

UCCE Approved Acala and Pima Variety Trials

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The objectives of these studies with Acala and Pima varieties are to evaluate approved Acala varieties and Pima varieties submitted for testing under different environmental conditions and management across the San Joaquin Valley region of California. In order to provide a reasonable limit on the number of varieties in the tests, the entries include newly-approved varieties (approved by the San Joaquin Valley Cotton Board) for the current year, varieties released last year that are in their second year of testing, plus the top 4 or 5 previously-approved varieties (in terms of planted acreage). The new varieties are the focus of tests, but only remain in tests for a minimum of two years following release unless that variety moves into the top 4 or 5 varieties in planted acreage. Released varieties also may not show up in tests if companies request that the variety is for a special market and don't want it in multiple location testing, or when seed supplies are inadequate. The Pima tests focus on approved varieties, but in the past two years have also included a non-approved hybrid that has been of interest due to yield performance.

Objectives were to evaluate varieties in terms of growth characteristics, yield performance, and HVI lint quality under different environmental conditions and management. We are limited as to type of measurements that can be made within these trials based upon funding available to run the trials. Yield and HVI data are collected in replicated plots of all trials and locations, while plant growth data focuses on mapping data from a more limited number of locations and timings. Pima variety trials are supported largely from general research funds of UCCE Specialists and Farm Advisors, and in part through grants from the Supima Association. Approved Acala trials are conducted with joint funding from Cotton Incorporated State Support Committee and participating seed companies, plus support from the University of CA. These projects give growers a continuously-updated comparison of newly-available varieties versus varieties which have been available for one or more years. These trials continue to be conducted at a wide range of field sites due to repeated commitments and participation of UCCE Farm Advisors. We feel that grower confidence in utility of these tests is improved with the large number of test locations and we hope to continue as willing growers, UCCE personnel and funds allow in the future.

Approach for 2004. Two test locations at University Research Centers (UCCE Shafter and West Side) were used in both Acala and Pima variety trials, plus grower field locations at 4 added fields (Pima) and 6 additional sites (Acala trials). Large-scale Acala trial test sites are on grower fields in Kern, Kings, Tulare, Fresno, Madera and Merced counties. The large-scale Pima test locations are in Kern, Fresno and Merced County. Approved Acala and Pima varieties included in 2004 trials are shown in Table 1.

Table 1. Entries in 2004 Pima variety trials and Approved Acala variety trials

Type	Seed Company	Varieties	Type	Seed Company	Varieties
Acala	CPCSD	Maxxa, Riata RR, Sierra RR Ultima, Summit, Ultima EF	Pima	Public variety	S-7
	Phytogen	Phy-72, Phy-78		Phytogen	Phy-76
	Delta Pine	DP-6207, DP-6100 RR		Delta Pine	DP-744, DP-HTO, DP-340
	United Ag Prod	OA-265 BR		Olvey & Assoc	OA-353
	CA Uplands for comparison (DP-444 BR & FM-960B2R) - (Shafter and West Side sites only) – only in Acala trials			Hazera	HA-195 (hybrid)

Lint yield and fiber quality summaries or newsletter articles can be downloaded from the UC Cotton web site: <http://cottoninfo.ucdavis.edu>. In addition, fiber quality data summaries covering prior years of trials on the more recently available CA Upland varieties can also be accessed on this web site. Basic summaries of yield information from Pima and Acala trials of UC and San Joaquin Valley Cotton Board trials operated by Dr. Shane Ball of the University of CA can also be accessed at this web site.

Table 2. **PIMA VARIETY TRIALS (Farm Advisor & Specialist Trials) - 2003.** Lint yields (in lbs/acre) by test location and average gin turnout across all locations. Average lint yields across all sites are expressed as pounds of lint per acre and as percent of yield average for variety "S-7" (the SJV Cotton Board Approved Pima "standard"). Average yields across locations shown in bold italics and underlined are from SJV Cotton Board tests in years prior to 2003 (Dr. Shane Ball, UC-Shafter REC, Coordinator).

