BROADCAST COTTON - 1966

Robert E. Briggs, Associate Agronomist
Lloyd L. Patterson, Research Associate in Agronomy

A new method of planting broadcast cotton and obtaining a stand was tried in 1966 with relatively good results. The varieties Delta Pine Smooth Leaf (DpSL) and Arizona Experimental Strain 6010 (A-6010) were broadcast in April on flat ground at the Cotton Research Center, Phoenix.

Gin run fuzzy seed of DpSL was broadcast with a beater-type manure spreader. This method of broadcasting seed was unsatisfactory as the planting rate varied from 200 to 600 pounds per acre depending on the roughness of the soil.

Acid-delinted seed of A-6010 was spread on the soil surface with a grain drill at the rate of about 180 pounds per acre on a strip adjacent to the DpSL. Treflan was then sprayed on the seeded ground at a rate 3/4 lb. per acre. Immediately following the Treflan application, the ground was corrugated lengthwise of the planted strips to incorporate the Treflan and cover the seed. The corrugations also helped in water distribution with border irrigation.

Water was applied the next day, April 21, to germinate the seed. As soon as the ground was dry enough, a rotary hoe was used to break a crust which formed. This was followed by a cultipacker to firm the soil around the germinating seeds.

Random stand counts made on June 4 showed an average of 238,310 plants per acre in the fuzzy seeded DpSL plots and 172,606 plants per acre in the delinted seeded A-6010 plots.

Phosfon, a plant growth inhibitor, was sprayed on the soil at three rates and was incorporated by disking prior to broadcasting the seed which resulted in three plots across both varieties. There was no effect on plant growth from these applications.

When the plants were about 12" high and producing their first flowers, foliar applications of Cycocel (Chloro-Choline-Chloride [C.C.C.]), a plant growth regulant, were made at the following rates and dates: 1 lb/1 acre, July 1; 1/2 lb/acre, July 1; 1/4 lb/acre, July 1 and repeated July 27; 1 lb/acre, July 12; 1/2 lb/acre, July 12; 1/4 lb/acre July 12 and an untreated check. The C.C.C. treated plots and check or untreated plots were replicated three times. However, each third had a different irrigation cut-off date.

The lower third of the field received its last irrigation on July 29 for a total of five irrigations. The middle third had six irrigations with the final one on August 16. The upper third of the field received the final irrigation on September 20 for a total of seven irrigations. All of the above received the first irrigation on April 21.

This test was a preliminary study of the broadcast-planting method with various irrigation treatments. Irrigation treatments were not replicated so these results cannot be analyzed statistically.

Calculated seed-cotton yields per acre are given at the end of this article. The results are averages of the three irrigation methods used. Further work will be continued with broadcast cotton and with various growth regulators to modify normal growth.

Boll samples were collected for fiber determinations but results are not available at this time.

Calculated seed cotton yield per acre of broadcast planted DpSL and A-6010 with several C.C.C. treatments and a check. Phoenix, 1966

Treatment and Date Applied	Variety	
	DpSL	A-6010
	Lbs Seed Cotton Per Acre	Lbs Seed Cotton Per Acre
1. Check (untreated)	2940	3511
2. 1/4 lb C.C.C./A, 7/1 & 7/27	2609	2764
3. 1/2 lb C.C.C./A, 7/1	2645	3220
4. 1 lb C.C.C./A, 7/1	2749	2976
5. 1/4 lb C.C.C./A, 7/12	3676	3765
6. 1/2 lb C.C.C./A, 7/12	3272	3314
7. 1 lb C.C.C./A, 7/12	3007	2873

* * * * *

JULY PLANTED BROADCAST COTTON - 1966

Lloyd L. Patterson, Research Associate in Agronomy
Robert E. Briggs, Associate Agronomist

Previous experience with broadcast cotton has indicated that when grown with very close row spacing and high plant populations, all varieties have set and matured their bolls late in the season. It was decided to plant in July to determine whether late broadcast plantings might yield as well as early plantings since under high-plant populations only two or three bolls per plant are needed to produce a good yield.

Three planting dates were chosen with the latest planting still theoretically able to allow the plant to mature. The planting dates were July 8, 19, and 28, 1966. Planting on July 28 proved to be too late for this area. However, the first two dates provided a growing season which allowed cotton to mature.