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1999 SEASON REVIEW

Bob Hutmacher and Pete Goodell

Growing Conditions for 1999. Even though very cool, sometimes wet conditions occurred during most of March and early April, the majority of SJV fields were planted between about April 12 and April 27. Favorable heat unit conditions for planting existed briefly in mid-March, leading to some plantings, but this brief period was quickly followed by very cool weather, leading to significant chilling injury and replanting of early-planted fields. Weather in general throughout the state was much cooler than normal during the period from mid-March through mid-June (Fig. 1), resulting in significantly lower than normal heat unit accumulations (as much as 20-30% below the long-term average in many parts of the SJV. As in 1998, heat unit accumulations during much of the late-April through mid-June period were some of the lowest in the past 30 years.

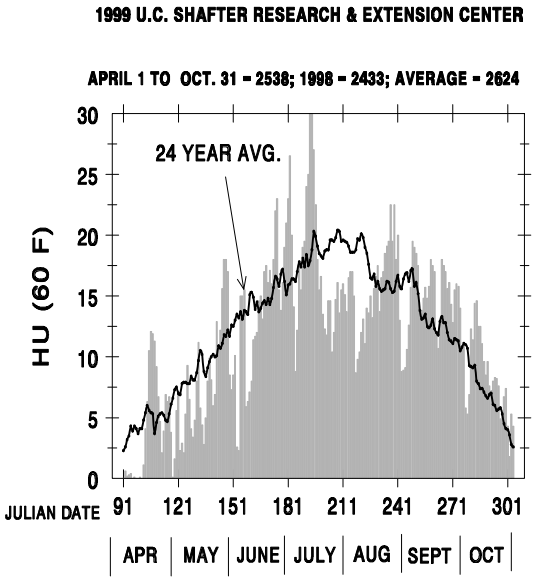

Figure 1. Heat units (Base 60F) as a function of day of year in 1999 at the Shafter Research and Extension Ctr. Also shown (solid line) is the 24-year average for heat unit accumulations at Shafter.

With the cool early season, it did not warm up to levels good for cotton development until about mid-May. Temperatures too cold to promote good early growth rates were a consistent problem, but seedling disease losses were much less than in 1998. *Thielaviopsis* and *Rhizoctonia* were the primary seedling disease causes of low vigor and stand losses in most fields we evaluated, with *Pythium* and *Phytophthora* losses much less than during the wetter spring conditions of 1998.

Below-normal heat accumulations prevailed through most of the remainder of the summer (Figure 1). However, these below-normal temperatures were not necessarily detrimental to the cotton crop, particularly the more heat-sensitive Acala varieties, since daytime high temperatures were closer to the temperature optimum for carbohydrate accumulation, and lower day and

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night temperatures resulted in lower respiratory carbon losses. Both of these responses can be favorable and lead to improved fruit retention compared to expectations under hotter day and night-time conditions. On the negative side, more heat units during summer would have most likely been favorable in advancing the maturation of varieties already delayed by cool spring weather, such as the very late Pima in many fields. On the balance, however, lower-than-normal temperatures generally contributed to helping maintain higher fruit retention than typically seen in most years. Where good early fruit retention prevailed, many fields were at or near cutout by mid- to late-August, despite the growth delays associated with cool early-season weather.

There was only one exceedingly hot period this year, in early July, and it only lasted for about 4 to 6 days, with daytime highs from 107 to 112 F and nighttime lows from 75 to 82 F. Since the crops, including the Acalas, were behind in development due to the cool early season, the fruit load during this one hot period was low and there was little or no damage to the cotton crop, even in the more heat-sensitive Acalas. The other hot "spell" was in late August, with about 4 days with daytime maximum temperatures in excess of 105 F. Square damage during this period was evident in the more heat-sensitive Acala varieties (most or all of the Approved Acalas), but was not observed in the two CA Upland varieties placed in our Approved Acala variety tests. Temperatures during most of the month of September and October were above-normal, and helped in speeding the maturation and opening of bolls, allaying some of the concerns about the lateness of the crop.

