9	6.5		2.4
P		0.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000

LSD = least significant difference between yields required to be significantly different at the 5% level of signficance;
C.V. = coefficienct of variation; P = probability VARIETY by LOCATION (for yields): (LSD 0.05 = 136; C.V. (%) = 6.5; P = 0.000)

In the two locations in the Approved Acala trials in which we had a comparison of yields of two CA Upland varieties with Approved Acala entries, the BXN-47 variety averaged about 21 percent higher than the Maxxa standard, while DPL Nucotton-33B averaged about 9 percent higher yields. Of the Approved Acala varieties, 7 varieties had statistically higher yields than Maxxa, led by Riata at 112 percent (172 lbs/acre higher), and GTO Maxxa and DPL-6207 at about 108 percent (118 lbs/acre higher than Maxxa).

Table 2. **APPROVED ACALA TRIALS (Farm Advisor / Specialist / SJVCB).** Lint yields of Approved Acala varieties (1994 - 2000) (as % of Maxxa yield). Yields were evaluated at 7 to 8 locations per year in either Farm Advisor / Specialist trials or San Joaquin Valley Cotton Board (SJVCB) trials. Values shown in *"italics"* and outlined are from SJVCB tests in years prior to approval of variety. All other values shown were determined in "Approved Acala" variety trials of the University of CA Cooperative Extension Farm Advisors and Specialist. "Blank" areas in the table indicate that the varieties were not included in tests (either because they were not yet released (more recent varieties) or because acreage was limited and earlier testing had been done (older varieties).

Variety Name or Number	**Lint Yields Across All Variety Trial Sites (as % of Maxxa)**							**Shafter, Kern & Tulare County Average Yields**	**WSREC Fresno & Kings County Average Yields**	**Madera and Merced County Average Yields**	**All Sites Average Yields**
	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**1994-2000 (as % of Maxxa)**	**1994-2000 (as % of Maxxa)**	**1994-2000 (as % of Maxxa)**	**1994-2000 (as % of Maxxa)**
Maxxa	100	100	100	100	100	100	100	100	100	100	100
GC-510	94	91	93	92	93			96 *	93 *	89 *	93 *
Royale	96	94	96	97	97			103 *	97 *	91 *	96 *
SJ-2	94	99	99	97	98	98	105	102	97	97	99
Phytogen-33	***97***	***102***	102	103	105	101	105	107	102	97	103
GC-535	***95***	***97***	97	97	99			100 *	99 *	92 *	97 *
DP-6204	***96***	***93***	97	95	99			101 *	97 *	89 *	96 *
DP-6211			***104***	***103***	104	99	105	105 *	104 *	99 *	103 *
DP-6207				***104***	***106***	102	108	106 *	105 *	104 *	105 *
DP-6166	96	89						97 *	95 *	88 *	93 *
C-141 (Ultima)		***99***	***103***	98	102	98	102	103 *	104 *	95 *	101 *
GTO Maxxa		***104***	***102***	106	104	104	108	107 *	108 *	99 *	105 *
GC-500		***94***	***93***	99	100	102	101	100 *	99 *	97 *	99 *
GC-717	99	97	89	94				101 *	97 *	90 *	95 *
El Dorado **	***91***	96	97					96 *	98 *	89 *	95 *
GC-703 **	***97***	***95***	87					94 *	95 *	88 *	93 *
GC-702 **	99	95						108 *	98 *	93 *	97 *
BR-9605				***98***	***97***	100	102	101 *	100 *	96 *	99 *
C-166 (GLS)				***96***	***89***	97	100	98 *	93 *	93 *	95 *
Prema **	91							96 *	92 *	87 *	91 *
GC-505					***102***	***99***	107	102 *	103 *	103 *	103 *
GC-507					***95***	***104***	103	101 *	100 *	100 *	100 *
C-176 Riata					***101***	***106***	112	105 *	107 *	108 *	107 *
Average Yield in tests (lbs lint/ac)	1227	935	1354	1482	1092	1551	1495				

* = less than 6-years test results; ** = variety no longer available

UCCE FARM ADVISOR / SPECIALIST APPROVED PIMA AND CALIFORNIA UPLAND VARIETY TRIALS

Bob Hutmacher, Bill Weir, Ron Vargas, Bruce Roberts, Steve Wright, Dan Munk, Brian Marsh, Mark Keeley, Raul Delgado

Pima Trials

Approved Pima varieties included in the 2000 trials are shown in Table 3. The variety UA-5, approved following 1999 SJVCB trials, was only planted at Shafter and West Side locations due to limited seed availability.