Seed Company	Variety	Lint Yields at Specific Test Plot Locations (in lbs / acre) Row spacings also shown						Average Lint Yield (lbs / acre)	Average Gin Turnout (%)	Average Lint Yields by Year of Trial (as a % of variety "S-7" yields)					
		40" rows Shafter REC	40" rows West Side REC	38" rows Kern Co.	38" rows Kings Co.	30" rows Fresno Co.	30" rows Merced Co.			1998	1999	2000	2001	2002	2003
Public variety	S-7	1093	1324	876	1276	1103	1098	1128	31.2	100	100	100	100	100	100
Phytogen Seed Co.	Phy-76	1206	1335	1054	1375	1067	1232	1212	30.6	<u>97</u>	<u>99</u>	<u>98</u>	102	121	107
Delta & Pine Land	DP-744	1116	1381	1024	1568	1039	1013	1190	31.8	<u>110</u>	92	110	104	116	105
Delta & Pine Land	DP-340	1239	1478	907	1489	1143	1075	1222	31.7	<u>107</u>	<u>111</u>	<u>104</u>	106	114	108
Delta & Pine Land	DP-HTO	1018	1417	901	1354	1049	1070	1135	33.4	102	95	104	96	100	101
Hazera Seed Co.	HA-195	1791	1851	1502	1525	1262	1927	1643	32.0	- *	- *	- *	<u>170</u>	<u>159</u>	146
Mean		1244	1464	1044	1431	1111	1236	1255	31.8						
LSD 0.05		97	151	58	106	137	59	54	0.4						
C.V.(%)		5.2	6.8	3.7	4.9	8.2	3.2	7.0	2.2						
P		0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000						

Acknowledgements. The efforts of UC Cooperative Extension and County staff, UC Shafter and West Side REC in operating these trials out of the individual county Cooperative Extension offices is gratefully acknowledged. Partial financial support in running these trials was received from the University of CA Cooperative Extension, University of CA at Davis, participating seed companies,

Cotton Incorporated State Support Committee (Acala trials), and Supima Association (Pima trials). We are grateful for this support. Our thanks is extended to the many grower cooperators who generously put up with numerous extra requests and work, all to help provide this information to their fellow growers.

Table 3. **APPROVED ACALA VARIETY TRIALS – 2003.** Lint yields, gin turnouts, statistical analyses in 2003 Acala Approved Variety Trials (9 Approved Acala entries at 8 locations). For comparison purposes, CA Upland varieties Delta and Pine Land Co. "DP-5415 RR" and Bayer Fibermax "FM-989 BR" were also included in the Shafter and West Side REC trial locations.

Seed Company	Variety	Lint Yields at Specific Test Plot Locations—row spacings as shown								Average Lint Yield		Average Gin Turnout (%)
		40" rows Shafter REC (lbs/ac)	40" rows West Side REC (lbs/ac)	40" Rows Kern County (lbs/ac)	40" Rows Kings County (lbs/ac)	30" Rows Tulare County (lbs/ac)	40" Rows Fresno County (lbs/ac)	30" Rows Madera County (lbs/ac)	30" Rows Merced County (lbs/ac)	Across all Sites (lbs/ac)	As % of variety Maxxa	
CPCSD	Maxxa	1357	991	1522	1222	1258	1188	1303	1654	1312	100	33.9
Phytogen	Phy-72	1781	1362	1648	1463	1456	1484	1394	1863	1556	119	32.7
CPCSD	Riata RR	1583	1190	1547	1339	1422	1319	1431	1744	1447	110	34.5
CPCSD	Ultima	1572	994	1511	1275	1282	1155	1312	1669	1346	103	35.1
Delta and Pine Land	DP-6207	1517	1188	1519	1330	1280	1487	1365	1702	1424	109	32.9
Delta and Pine Land	DP-6100 RR	1491	1089	1372	1226	1130	1312	1150	1516	1286	98	31.4
Phytogen	Phy-78	1609	1662	1513	1423	1478	1675	1378	1849	1573	120	32.3
CPCSD	Summit	1339	1107	1603	1266	1322	1178	1366	1632	1352	103	34.7
CPCSD	Sierra RR	1571	1313	1513	1319	1291	1386	1351	1696	1430	109	34.0
Mean		1536 (above Acalas only)	1211 (above Acalas Only)	1528	1318	1324	1354	1339	1703	1414 (above Acalas only)	108	33.5
Bayer Fibermax	FM-989 BR	1444	966	-	-	-	-	-	-	1205* (only 2 sites)	103* (only 2 sites)	34.3*
Delta and Pine Land Co.	DP-5415 RR	1603	1320	-	-	-	-	-	-	1462* (only 2 sites)	126* (only 2 sites)	34.5*
LSD 0.05 0.05		138	126	82	46	69	123	79	89	32		0.3
C.V. (%)		6.2	7.3	3.7	2.4	3.6	6.2	4.0	3.6	4.4		1.5
Probability (P)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000

* data from these varieties not included in over-location averages or statistics