At the time this summary was prepared (mid-March), there remained some discrepancies between industry, Pink Bollworm program and USDA estimates for harvested acreage of Pima and Upland cotton, as reflected in the acreage totals and average yield estimates shown in Table 1. Most industry and government sources agree that total 1999 statewide cotton acreage was about 850,000 acres. Total statewide Upland acreage (CA Upland in the San Joaquin Valley plus Acala, plus other Uplands grown elsewhere in the state) was down about 5 percent from the 649,000 acres estimate of 1998, and down very dramatically from earlier years (Table 1). When final total bale production numbers are in, some of these 1999 acreage and yield estimates may still be revised. Based upon earlier field evaluations and estimates, we expect Upland (CA Upland and Acala) cotton to average about 1250 lbs lint/acre, with Pima estimates a more disappointing 80 to 100 lbs/acre less, at about 1150 to 1170 lbs/acre. The 31,000 acres of miscellaneous experimental varieties grown in 1999 in the San Joaquin Valley included large acreages of Roundup-Ready varieties in final year testing in the San Joaquin Valley Cotton Board program.

Pest Situations for 1999. With cool conditions and slow plant growth during the early season, damage due to thrips in 1999 was again more severe than in most years. Some growers / PCA's opted to treat for thrips based on experience with previous damage and crop delays observed in 1998.

Table 1. Acreage and yield estimates for 1995 through 1999 production years, using California Department of Food and Agriculture lint yield & acreage estimates.

YEAR	ACREAGE ESTIMATES (acres)			ESTIMATED AVERAGE YIELDS (lbs lint / acre)	
	Acala	Pima	CA Upland + Experimentals	Acala plus CA Upland	Pima
1999	435,000 to 465,000	239,000 to 259,000	114,000 (CA Uplands) + 31,000 Experimental	1250 (estimate)	1150 (estim.)
1998	617,000	180,000	32,000 total	887	941
1997	875,000	184,000	About 7,000	1202	1141
1996	995,000	164,000	Several 1000	1153	1098
1995	1,165,000	115,000	Several 1000	953	937

Most, however, did not treat for thrips in 1999, and there were fewer instances of the severe plant terminal damage seen with thrips injury in 1998. At most sites, fruit retention levels were good to excellent, indicating good conditions for moderate to high yields. Spring *Lygus* populations were generally observed to be "light" in foothill areas, weedy areas and roadsides, partly due to the early dry-down of this vegetation with a fairly dry spring. *Lygus* populations were low in the majority of fields (but not all), with relatively good beneficial populations helping keep *Lygus* populations in check in many areas.

Mite infestations were generally extremely light at all locations, with very mild *Lygus* pressure and only one or no chemical applications required, particularly in the northern SJV counties. Through the mid- and late-season, there were very limited whitefly and aphids in most fields, including those in the variety trials. Beet armyworm problems were "spotty", as in most years, with some fairly severe problems (requiring repeated treatments) in limited areas. Some of the more severe problems were noted in areas with widespread plantings of processing tomatoes. Yield loss estimates attributed to specific pests were again made for California for 1999 by UCCE Entomologists, and can be compared with their 1998 estimates in Table 2.

Table 2. Yield loss estimates attributed to specific pests for 1998 and 1999 cotton seasons in CA.

Yield loss estimates, by pest (bales lost)							
Year	**Silverleaf Whitefly**	**Beet Armyworm**	**Early Season Thrips**	**Aphid**	**Spider Mites**	**Lygus**	**Total**
1998	260	2,604	3,906	5,208	42,083	84,167	138,228
1999	185	13,371	294	12,123	5,766	17,306	49,045

Plants in some of the earliest plantings and earliest varieties were at cutout by early August. The crop was not early, due to the cool early conditions, but it did generally have the advantage of an excellent early and mid-season boll set. This made the crop yields much less sensitive to adverse weather conditions (particularly very hot weather) or late infestations of *Lygus* in late-August. Many fields were able to realize much of the potential of good boll set even in this late crop, since unusually good heat unit accumulations were sustained throughout September and October (see Fig. 1). This helped open up bolls at outer positions and top-crop bolls.

AVOIDING 2,4-D INJURY TO COTTON

Ron Vargas

Although the use of growth regulator or auxenic herbicides which include 2,4-D, 2,4-DB and MCPA are restricted from use in the San Joaquin Valley during the period of March 15 through October 15, injury to crops sensitive to these herbicides (such as cotton) still occurs far too often. This injury is usually caused when a pesticide application is made to cotton using a spray rig that was previously used to apply a growth regulator herbicide. Two fairly serious incidents of this type of cotton injury were observed by this author just in 1999. 2,4-DB and MCPA are very commonly-used materials that can be very effective herbicides for control of broadleaf weeds in small grains, and 2,4-DB is also used for weed control in seedling alfalfa. Dicamba (also an auxenic herbicide) is regularly used to control pigweed in corn, and because its use is not restricted between March 15 and Oct. 15, there is greater risk of injury also by drift in addition to spray rig contamination problems.