California Uplands Trials

Objectives in these trials were to extend the University of CA data base on yield performance and quality characteristics of "CA Upland" varieties available the past several years to San Joaquin Valley growers. As was the case last year, we felt it was important to include data from both the "Large-Scale" and "Advanced Strains" trials, since any of these varieties can be brought into the SJV if seed companies make them available. In reviewing the data, it is important to note: (1) this is one-year data for 2000; (2) yields of some, but not all of these varieties can be reviewed in the results available from 1999 either in last year's cotton review or on the UCCE cotton web site; (3) data in Table 4 covers the "Large Scale" trials, Table 5 the "Advanced Strains" tests.

Table 3. Lint yields (lbs/acre) by test location and average gin turnout for each variety in 2000 Approved Pima Variety trials (3 locations with 6 varieties, 2 additional locations with 7 varieties evaluated).

Seed Company	Variety	40 inch Shafter REC	40inch West Side REC	38 inch Kern Co.	38 inch Kings Co.	40 inch Fresno Co.	Average Lint Yield – 2000 (in lbs/acre)	Average Gin Turnout (%)	Average Lint Yield (as a % of S-7 variety yield)		
									2000	1999	1998
Public Variety	S-7	1012	1807	1126	1305	1152	**1280**	32.3	100	100	100
Phytogen Seed Co.	PSC-57	924	1607	1198	1459	1217	**1281**	31.8	100	97	96
Delta Pine & Land Co.	DP-HTO	1072	1956	1122	1296	1232	**1336**	35.8	104	95	102
	CH-252	874	1638	1087	1172	1138	**1182**	33.3	92	79	82
Delta Pine & Land Co.	DP-White Pima	950	1744	1065	1412	1164	**1267**	33.2	99	102	-
Delta Pine & Land Co.	DP-744	1224	2009	1284	1308	1234	**1412**	33.6	110	92	-
MEAN (6 varieties)		1009	1794	1147	1325	1190	**1293**	33.3	101	-	-
Public Variety	UA-5 **	1023	1692	-	-	-	-	31.6	106 * (only 2 locations)	-	-
Statistics below apply to data on Approved Pima varieties included at all locations – does not include data for UA-5 variety											
LSD 0.05		161	106	45	174	NS	62	0.5			
C.V. (%)		10.6	3.9	2.6	8.7	7.3	7.1	2.0			
P		0.004	0.000	0.000	0.044	0.470	0.000	0.000			

* Var X Loc (LSD 0.05) = NS; (C.V.) = 2.6%; (P) = 0.129

Top-performing varieties in the "Large-Scale CA Uplands" trials in 2000 with average lint yields shown in ( ) were DPL "Delta Topaz" (1637 lbs/acre), Stoneville "BXN-47" (1597 lbs/acre), Germains "GC-377" (1586 lbs/acre), Suregrow 501BR (1562 lbs/acre), and Aventis "ACSI-IF1000" (1540 lbs/acre), all statistically higher than the average "Maxa" yield of 1447 lbs/acre. As stated previously, until more is known regarding long-term yield performance, and characteristics of fiber quality and *Verticillium* wilt resistance, some caution should be exercised in planting large acreages of any one variety. Consult other sources of available data on these varieties where possible.

Extensive variety trials have been conducted over the past several years in the Sacramento Valley tests on some of these same varieties. Information from those trials can be obtained by contacting the Glenn County UCCE office at the number shown on the address page of this *CA Cotton Review*.

Table 4. **CALIFORNIA UPLAND LARGE-SCALE TRIALS (Farm Advisors & Specialist Trials) – 2000.** Lint yields (in lbs/acre) by test location and average gin turnout for each variety in *2000 California Upland "LARGE SCALE" Variety Trial* (5 of the original 6 locations with 2 Acala varieties (CPCSD "Maxxa" and Phytogen-33) and 18 California Upland varieties). The Kern

