

Cotton Variety Tests Continue

Mesa, Sacaton, Yuma Results Are Reported

By E. H. Pressley

Plant Breeding

In cooperation with the U. S. Cotton Field Station at Sacaton, variety tests were conducted at Mesa, Sacaton and Yuma along the same line as has been followed since 1947. The usual yield data were obtained along with length, strength, fineness, size of boll, earliness, and other characters of importance in the production of cotton.

Spinning tests were obtained on samples taken from each variety at each location. From these tests yarn strength, quality, nep count and other factors were determined.

New Varieties Tested

Some changes were made in the varieties used in the tests in 1952. Round Boll, a selection out of 1517 made at the Sacaton Station, P18-C, and the old strain of 4-42 were dropped. A new strain of 4-42, which shows considerable resistance to Verticillium Wilt, and 29-16 obtained from California and grown to some extent in the Safford area last year were added.

In general the results followed very closely those obtained in five previous years of testing. As has been the case in the past with only one exception, Arizona 28 produced the highest average yield of lint per acre at the three stations. This variety has been dropped from the breeding program, however, because of its lack of storm resistance, and its relatively weak and fine fiber.

There was no significant difference in yield of the varieties at Mesa and Yuma. At Sacaton, however, there was a highly significant difference. Arizona 28 and A X D were out in front by a good margin, while 29-16 was a poor last.

Table 1 — Cooperative Cotton Variety Tests — 1952

YIELD OF LINT PER ACRE				
Variety	Mesa	Sacaton	Yuma	Average
28	1144	1313	1561	1339
44	1160	1136	1512	1269
33	1154	1039	1521	1238
AXD	1153	1301	1418	1291
4-42WR	1201	1163	1587	1317
29-16	1081	974	1533	1196
Average	1149	1154	1522	1275
LSD				
P.05		96		
P.01		131		

A X D, which was developed at Sacaton, has always given good yields and has good spinning quality. However, it matures a little late for some areas of the state, and has relatively small bolls.

A new selection out of this strain which is thought to be earlier and to have larger bolls was grown on the Mesa farm last year but not in the yield test. A sample of the lint was spun and showed up quite well. The new strain is included in the 1953 yield tests for a more direct comparison with the other varieties.

4-42 W.R. Looks Good

Attention is called to the performance of the new strain of 4-42 known as 4-42W.R. It produced the highest yield at Mesa and Yuma, and was third highest at Sacaton. Its average at the three stations was only a few pounds less than that of 28. In the previous five years of testing, the old strain of 4-42 gave the lowest average yield of any variety tested. The new strain is included in all variety tests for 1953.

Results from the spinning tests conducted were very uniform except in the case of yarn strength where 29-16 showed up particularly well. There was very little difference between varieties in yarn appearance — all being considerably above average. There was more difference between locations where the samples were grown than between the varieties

COVER PICTURE: Families of Arizona 44 in the breeding block on the University's Campbell avenue farm, Tucson, December, 1952.

themselves. The best appearing yarns came from the Mesa test and the poorest from Yuma.

The nep count was much lower than usual in the 1952 tests, and there was very little difference between varieties. This was also true of the percentage of waste.

A variety test was grown at Safford on soil heavily infested with Verticillium Wilt. Except for the old strain of 4-42, the varieties and strains included have all shown some tolerance to Verticillium.

Table 2 — Cotton Variety Test Yields at Safford — 1952

Variety	Lint per acre	Strength of 22s yarns	Yarn appearance index	Neps in 100 sq.in. card web
29-76-16	815	124.3	105.0	9
4-42WR	777	124.6	102.5	16
29-16	767	128.7	110.0	16
29-46	687	143.2	107.5	13
AHA-46-124	623	150.4	97.5	18
1517-C	594	138.8	100	34
AHA-501/	427			
4-42 (Old Strain)	392	126.4	102.5	18

1/ Not spun

2/ Average appearance=100

The varieties in Table 2 are listed in order of production of lint per acre. Strength of 22s yarns, yarn appearance index, and the nep count are also shown.

The strain 29-76-16 is new, and was selected from breeding material obtained from California about five years ago. It has led the yield test at Safford for the last three years when grown on wilt land. Seed is now being increased for a more thorough testing. It looks very promising both from the standpoint of yield and spinning quality for those areas where wilt is a problem.