These auxenic herbicides are absorbed into the plant and their mechanism of action is the same as that naturally-occurring auxin IAA (indole acetic acid). They are translocated to the meristematic tissue (new growing points in the plants) and in high levels inhibit growth and development. Minute levels of 2,4-D have been shown to stimulate cotton growth and increase flower production, but levels at which these responses occur are extremely low, and strongly negative impacts are caused with only slightly higher levels. Injury symptoms with 2,4-D are similar on most broadleaf plants such as cotton, while there is no major activity on grasses. A variety of symptoms occur, including:

- A characteristic twisting pattern of leaf growth known as "epinastic growth" (also called "strapping" or "feathering" of the leaves)
- Leaf chlorosis can occur at a wide range of leaf ages
- Roots can be initiated along some stem tissue, and stem "swelling" can occur
- Flower and fruit can be aborted

2,4-D Retention Study. A 1955 University of CA study attempted to gain information on the best procedures for removing 2,4-D residues from spray tanks. Several metals (zinc, copper, tin, iron and aluminum) as well as glass were soaked in 2,4-D solutions and then rinsed by various procedures to try and remove residues. After these materials had soaked in the 2,4-D solutions for 24 hours, the solution was then poured off and the glass or metal materials rinsed and subsequently analyzed for 2,4-D residues. Results showed that nearly all of the 2,4-D appeared to be removed from metals and glass by the first of four water rinses. However, subsequent rinse water which was used to again soak the metal and glass for another 24 hours showed varying amounts of absorbed 2,4-D that was slowly released from the tank materials. The iron and zinc (galvanized iron) showed the greatest residue release, copper and glass had trace levels, and tin appeared to be essentially free of residue contamination. Following exposure to spray solutions, rapid rinsing with ammonia/water solutions left a significant amount of absorbed 2,4-D on tank materials. Longer-term (3 days) soaking of tank materials in ammonia/water solutions increased the release of absorbed 2,4-D. A significant conclusion from the study was "It may be stated that the only really safe way to avoid plant damage from 2,4-D contamination in sprayers is to maintain separate sprayers for sensitive plants."

Sprayer Contamination. Cotton injury can occur with very low concentrations of 2,4-D (or 2,4-DB) residues in a sprayer. University of CA recommendations are that any sprayer previously used to apply 2,4-D should not be used for subsequent sprays in sensitive crops. If such a sprayer must be used with cotton, it should be washed as thoroughly as possible prior to any spraying of cotton. The following procedures are suggested for washing out sprayers previously used to apply 2,4-D.

1. Remove nozzles, nozzle strainers and in-line strainers. Using a soft brush, was nozzles and strainers with soapy water, making sure any visible deposits are removed.
2. Before replacing nozzles and strainers, fill sprayer tank with water and add a strong detergent or a commercial spray tank cleaner. Agitate the solution for several minutes and then flush about one-fourth of the water-detergent mixture through the lines. Replace nozzles and strainers and flush the remainder of the mixture through the nozzles.
3. Fill the tank with water again, add detergent. Agitate several minutes and flush again through nozzles
4. Next, fill tank with water and add 1 gallon of household ammonia per 25 gallons of water. Run the agitator several minutes, then spray out about one-fourth of mixture. Allow remaining mixture to stand in sprayer and lines for up to 3 days, then agitate again and spray out the remainder of water-ammonia mixture.
5. Wash at least one more time with soapy water or water combined with commercial tank cleaner
6. Be careful to not introduce 2,4-D from any other sources, such as measuring equipment or funnels used for transfer of 2,4-D, similar chemicals.

Sprayer hoses are another possible source of contamination, particularly in older hoses that may have cracks on the inside hose walls. With sprayers widely used for 2,4-D applications, it may be wise to consider replacing all hoses on the sprayer before using in cotton fields. Attention to these procedures and cautions can help avoid some major and expensive problems in the field.

SAN JOAQUIN VALLEY COTTON BOARD ACALA AND PIMA TESTS

Dick Bassett

As a result of recent legislation, commercial plantings are no longer restricted to "approved" Acala and Pima varieties in the San Joaquin Valley District. However, the legislation provides for continuing Acala and Pima testing programs as in the past, to identify "approved" varieties (as determined by the San Joaquin Valley Cotton Board (SJVCB)) as distinguished from all other Upland and extra-long-staple (ELS) varieties. The "approved" Acalas will be known as "SJV Acalas" and "SLV Pimas". Varieties that have not gone through the "approved" variety testing program will be designated "California Uplands" and "California Pimas".