Seed Company	Variety	30" rows Kings County (lbs/acre)	38" rows Tulare County (lbs/acre)	40" rows Fresno County (lbs/acre)	30" rows Madera County (lbs/acre)	30" rows Merced County (lbs/acre)	Mean Lint Yield (lbs lint / acre)	Mean Lint Yield (as% of Maxxa)	Mean Gin Turnout (%)
CPCSD	Maxxa	1675	1352	778	1619	1809	**1447**	**100.0**	36.4
Phytogen	Phy-33	1748	1324	888	1600	1816	**1475**	**101.9**	34.2
Stoneville	BXN-47	1910	1601	1011	1718	1747	**1597**	**110.4**	36.4
Delta and Pine Land Co.	Nucotton-33B	1672	1490	875	1528	1709	**1455**	**100.6**	33.9
Germains	GC-271	1615	1492	905	1545	1551	**1422**	**98.3**	33.4
Germains	GC-333	1689	1400	1013	1572	1826	**1500**	**103.7**	33.5
Germains	GC-377	1862	1688	1014	1611	1756	**1586**	**109.6**	35.1
Pure Genetics	PG-SMX-11	1747	1404	983	1682	1812	**1526**	**105.5**	33.3
Delta and Pine Land Co.	DP-388	1675	1398	906	1772	1733	**1497**	**103.5**	35.5
Delta and Pine Land Co.	Delta Pearl	1720	1622	982	1568	1711	**1521**	**105.1**	35.0
Delta and Pine Land Co.	Delta Topaz	1900	1675	1056	1657	1897	**1637**	**113.1**	36.5
Suregrow Seed Company	SG-501-BR	1645	1583	1160	1767	1655	**1562**	**107.9**	35.6
Suregrow Seed Company	SG-821	1588	1410	1038	1601	1644	**1456**	**100.6**	35.3
Buttonwillow Research	BR-535	1473	1216	912	1557	1578	**1347**	**93.1**	31.5
Buttonwillow Research	BR-9801	1573	1402	1006	1654	1570	**1441**	**99.6**	34.8
Buttonwillow Research	BR-9802	1553	1495	840	1643	1825	**1471**	**101.7**	33.4
Aventis	ACSI IF1000	1776	1484	1019	1581	1842	**1540**	**106.4**	35.8
Aventis	FM-958	1578	1611	789	1674	1930	**1516**	**104.8**	36.8
AgriPro Seed Company	AP-7126	1646	1499	1039	1489	1587	**1452**	**100.3**	35.9
AgriPro Seed Company	AP-9257	1657	1564	1114	1555	1747	**1527**	**105.5**	35.8
Average		**1685**	**1486**	**966**	**1620**	**1737**	**1499**	**103.6**	**34.9**
LSD 0.05 (5-county average)		161	237	157	133	231	**86**		0.4
C.V. (%) (5-county average)		5.8	9.7	9.8	5.0	8.0	**7.8**		1.6

VARIETY by LOCATION interaction (for yields): (LSD 0.05 = NS; C.V. (%) = 10.5; P = 0.432)

Table 5. **CALIFORNIA UPLANDS ADVANCED STRAINS (Farm Advisors & Specialist Trials) – 2000.** Lint yields (in lbs/ acre) by test location and average gin turnout for each variety in *2000 California Upland Advanced Strains Variety Trial* (2 locations with 2 Acala varieties [Maxxa and Phytogen-33] and 26 California Upland varieties). *(UCCE Cooperators: Hutmacher, Weir, Vargas, Roberts, Wright, Munk, Marsh, Keeley, Delgado, Perkins in fields at the West Side and Shafter Research & Ext. Centers).*

