Upland Advance Strains Cotton Variety Test at The Maricopa Agricultural Center

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

Abstract

Thirty-six upland cotton advance 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

An advance strains variety test was conducted at the Maricopa Agricultural Center. Experimental strains from breeders were included in this test. DPL 5415 and DPL 90 were used as checks.

Materials and Methods

This trial was located in a level basin field with 850 ft. runs and was arranged in a randomized complete block design replicated five times. Plots were four rows wide, 43 ft. long, with 40 in. 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 20 August. The planting was defoliated on 5 October 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 the period (8 April to 5 October) was 3.16 inches.

Twenty-five hand picked boll samples taken out of the two reps were used to determine lint percent and boll size. The same sample was ginned and 20 grams of lint was analyzed for fiber properties.

Results and Discussion

Results of the trial are shown in Table 1. Yields ranged from 977 to 1952 lbs. lint/acre. The nightime temperatures were the highest at Maricopa in over twenty years which might have resulted in lower yields. Two year averages of lint yield are in Table 2. Fiber properties (HVI) are listed in Table 3.

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

Variety	Lint Yield (lbs/acre)	Boll Size (g/boll)	Lint Percent	Population (pl/acre)
DPL 5415	1952a*	4.14bc	38.89a	30845ab
DPLX 8732	1808ab	3.93bc	38.29ab	29800ab
SGX 247	1801ab	4.59abc	38.86a	30322ab
MYCO 3090	1754abc	3.98bc	37.16a-g	27970ab
JSX 246	1746a-d	3.90bc	37.64a-e	31368ab
SGX 326	1743a-d	4.26bc	38.23ab	29800ab
CB 407	1741a-d	4.42abc	37.31a-f	30584ab
MYCO 3076	1740a-d	4.21bc	37.22a-f	28493ab
MYCO 4002	1738a-d	4.37abc	37.52a-f	28493ab
MYCO 3073	1727a-d	4.01bc	37.50a-f	27186ab
CB 1135	1712a-d	4.46abc	37.92abc	31629ab
JSX 110-51	1684a-e	4.07bc	37.77a-d	24572ab
DPL 90	1683a-e	4.17bc	37.86abc	24049ab
CB 333	1657a-f	4.56abc	37.93abc	40517a
GA 90b	1655a-f	3.86bc	38.28ab	23003ab
HZ 1560	1653a-f	4.73ab	39.18a	33982ab
OA 44	1617a-g	3.91bc	34.44h-k	29015ab
MYCO 3075	1588b-g	4.46abc	36.75a-h	26663ab
OA 7	1575b-g	4.11bc	38.79a	24572ab
SGX 810	1565b-g	4.08bc	38.29ab	37119ab
SGX 653	1533b-g	4.18bc	36.97a-g	29273ab
MYCO 4010	1489b-h	4.42abc	35.95b-i	25879ab
MYCO 4001	1460b-h	3.95bc	37.29a-f	24572ab
OA 50	1459b-h	4.29abc	34.92f-j	30061ab
HZ 1380	1448c-h	3.74c	36.78a-h	23265ab
HBX 92-172	1405c-h	3.88bc	35.06e-j	26140ab
HZ 1330	1402c-h	4.08bc	36.77a-h	31107ab
SGX 379	1396d-h	4.23bc	33.72ijk	24310ab
GA 89-224	1364e-h	4.76ab	34.49hij	21958ab
SDCK 312	1355e-h	4.39abc	35.18d-i	30845ab
GA 89-78	1335fgh	4.15bc	35.48c-i	18559b
PHYB 2584	1287gh	4.58abc	34.72g-j	31629ab
PHYB 32256	1184hi	5.11a	32.75jkl	32675ab
PHYB 7451	1171hi	3.97bc	33.53ijk	31629ab
HY 007	1038i	4.46abc	31.48l	26663ab
PHYB 4920	977i	4.42abc	32.25kl	25094ab
Average	1540	4.25	36.47	28841
CV	9.8	9.1	----	36.5

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

Table 2. Two year lint yield average of seven varieties in the advance strains variety test at the Maricopa Agricultural Center, 1994.

Variety	Lint Yield (lb/acre)
JSX 110-51	1772
JSX 246	1710
CB 333	1669
CB 1135	1649
HBX 92-172	1531
HZ 1380	1466
HZ 1330	1416

Table 3. Fiber properties data (HVI) for upland varieties in the advance strains cotton variety test at the Maricopa Agricultural Center, 1994.

Variety	Length	UR	Strength	el	MIC	RD	b
HZ 1330	1.13	84.0	29.5	9.4	5.1	73.9	7.0
HZ 1560	1.15	85.0	27.9	9.9	4.8	73.7	7.8
HZ 1380	1.13	83.5	25.7	9.5	4.7	75.1	7.5
HBX 172	1.17	83.8	26.4	8.9	4.8	71.7	7.0
HY 007	1.14	83.6	29.3	9.6	4.3	76.4	7.7
MYCO 4002	1.19	84.0	29.3	9.3	5.0	72.4	7.2
MYCO 4001	1.11	83.5	31.3	9.5	5.1	76.1	8.2
MYCO 3076	1.13	86.1	33.7	10.0	5.1	76.9	8.7
MYCO 3075	1.17	84.4	32.6	9.7	4.8	77.3	7.8
MYCO 3090	1.15	84.4	31.5	9.8	5.1	73.6	7.3
MYCO 4010	1.12	84.0	29.9	9.7	5.3	75.3	8.2
MYCO 3073	1.13	83.8	30.8	9.7	5.0	75.7	7.5
CB 333	1.10	84.1	26.5	9.4	5.2	74.0	7.8
CB 407	1.13	83.9	27.5	9.9	5.1	75.6	7.3
CB 1135	1.16	84.3	28.5	9.4	5.0	74.9	7.4
SGX 379	1.20	84.4	24.9	8.8	4.1	77.4	7.1
SGX 653	1.13	85.0	31.9	10.0	5.3	73.6	7.9
SGX 326	1.14	84.1	30.0	9.7	4.7	75.4	7.3
SGX 247	1.16	84.2	31.2	9.4	4.7	77.1	7.2
SGX 810	1.13	84.5	31.3	10.0	4.7	77.1	7.8
PHY B2584	1.18	86.8	34.9	10.0	4.8	71.9	7.9
PHY B4920	1.14	85.2	31.3	9.5	4.5	75.9	7.7
PHY B7451	1.16	85.4	32.5	10.0	4.7	74.5	7.8
PHY B32	1.20	86.6	34.0	9.9	4.2	73.9	7.8
OA 7	1.10	81.9	31.1	9.4	5.3	77.4	8.2
OA 44	1.16	85.8	31.2	9.9	5.5	73.2	6.9
JSX 110	1.06	83.0	32.3	10.0	5.3	75.8	7.6
JSX 246	1.13	83.7	31.3	9.2	5.2	77.0	7.8
GA90B	1.13	85.8	31.7	9.8	5.2	72.6	8.4
GA224	1.14	85.4	33.3	9.5	5.0	69.1	7.0
GA78	1.17	85.1	30.1	9.0	4.6	74.5	7.0
DPLX 8732	1.18	82.8	30.7	9.1	4.7	78.0	7.8
DPL 5415	1.14	84.2	29.0	9.8	5.2	81.0	7.5
OA 50	1.17	84.4	27.3	9.8	4.5	77.1	8.1
DPL 90	1.14	83.9	32.5	9.8	4.9	76.8	8.0
COOKER 312	1.18	85.5	26.5	8.9	4.6	74.5	7.3