SJVCB Acala Trial Entries – 1999 results and comparison with relative yields in 1997 and 1998. Fourteen cotton entries from five different breeders were entered in the large-scale SJVCB Acala trials at 8 locations in 1999 (Table 1). Entries in the first-year screening trials of the SJVCB are not shown here, but that data is available in the official SJVCB data summaries for 1999. Due to the cool spring, all plantings in the large-scale tests were delayed to the last two weeks of April. However, reflecting the experience of the San Joaquin Valley as a whole, test plot yields were very respectable at most locations in contrast with the disastrous 1998 season. Eight of the cotton varieties in these trials completed the required 3 years of testing and were eligible to be considered for approval as "SJV Acalas" (Table 1). Three of these are transgenics (two Roundup-Ready and one Bt variety). In addition to information on lint yield and plant agronomic characteristics, fiber quality and spinning performance evaluations were completed, and an over-years summary of production and quality characteristics were reviewed and acted upon by the SJVCB in mid-March. Of the

Table 1. San Joaquin Valley Cotton Board Acala variety tests by location in 1999. "Blank" sections in the table indicate that the variety was not entered in these tests for that year. The variety "GTO Maxxa" was included in the 1999 tests as a newer Approved Acala entry for an additional comparison with Maxxa.

Seed Co.	Variety	Button-willow	Wasco	Wau-kena	Cor-coran	West Side REC	Cantua	Chow-chilla	Los Banos	1999 Mean Lint Yield (in lbs / acre)	Average Lint Yield (across all locations in 1997 to 1999 SJVCB tests) - (as % of Maxxa)		
											1997	1998	1999
CPCSD	**Maxxa**	1671	1058	1603	1436	1740	1287	1212	1814	**1478**		**100**	**100**
"	**GTO**	1816	1102	1670	1571	1833	1209	1081	1764	**1506**			**102**
"	**C-175**	1640	1118	1578	1479	1643	1270	1083	1669	**1435**	**102***	**95**	**97**
"	**C-176**	1735	1185	1579	1505	1778	1422	1342	1939	**1561**	**99***	**101**	**106**
"	**C-181**	1714	1125	1460	1448	1739	1303	1305	1856	**1494**		**102**	**101**
Delta Pine & Land Co	**DP-6100 RR**	1771	1022	1459	1345	1440	1197	1148	1444	**1353**	**99***	**100**	**92**
Germains	**GC-9642**	1699	1177	1634	1468	1834	1244	1289	1905	**1531**	**104***	**95**	**104**
"	**GC-9643**	1659	1022	1579	1407	1715	1299	1234	1770	**1461**	**103***	**102**	**99**
"	**GC-9645**	1641	957	1330	1390	1721	1199	1073	1687	**1375**	**92***	**90**	**93**
"	**GC-9646**	1550	1060	1538	1279	1613	1159	1093	1643	**1367**	**77***	**95**	**92**
Olvey & As.	**OA-247**	1719	1089	1392	1366	1481	1341	1089	1602	**1385**		**85**	**94**
"	**OA-249**	1738	1160	1454	1387	1802	1315	1296	1751	**1488**	**102***		**101**
Phytogen	**Phy-61**	1746	832	1289	1469	1604	1152	1104	1683	**1360**		**106**	**92**
"	**Phy-72**	1857	1180	1627	1574	1953	1394	1468	1880	**1617**		**118**	**109**
Avg. (of all entries)		**1711**	**1078**	**1514**	**1437**	**1707**	**1271**	**1201**	**1743**	**1458**			
LSD(0.05)		83	118	67	92	98	130	120	59	77			
C.V.(%)		3.4	7.7	3.1	4.5	4.0	7.2	7.0	2.4	4.7			

* in small-scale (First-year) screening tests only at 4 locations in 1997 - no small-scale screening tests by SJVCB in 1998, but these screening tests were reinstated in 1999.

eight eligible Acala entries, seed companies / breeders requested that six be considered for approval. Five were approved, including C-176 (released as "Riata RR"), GC-9642 (released as "GC-507"), GC-9643 (released as "GC-505"), GC-9645BG and GC-9646RR. DP-6100RR was not approved. All data are summarized in the 1999 report on Acala Approved Variety Trials available through the SJVCB.