Seed Company **	Variety Name or Number	40" rows Shafter REC Lint Yields		40" rows West Side REC Lint Yields		Average Lint Yields Across 2 Locations		Average Gin Turnout Across Two locations (%)
		(lbs lint per acre)	(as % of Maxxa Yield)	(lbs lint per acre)	(as % of Maxxa Yield)	(lbs lint per acre)	(as % of Maxxa Yield)	
CPCSD	Maxxa	1346	100	1615	100	**1481**	**100**	**36.4**
Phytogen	Phy-33	1344	100	1756	109	**1550**	**104**	**33.6**
Germains	GC-9962	1473	109	1729	107	**1601**	**108**	**32.7**
Germains	GC-9963	1374	102	1722	107	**1548**	**104**	**33.6**
Germains	GC-9964	1610	120	1896	117	**1753**	**119**	**33.6**
Aventis	FM-966	1690	126	1928	119	**1809**	**122**	**36.7**
Aventis	ACSI-Expo-0781	1478	110	2001	124	**1740**	**117**	**36.6**
Aventis	ACSI-Expo-223	1470	109	1810	112	**1640**	**111**	**36.8**
Pure Genetics	PG-0-91	1281	95	1691	105	**1486**	**100**	**30.9**
Pure Genetics	PG-0-92	1635	121	1865	115	**1750**	**118**	**34.7**
Pure Genetics	PG-0-93	1507	112	1528	95	**1518**	**103**	**33.7**
Stoneville	STX-9903 RR	1683	125	1969	122	**1826**	**123**	**37.1**
CPCSD	M-539	1583	118	1899	118	**1741**	**118**	**35.6**
CPCSD	M-557	1528	114	1814	112	**1671**	**113**	**36.1**
Buttonwillow	BRE-0001	1570	117	1712	106	**1641**	**111**	**31.5**
Buttonwillow	BRE-0002	1510	112	1784	110	**1647**	**111**	**32.8**
Buttonwillow	BRE-0003	1551	115	1721	107	**1636**	**111**	**32.3**
Helena Cotton	HCR-8129	1563	116	1832	113	**1698**	**115**	**34.6**
Helena Cotton	HCR-8414	1361	101	1544	96	**1453**	**98**	**33.7**
Helena Cotton	HCR-9162	1474	110	1791	111	**1633**	**110**	**33.3**
Suregrow	SG-150 RR	1487	110	1916	119	**1702**	**115**	**34.3**
Delta Pine Land	DP-5415 RR	1411	105	1768	109	**1590**	**107**	**35.2**
Delta Pine Land	DP-5690 RR	1391	103	1903	118	**1647**	**111**	**34.3**
Paymaster	PM-1560 BR	1526	113	1803	112	**1665**	**113**	**35.8**
Average		**1494**	**111**	**1792**	**111**	**1643**	**111**	**34.4**
LSD 0.05		178		160		125		1.0
C.V. (%)		8.4		6.3		7.6		2.9

VARIETY by LOCATION interaction (for yields): (LSD 0.05 = NS; C.V. (%) = 8.4; P = 0.183

SPECIAL THANKS to the many growers, seed companies and others who helped in these variety trials and our other field studies again in 2000. The variety trials took up a lot of space and required our cooperators to change many operations to accommodate these studies. Your help and patience assist in providing information to the entire CA cotton industry, and your extra efforts were greatly appreciated !

SAN JOAQUIN VALLEY ACALA AND PIMA TESTING PROGRAM

Shane T. Ball, Dick Bassett, Jim Bergman, Scott Perkins, Debra Andreotti

For more information on the testing program associated with the San Joaquin Valley Cotton Board or with questions regarding the information on the following two pages, contact Shane Ball and staff at:

Phone: (661) 746-8028
e-mail: stball@ucdavis.edu

Acala Tests

The Acala lint yields for the 2000 growing season were for 15 varieties grown at eight locations (Table 1). Results from the SJV Screening and National Standards trials (not shown) will be available upon request. Generally, the yields were very good, averaging 166 lbs/ acre higher than those obtained in the 1999 season.

Table 1. SJVCB Acala on-farm variety trials by location in 2000

No.	Variety	Button Willow	Chow Chilla	Cor Coran	Fire Baugh	Los Banos	Mettler	Waukena	WSFS	Mean
		---------- lbs/acre ----------								
1.	Phy-78	1595	1545	1489	1390	1909	1663	1783	2068	1680
2.	Phy-72	1585	1573	1383	1338	1848	1690	1723	1979	1640
3.	C-192	1486	1477	1315	1488	1856	1432	1699	1836	1573
4.	OA-249	1439	1499	1326	1502	1741	1434	1648	1724	1540
5.	OA-258	1523	1459	1304	1314	1856	1413	1602	1758	1529
6.	OA-260	1421	1575	1307	1523	1739	1355	1659	1644	1528
7.	GTO	1471	1449	1313	1525	1700	1327	1642	1731	1520
8.	GC-9856	1460	1520	1155	1501	1837	1381	1595	1694	1518
9.	GC-9855	1496	1373	1298	1466	1725	1335	1578	1767	1505
10.	Phy-85	1535	1301	1228	1293	1741	1522	1691	1725	1504
11.	C-191	1452	1356	1322	1359	1833	1404	1556	1739	1503
12.	Maxxa	1426	1462	1244	1423	1717	1405	1584	1659	1490
13.	BR-9904	1429	1534	1297	1065	1723	1473	1483	1835	1480
14.	C-181	1511	1349	1188	1438	1741	1388	1470	1685	1471
15.	GC-9754	1509	1321	1200	1014	1734	1375	1630	1657	1430
	Mean	1489	1453	1291	1374	1780	1440	1623	1767	1527
	SE (standard error)	22	28	13	23	12	18	18	19	10
	CV (coeff. variation)	8	12	4	7	3	6	4	5	6

