Pima Regional Variety Test; Maricopa Agricultural Center, 1994

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Abstract

Nine Pima varieties and experimental strains were grown in a replicated trial at the Maricopa Agricultural Center. Lint yield, boll size, lint percent, plant population and fiber property data are presented in this report.

Introduction

This trial was conducted to evaluate established Pima varieties and experimental strains under central Arizona conditions. Varieties from the USDA and private seed companies were included. Micro spinning and HVI (high volume instrument) analyses were run on the entries from both the Maricopa and Safford locations. Lee Clark will present the results of the Safford Pima trial in a separate report.

Materials and Methods

This trial was located in a field with 850 ft. length rows arranged in a randomized complete block design replicated five times. Plots were 4 rows wide, 43 ft. long, with 40 inch row spacing. The field was preirrigated on 22 March and seed was planted in moist soil on 8 April. Additional irrigations were on 9 May, 6 June, 21 June, 1 July, 25 July, 5 August and 18 August. The planting was defoliated on 5 and 20 October and the center two rows of each plot were machine harvested on 1 November. Heat units (threshold 86/55°F) for the growing season were 4273 and rainfall during that period (8 April to 5 October) was 3.16 inches.

Twenty-five hand picked boll samples taken out of 2 reps were used to determine lint % and boll size. The same sample was ginned and 20 grams of lint were analyzed for fiber properties. Grab samples taken at the time of harvest were ginned and 150 grams of lint was used for micro spinning.

Results and Discussion

Results of the trial are shown in Table 1. Yields ranged from 873 to 1241 lbs. lint/acre. The nighttime temperatures were the highest at Maricopa in over 20 years which might have resulted in lower yields. Two year and three year averages of lint yield are represented in Tables 2 and 3, respectively. Fiber properties (HVI) are listed in Table 4. Micro spinning data is listed in Table 5.

Table 1. Lint yield, boll size, lint percent and plant population for Pima varieties in the regional variety test at the Maricopa Agricultural Center, 1994.

Variety	Lint Yield (lbs/acre)	Boll Size (g/boll)	Lint Percent	Population (pl/acre)
PHY 21	1241a*	2.79bcd	36.93ab	25355a
OA 305	1233a	2.85a-d	35.35b	26401a
S-7	1176a	2.81cd	37.36a	25356a
OA 304	1113a	2.71cd	35.38b	23003a
OA 312	1105a	2.62d	36.89ab	25879a
P-76	1092a	2.70cd	37.62a	21435a
S-6	915b	2.96abc	37.00ab	24572a
OROBLANCO	886b	3.06ab	36.18ab	24049a
P-75	873b	3.12a	36.72ab	23264a
Average	1070	2.85	36.60	24368
CV	10.1	5.7	---	15.7

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

Table 2. Two year lint yield average of 8 varieties in the Pima regional variety test at the Maricopa Agricultural Center, 1994.

Variety	Lint Yield (lb/acre)
OA 305	1347
OA 312	1338
OA 304	1335
S-7	1312
P-76	1273
OROBLANCO	1205
P-75	1205
S-6	1199

Table 3. Three year lint yield average of 6 varieties in the Pima regional variety test at the Maricopa Agricultural Center, 1994.

Variety	Lint Yield (lb/acre)
OA 304	1219
OA 312	1151
S-7	1147
P-76	1053
P-75	1040
S-6	1010

Table 4. Fiber properties data (HVI) for Pima varieties in the regional Pima cotton variety test at the Maricopa Agricultural Center, 1994.

Variety	Length	UR	Strength	El	MIC	RD	b
OROBLANCO	1.34	89.6	45.6	12.0	4.3	67.6	12.0
PHY 21	1.34	89.3	44.1	10.0	3.9	69.2	11.3
OA 304	1.32	88.6	46.9	11.0	4.0	69.6	11.2
OA 305	1.33	89.3	45.6	11.0	4.1	67.2	12.0
OA 312	1.31	87.9	47.6	11.0	4.0	64.6	11.3
S-6	1.34	88.9	45.8	11.0	4.1	66.1	12.2
S-7	1.34	89.5	49.7	11.0	4.0	68.2	11.6
P-75	1.32	89.2	42.4	11.0	4.1	66.3	11.9
p-76	1.32	87.4	49.0	11.0	4.0	68.4	11.4

Table 5. Micro spinning data for Pima varieties in the regional Pima cotton variety test at the Maricopa Agricultural Center, 1994.

Variety	MIC	(Stm) El	Tl	50% SL	2.5%SL	YTEN 22' (g/tx)
OROBLANCO	3.9	7.3	29.2	0.64	1.40	171.8
PHY 21	3.8	6.6	30.4	0.65	1.42	168.0
OA 304	3.8	6.5	32.6	0.65	1.40	182.1
OA 305	4.1	7.1	30.1	0.67	1.42	185.1
OA 312	3.8	6.3	30.7	0.64	1.40	176.2
S-6	3.9	6.9	30.3	0.67	1.41	170.4
S-7	3.9	6.3	33.6	0.65	1.40	184.2
P-75	4.0	6.8	29.6	0.64	1.39	170.7
P-76	3.9	6.8	32.3	0.65	1.39	175.6