SJVCB Pima Trial Entries – 1999 results and comparison with relative yields in 1997 and 1998 for varieties in multiple years of trials. In response to increased acreage and geographical diversity in Pima plantings, the number of test sites was increased (Table 2). As with the Acala varieties, cool early spring weather forced delays in planting into the third week in April, generally considered unfavorable for Pima. Despite the somewhat difficult start, yields were quite good in at least some of the locations. Of the two experimental Pima entries (OA-325 and UA-5) eligible after completing three years of testing, only the breeder of UA-5 requested consideration for approval. After reviewing Pima SJVCB trials data on yields, agronomic performance and advanced fiber quality, UA-5 was approved at the March SJVCB meeting.

Table 2. Lint yields (lbs lint/acre) for varieties in 1999 SJVCB "Pima" variety trials, by location. "Blank" sections in the table indicate that the variety was not entered in these tests for that year (more recent entry). Only the varieties currently entered in the SJVCB tests or completing the third year of tests are included.

Seed Company	Variety	Maricopa	Button-willow	Waukena	West Side REC	Los Banos	1999 Mean Lint Yield (in lbs/ acre)		Average Lint Yield (across all locations in tests done in 1997, 1998, 1999 SJVCB tests) ** (as % of S-7 lint yield)		
									1997	1998	1999
Public Variety	**S-7**	1679	1172	1012	1099	1491	**1291**		100	100	100
Delta Pine & Land Co.	**DPX-9925**	1619	1328	987	1262	1521	**1343**				104
"	**DPX-9930**	1525	1096	930	1413	1445	**1281**				99
Olvey & Assoc.	**OA-325**	1563	1097	850	1411	1370	**1258**		105*	98	97
"	**OA-340**	1689	1305	1047	1548	1562	**1430**			107	111
"	**OA-347**	1658	953	1024	1425	1417	**1295**				100
"	**OA-348**	1399	1143	796	1129	1280	**1149**				89
Phytogen	**Phy-76**	1724	1012	1118	1050	1469	**1275**			97	99
"	**Phy-88**	1796	1129	1134	1416	1478	**1390**				108
"	**Phy-89**	1791	991	1172	1399	1526	**1376**				107
"	**Phy-90**	1724	1068	1120	1358	1479	**1350**				105
"	**Phy-91**	1684	1001	1119	1104	1473	**1276**				99
Public – Univ. AZ	**UA-5**	1682	954	1046	1159	1343	**1237**		99*	93	96
"	**UA-6**	1502	959	794	1389	1331	**1195**			107	93
"	**UA-7**	1464	916	828	1213	1269	**1138**			91	88
"	**UA-8**	1507	913	836	1055	1244	**1111**				86
Average (of all entries)		**1625**	**1064**	**988**	**1277**	**1419**	**1275**				
LSD(0.05)		95	95	73	174	91	128				
C.V. (%)		4.1	6.2	5.2	9.6	4.5	6.1				

*data from the first year tests on these two Pima varieties (in final year of SJVCB testing this year).

LINT QUALITY – 1999 APPROVED ACALA, APPROVED PIMA AND CA UPLAND FARM ADVISOR TRIALS

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

Quality characteristics of cotton varieties included in all Farm Advisor / Specialist variety trials in 1999 are summarized (averages across locations) in the following tables. This data, plus some limited additional lint quality data can also be found on the University of CA Cotton Web site (see "announcements" section at end of this issue). Fiber quality analyses were determined on samples collected during harvest with commercial-type pickers at all research sites, with 6 pound seed cotton samples collected in each field replication at all research sites. These samples were processed at the Shafter REC research gin, and then sent to the USDA classing office in Visalia for HVI analyses. Standard USDA classing office analyses were the only ones performed on these samples (none of the advanced spinning quality analyses as done for San Joaquin Valley Cotton Board tests).

In the "*Approved Acala*" trials (where two CA Uplands were included) and in the "*CA Uplands*" trials (where two Acalas were included for comparison), it was evident that the most obvious, consistent differences were in fiber strength (Tables 1, 3, 4). It is important to note, however, that fiber strength averages covered a wide range among CA Upland entries (Tables 3, 4), and it is not appropriate to classify all varieties as similar in fiber strength or length. In addition, many of the CA Upland varieties exhibited improvements over Approved Acalas in HVI trash and Leaf Grade, although defoliation and leaf trash was generally less of a problem in most varieties than in years with cooler, more difficult fall weather.

Table 1. Lint quality characteristics of 10 Acala varieties and 2 CA Upland varieties in UCCE Farm Advisor **"Approved Acala" trials** in 1999. Values shown are averages calculated across 7 locations (Shafter Research and Extension Center, West Side Research and Extension Center, Kern Co., Tulare Co., Fresno Co., Madera Co. and Merced Co.). Kings Co. location data was not included in these calculations since the trial at that site did not include the 2 CA Upland varieties.