Six of the entries in the regular large scale tests completed the third year of testing and thus were eligible to be considered for approval as SJV Acalas (Table 2). Five of them were ultimately approved by the SJV Cotton Board in March. Three are transgenics, the first such cottons to enter the testing program. Two of these contain the gene for resistance to Roundup herbicide. These are CPCSD's C-176, which has a Maxxa background, and Germains GC-9646. These have been renamed and will be marketed as Riata and GC-546RR respectively. The third transgenic is GC-9645, renamed GC-545BG. It contains the BT gene for worm resistance. The two non-transgenics that were approved are GC-9642 (renamed GC-507) and GC-9643 (renamed GC-505).

Table 2. SJVCB Acala lint yields from 1998-1999.

Variety	1998	1999	Avg.
	----------lbs/acre----------		
C-176	1060	1561	1327
GC 9642	996	1531	1282
GC 9643	1067	1461	1277
Maxxa	1048	1478	1277
DP6100RR	1046	1353	1210
GC 9646	998	1367	1195
GC 9645	943	1375	1173
Mean	1023	1446	1249
CV	4.2	4.8	4.7

C-176 (Riata) significantly out yielded the standard in 1999, but not in 1998. Very few measurable differences were found in growth and fruiting characteristics, fiber quality or spinning performance when compared to the standard. The two Germain transgenics were below the Maxxa yield at most locations, but both possessed excellent quality traits, especially the GC-9646 (GC-546RR). The latter variety is characterized by a shorter, more determinate growth and fruiting pattern. The two conventional cottons, GC-9642 and GC-9643, lint yields were the same as Maxxa, although there were response differences in 1998 and 1999. The fiber and yarn quality characteristics were equal to or slightly better than Maxxa. The DP6100RR was inconsistent in yield performance and was not approved by the SJV Board, primarily over concerns about substantial reductions in yarn strength, especially when spun into the fiber count yarns.

Pima Tests

The Pima lint yields for the 2000 growing season were for 16 varieties grown at three locations (Table 3). Generally, the yields were very good for two of the three locations and slightly less than the 5-year mean (1159 lbs/acre).

Table 3. SJVCB Pima on-farm variety trials by location in 2000.

No.	Variety	Buena Vista	Corcoran	WSFS	2000 Mean
		----------	lbs/acre	----------	
1.	OA-340	1515	1083	1321	1306
2.	CH-007	1519	918	1440	1293
3.	S-7	1335	984	1458	1259
4.	Phy-89	1494	1049	1185	1243
5.	Phy-76	1548	1099	1054	1233
6.	Phy-88	1518	1005	1139	1221
7.	OA-345	1386	886	1321	1187
8.	C-104	1382	906	1236	1174
9.	OA-351	1380	1037	1089	1169
10.	E-102	1248	773	1214	1079
11.	OA-352	1301	828	1072	1067
12.	C-103	1080	880	1079	1013
13.	OA-350	1127	598	1298	1008
14.	E-101	960	680	1158	936
15.	UA-11	849	533	1059	811
16.	UA-12	780	571	1003	785
	Mean	1283	863	1195	1113
	SE	31	25	21	20
	CV	5	7	8	7

The UA-5 fell below the S-7 yield when averaged over all test sites, but the difference did not reach statistical significance (Table 4). Any yield deficits are primarily a result of a lower lint percent and gin turnout. It grows taller, is more indeterminate and somewhat later maturing than the S-7. This may account for its relatively poorer showing in the 1998 shortened season than in the other two years. The more vigorous, indeterminate growth characteristics make it less susceptible to the premature bronzing and leaf senescence that often occurs with the S-7 and similar types. Overall fiber and yarn qualities are improved. The slightly lower micronaire is a result of improved fineness, rather than immaturity. These fiber characteristics translate into a stronger and more even yarn.

Table 4. Cotton lint yield results for 1997-99 SJV Pima Varieties.

Variety	1997	1998	1999	Avg.
	----------	lbs/acre	----------	
S-7	1510	879	1291	1208
OA 325	1579	860	1258	1206
UA 5	1490	814	1237	1159
Mean	1526	851	1262	1191
CV	2.9	4.0	5.1	4.3

Support for this publication is provided by California Cotton Growers through their Cotton Incorporated State Support Program