Pima Regional Variety Test at the Maricopa Agricultural Center, 1997

G. L. Hart, J. M. Nelson and L. J. Clark

Abstract

Eighteen Pima varieties were grown in a replicated trial at the Maricopa Agricultural Center as part of the national cotton variety testing program. Lint yield, boll size, lint percent, plant population and fiber property data are presented in this report.

Introduction

This trial was conducted to evaluate Pima varieties and experimental strains under central Arizona conditions. Varieties from the USDA and private seed companies were included. This trial was part of the national cotton variety testing program with S-7 designated as the national standard and OA 312 and S-6 being regional standards.

Materials and Methods

This trial was located in a level basin field with 850 foot runs and was arranged in a randomized complete block design replicated five times. Plots were four rows wide, 43 feet long, with 40 inch spacing. The field was preirrigated on 20 March and seed planted in moist soil on 10 April. Additional irrigations were on 30 April, 19 May, 5 June,20 June, 2 July, 14 July, 24 July, 4 August, 15 August and 5 September. The cotton received 120 lbs/acre of nitrogen during the season. Orthene and Knack was applied on 23 July, Lannate and Lockon on 12 August, Lockon and Orthene on 21 August and Applaud and Penncapp on 29 August. The planting was defoliated on 29 September and 6 October and the center two rows of each plot were machine harvested on 29 October. Heat units (threshold 86/55 degrees F) for the growing season were 4161 and rainfall during the period (10 April to 29 September) was 1.87 inches. Fifty hand picked samples taken out of two reps were used to determine lint percent and boll size. The same sample was ginned and twenty grams of lint was analyzed for fiber properties.

Results and Discussion

Results of the trial are shown in Table 1. Yields ranged from 463 to 1430 lbs lint/acre. The 1997 cotton growing season was characterized by heavy Lygus infestations. Three and four year averages of lint yields are presented in Tables 2 and 3, respectively. Fiber properties (HVI) are listed in Table 4.

Table 1. Lint yields, boll size, lint percent and plant populations of 18 varieties in the Maricopa Pima Regional Variety Test, 1997.

Variety	Lint yield (lbs/acre)	Boll size (grams)	Lint Percent	Plant Population (#/acre)
OA 340	1430a*	3.09abc	38.97bc	20651ab
95-127	1267ab	2.82bcde	36.97cd	18820ab
OA 312	1217ab	2.80cde	36.92cd	22742a
OA 338	1197ab	3.13ab	38.00bcd	13845b
S-7	1178ab	2.96a-e	38.10bcd	21173ab
OA 325	1161ab	2.80cde	36.92cd	17252ab
OA 337	1146ab	2.73de	37.94bcd	19082ab
OA 328	1139ab	2.83bcde	39.38bc	19082ab
UA 5	1126ab	2.93a-e	36.78cd	24049a
UA 4	1032b	3.17a	37.60cd	20128ab
OA 361	1025b	2.74de	38.27bcd	21453a
OA 341	997b	2.99a-e	36.02d	17514ab
OA 339	985b	2.73de	40.37b	16991ab
CR 271	955b	2.72de	36.00d	19605ab
OA 322	946b	2.67e	38.80bc	16991ab
S-6	942b	2.78cde	38.52bcd	17763ab
OA 307	488c	2.68e	37.12cd	7581c
CR 272	463c	2.78cde	28.49e	25356a
Average	1039	2.86	37.29	18894
CV %	20.0	111.0	-------	836.0

* Means followed by the same letter are not significantly different at the 0.05 probability level.

Table 2. Three year lint yield averages of 6 varieties in the Pima Regional Variety Test at the Maricopa Agricultural Center, 1997.

Variety	Lint yield (lbs/acre)
OA 328	1116
OA 312	1092
OA 322	1037
OA 337	1030
S-7	975
S-6	761

Table 3. Four year lint yield averages of 3 varieties in the Pima Regional Variety Test at the Maricopa Agricultural Center, 1997.

Variety	Lint yield (lbs/acre)
OA 312	1096
S-7	1025
S-6	800

Table 4. Fiber properties data (HVI) for varieties in the Pima Regional Variety Test at the Maricopa Agricultural Center, 1997.

Variety	LEN	UR	STR	E1	MIC	RD	b
OA 322	1.31	89.1	35.2	10.2	4.1	63.1	9.1
OA 361	1.32	88.1	39.9	11.0	4.2	63.1	8.8
OA 325	1.34	90.1	43.1	11.0	4.4	62.8	9.6
OA 328	1.31	88.3	38.3	10.5	4.4	62.8	9.5
OA 337	1.33	89.4	41.6	10.5	4.4	63.0	9.0
S-7	1.35	89.6	40.5	10.5	4.5	62.7	9.6
S-6	1.34	88.5	38.8	11.0	4.3	62.6	9.8
OA 312	1.35	89.8	44.4	11.0	4.3	62.6	9.6
UA 4	1.38	91.0	43.4	11.0	4.3	63.0	9.2
UA 5	1.37	90.2	42.3	11.0	4.1	62.8	9.4
95-127	1.37	89.8	40.0	11.0	4.3	62.7	9.2
CR 272	1.36	89.8	35.1	11.0	3.9	63.0	8.9
CR 271	1.36	89.8	40.2	10.5	4.2	62.4	10.0
OA 339	1.35	88.9	37.6	10.0	4.0	63.3	8.5
OA 340	1.34	89.8	42.8	11.0	4.3	63.0	9.0
OA 307	1.37	90.6	46.4	11.0	4.1	63.3	8.4
OA 341	1.36	90.6	40.9	10.5	4.0	62.8	9.3
OA 338	1.37	89.5	39.8	10.0	4.2	62.6	9.6