Seed Co.	Variety	Micro-naire	Fiber Length (in.)	Fiber Strength (g/T)	Unif. Index	Manual Classing Leaf Grade	HVI Trash	Color RD	Color + B
CPCSD	Maxxa	3.81	1.17	32.9	83.3	3.3	3.1	80.0	8.22
CPCSD	GTOMaxxa	3.90	1.18	32.4	83.5	3.3	4.0	79.5	8.40
Phytogen	Phy-33	3.96	1.18	32.2	84.3	3.3	3.3	79.6	8.22
Delta & Pine Land	DP-6211	3.78	1.16	31.7	83.0	3.4	3.1	80.5	8.09
CPCSD	SJ-2	3.82	1.17	31.5	83.5	3.7	3.9	79.8	8.17
Germains	GC-500	3.90	1.17	32.9	83.4	3.2	3.1	80.4	8.16
CPCSD	C141(Diva)	3.72	1.15	32.7	83.6	3.8	3.7	80.1	8.17
Delta & Pine Land	DP-6207	3.98	1.16	32.9	83.6	3.4	3.1	80.1	8.05
Buttonwillow Res. Co.	BR-9605	3.89	1.16	32.7	83.1	3.5	3.4	80.2	8.17
CPCSD	C166(GLS)	3.60	1.20	34.7	83.7	3.3	3.2	80.6	8.06
Delta & Pine Land Co.	Nucott-33B	3.61	1.16	29.5	82.3	2.3	1.9	82.1	7.80
Stoneville	BXN-47	3.67	1.13	28.2	82.5	3.3	3.0	79.4	8.73
Average		**3.80**	**1.17**	**32.0**	**83.3**	**3.3**	**3.2**	**80.2**	**8.19**
LSD (0.05)		**0.10**	**0.01**	**0.7**	**0.4**	**0.2**	**0.5**	**0.4**	**0.17**
C.V. (%)		**4.8**	**1.5**	**4.0**	**0.8**	**11.8**	**26.3**	**1.0**	**3.8**
P		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Table 2. Lint quality characteristics of 6 Pima varieties in **UCCE Farm Advisor "Approved Pima" variety trials in 1999**. Values shown for the first 6 entries (S-7 through UA-4) are calculated across 5 locations (Shafter Research and Extension Center, West Side Research and Extension Center, Kern Co., Kings Co., and Merced Co.). The next two entries (Conquistador and S-6) were only grown at Shafter and West Side REC's, so values shown are for those 2 sites. Overall statistics were calculated using only data for 6 varieties grown at all 5 locations, and do not include Conquistador and S-6.

Seed Co. or Breeder	Variety	Micro-naire	Fiber Length (in.)	Fiber Strength (g/T)	Unif. Index	Man. Clas. Color Grade	HVI Color	Color RD	Color + B
Public Variety	S-7	3.83	1.37	39.6	87.0	2.3	1.4	70.3	11.83
Delta Pine & Land	DP-HTO	3.83	1.34	38.9	86.5	1.4	1.1	71.4	11.80
Buttonwillow Res.	CH-252	3.73	1.36	38.7	86.9	1.7	1.4	69.9	12.06
Phytogen	Phy-57	3.70	1.36	40.3	86.9	1.9	1.2	71.4	11.63
Delta Pine & Land.	DP-White Pima	3.68	1.37	37.9	86.9	1.3	1.1	74.7	10.72
U. of Arizona	UA-4	4.12	1.37	39.1	86.6	1.3	1.0	73.0	11.41
Phytogen	Conquist.	3.76	1.37	42.4	86.8	2.0	1.3	69.8	12.29
Public Variety	S-6	3.94	1.34	38.0	86.5	2.0	1.3	69.4	12.58
Average		**3.82**	**1.36**	**39.1**	**86.8**	**1.6**	**1.2**	**71.8**	**11.58**
LSD (0.05)		**0.08**	**0.01**	**1.0**	**NS**	**0.2**	**0.2**	**0.6**	**0.13**
C.V. (%)		**3.1**	**1.1**	**3.9**	**1.2**	**15.2**	**29.1**	**1.2**	**1.6**

*LSD indicates that values separated by the amount shown (or more) are significantly different; C.V.(%) indicates amount of variation in data (higher number indicates more variable data)

Table 3. Lint quality characteristics of 2 Acala varieties and 19 CA Upland varieties in **UCCE Farm Advisor "CA Upland Large-Scale" trials in 1999**. Values shown are averages calculated across 5 locations (Kern Co., Kings Co., Tulare Co., Madera Co. and Merced Co.). Fresno Co. location data was not included in these calculations due to high variability in one replication. Data shown for Phy-33 and GC-204 are 4-location averages.

Seed Co. or		Micro-	Fiber	Fiber	Unif.	Man. Classg	HVI	Color	Color
CPCSD	Maxxa	4.13	1.17	34.0	83.6	2.8	2.8	80.3	8.31
Phytogen	Phy-33	4.17	1.16	32.4	83.4	2.4	2.3	80.2	8.61
AgrEvo	FM-989	3.79	1.16	31.3	82.2	2.3	2.4	81.2	8.12
AgrEvo	ACSI IF-1000	3.90	1.17	32.1	82.4	2.2	2.0	80.8	8.07
AgriPro	AP-6101	4.05	1.18	31.1	82.3	1.9	1.8	80.9	8.21
AgriPro	AP-7115	3.86	1.12	27.9	81.2	1.9	1.6	82.4	7.91
Stoneville	BXN-47	4.08	1.13	28.5	82.3	2.6	2.2	79.4	9.01
Olvey & Asoc.	OA-36	4.08	1.15	29.9	82.8	2.1	1.8	80.6	8.28
Buttonwillow Res.	BR-C9801	4.25	1.16	31.6	83.1	2.9	2.7	80.8	7.99
Buttonwillow Res.	BR-C9802	4.23	1.12	30.7	82.9	2.0	1.6	80.3	8.59
Paymaster Cotton-seed	PM-1560BG	3.99	1.13	29.4	82.7	2.6	2.5	80.8	8.15
Phytogen	PSC-413	4.09	1.14	29.8	82.8	3.3	3.1	79.4	8.41
Phytogen	GA-161	3.72	1.18	31.1	82.0	2.3	2.1	81.0	8.34
Delta Pine & Land	Nucott-33B	3.73	1.15	29.9	82.0	2.0	1.7	81.9	8.03
Delta Pine & Land	448-B	3.93	1.15	28.7	82.4	1.9	1.8	81.7	8.23
Suregrow	SG-747	4.04	1.14	29.0	82.5	1.8	1.5	80.3	8.74
Suregrow	SG-501	4.37	1.14	31.5	83.1	2.6	2.6	80.0	8.47
Helena Cotton Res.	HCR-9220	3.74	1.11	27.2	81.6	1.9	2.1	81.9	7.95
Helena Cotton Res.	HCR-7114-46	3.98	1.09	27.5	81.4	1.5	2.0	82.1	8.11
Germains	GC-400BG	4.23	1.12	31.1	82.6	2.3	1.9	80.1	8.68
Germains	GC-204	4.19	1.13	30.4	83.3	2.3	2.0	79.7	8.65
Average		**4.01**	**1.14**	**30.1**	**82.4**	**2.3**	**2.1**	**80.8**	**8.29**
LSD (0.05)		**0.16**	**0.02**	**0.8**	**0.6**	**0.3**	**0.5**	**1.0**	**0.23**
C.V. (%)		**5.4**	**2.0**	**3.6**	**1.0**	**17.8**	**34.1**	**1.6**	**3.8**

Table 4. Lint quality characteristics of 2 Acala varieties and 26 CA Upland varieties in **UCCE Farm Advisor "CA Upland Advanced Strains" variety trials in 1999**. Values shown are averages calculated across 3 locations (Shafter Research and Extension Center, West Side Research and Extension Center and Merced Co.).

Seed Co. or Breeder	Variety	Micro-naire	Fiber Length (in.)	Fiber Strength (g/T)	Unif. Index	Manual Classing Leaf Grade	HVI Trash	Color RD	Color + B
CPCSD	Maxxa	3.75	1.19	33.7	83.4	2.9	2.7	79.1	8.19
Phytogen	Phy-33	4.04	1.19	33.7	84.1	3.2	3.3	78.5	8.21
AgrEvo	ACSI-Expo223	3.75	1.13	30.9	82.4	2.4	2.4	80.3	7.92
AgrEvo	ACSI-Expo052	3.65	1.18	31.9	82.6	2.0	1.8	80.4	7.65
AgrEvo	ACSI-Expo781	3.40	1.17	31.9	81.9	2.1	1.8	80.9	7.89
AgriPro	APX-9257	3.75	1.16	30.6	82.7	2.0	1.5	80.0	7.90
AgriPro	APX-7126	3.82	1.20	30.7	82.0	2.0	1.1	80.7	7.82
Olvey and Assoc.	OA-77	3.92	1.17	30.3	82.3	2.9	2.7	79.9	8.11
Olvey and Assoc.	OA-66	3.55	1.18	30.0	82.8	2.1	1.9	80.8	7.85
Buttonwillow Research	BR-9904	3.92	1.18	31.4	83.2	2.2	1.7	79.4	8.23
Buttonwillow Research	BR-9905	3.93	1.16	30.3	83.5	2.0	1.4	79.5	8.29
Buttonwillow Research	BR-9906	3.98	1.18	30.4	83.1	1.9	1.5	80.0	8.00
Paymaster	PM-1560 BG/RR	3.55	1.17	30.8	82.6	3.0	2.6	79.3	8.15
Phytogen	PSC-355	4.06	1.15	30.5	83.4	3.5	3.1	77.2	8.67
Phytogen	HS-12	3.95	1.21	33.4	82.7	2.1	1.6	80.5	7.83
Phytogen	PSC-952	3.86	1.14	29.0	82.5	3.3	2.9	78.6	8.47
Delta Pine & Land Co.	Topaz	3.88	1.17	30.1	81.7	1.7	1.2	81.5	7.70
Delta Pine & Land Co.	Pearl	3.77	1.18	30.0	81.9	2.1	1.6	81.3	7.55
Suregrow	SG-105	3.92	1.18	30.6	83.8	2.2	1.5	80.5	8.20
Suregrow	SG-821	3.90	1.16	30.5	83.4	1.9	1.5	79.9	8.46
Helena Cotton Res.	HCR-9240	3.69	1.21	30.9	83.3	2.1	1.8	80.6	8.14
Helena Cotton Res.	HCR-9310	3.46	1.22	30.0	82.0	2.7	2.4	80.8	7.62
Helena Cotton Res.	HCR-9263	3.83	1.20	31.5	82.9	2.0	1.5	80.4	7.92
Germains	GC-9810	3.72	1.19	31.7	83.3	2.1	1.9	80.3	8.05
Germains	GC-9811	3.85	1.20	31.2	82.9	2.1	1.5	81.0	7.93
Germains	GC-9812	4.09	1.20	31.3	83.4	2.8	2.2	79.4	8.08
Pure Genetics	VT-901	4.01	1.17	30.9	83.5	2.1	1.8	79.8	8.16
AgriPro	AP-6102	3.96	1.22	32.9	83.2	2.0	1.7	80.4	8.23
Average		**3.82**	**1.18**	**31.1**	**82.9**	**2.3**	**1.9**	**80.0**	**8.04**
LSD (0.05)		**0.18**	**0.01**	**0.9**	**0.5**	**0.3**	**0.5**	**0.8**	**0.23**
C.V. (%)		**5.9**	**1.5**	**3.4**	**0.8**	**15.8**	**34.7**	**1.2**	**3.5**

ANNOUNCEMENTS

VARIETY TRIAL INFORMATION / UCCE COTTON WEB SITE *Variety trial information* from this year's Approved Acala, Approved Pima and CA Uplands trials is on the new University of CA cotton web site. UCCE staff intend to develop this site over the course of the year to include more information and updates useful to growers / PCA's. It already has recent issues of the *CA Cotton Review, Field Check, and Quick Check* posted: The web site address is: **cottoninfo.ucdavis.edu.** Please call Brian Marsh (661) 868-6210 or Bob Hutmacher (661) 746-8020 with questions.

FARM ADVISOR SUMMER PRODUCTION MEETINGS & FIELD DAYS Additional specific information (times, locations) will be available closer to the meeting dates. Please contact your Farm Advisor for details.

Location	June Production Meetings	July Production Meetings
Kern County	June 20 (morning)	July 18 (morning)
Tulare / Kings Counties	June 21 (morning / lunch)	July 19 (morning / lunch)
Fresno County	June 22 (morning)	July 20 (morning)
Madera / Merced Counties	June 22 (lunch / afternoon)	July 20 (lunch / afternoon)

COTTON FIELD DAY - Shafter Research & Extension Center Tuesday, September 19
COTTON FIELD DAY - West Side Research & Extension Center Thursday, September 21

REPLANTING DECISIONS A UC Cooperative Extension computer program to help with replant decisions is available on the internet at **http://www.ipm.ucdavis.edu/IPMPROJECT/cottonresources.html**

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