

areas were stunted early in the season. Later on these plants made normal growth. There were no differences in stand or seedling vigor between the Prefar and the untreated area.

Table II. Yield of Seed Cotton - October 28, 1967

Treatment	lb/A
Check	2234
Planavin	2247
Treflan	2221
Prefar	2404

There was no significant difference in the yield of seed cotton due to the herbicide treatments as evaluated in this test. The cotton plants appeared to compensate where the stands were thinned. Because all of the cotton was harvested at the same time it was impossible to evaluate any possible effect upon the maturity of the cotton due to the herbicide treatments.

Weed control was not evaluated for each herbicide because of the inconsistency of weed stands in the plots.

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HERBICIDE APPLICATION WITH THE BEDSHAPER-PLANTER

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Six different herbicides were incorporated with the bedshaper-planter. The objectives were to apply the herbicides broadcast and plant the seed beneath the layer of chemical. Some herbicides, particularly diuron, are quite toxic to cotton seedlings unless physical separation is maintained. There was no reduction in plant population due to treatment. Weed control was nearly perfect throughout the season. The check did have an early infestation of weeds. However, there was no significant difference in yield in any of the treatments.

Indications are that any number of herbicides when separated from the seed and root zone give excellent weed control with no resulting damage to the plant. Treatments were as follows:

1. Trifluralin (Treflan) 3/4 lb/A + Diuron (Karmex) 1 lb/A.
2. DCPA (Dacthal) 9 lb/A + Diuron 1 lb/A.
3. Bensulide (Prefar) 2 lb/A + Diuron 1 lb/A.
4. Planavin 3/4 lb/A + Diuron 1 lb/A.

5. Trifluralin 3/4 lb/A + Prometryne (Caparol) 2 lb/A.
6. Bensulide 2 lb/A + Prometryne 2 lb/A.
7. Control - no chemicals.

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PREPLANT INCORPORATION OF PLANAVIN AND TRIFLURALIN

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This test was designed to measure the effects of various methods of incorporation of Planavin and Trifluralin on the yield of cotton. The incorporation methods used for both herbicides were: 1) Apply on the flat, and list; 2) Apply on the flat, shallow incorporate, and list; 3) Apply on the flat, deep incorporate and list; and 4) List, apply on the listed beds, and shallow incorporate. There were nine treatments and four replications. There was no significant difference in yield for any of the treatments.

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EFFECTS OF SOIL APPLICATIONS OF HERBICIDES ON FOLLOWING CROPS

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Larger amounts and more types of herbicides are used in cotton than in any other crop in Arizona. However, the residues of herbicides applied in cotton may persist and affect the following crops. A test was started in 1966 at Mesa to determine how long several commercial herbicides might affect the growth of various crops. The herbicides were applied at rates that might occur as residues if unusual cultural practices reduced microbial breakdown and created soil residues. This type of test also indicated which crops are susceptible to, or tolerant to, soil residues of various herbicides.

Bensulide (Prefar), DCPA (Dacthal), 2,4-D, picloram (Tordon), atrazine (Atrazine), prometryne (Caparol), propazine (Propazine), benefin (Balan), nitralin (Planavin), trifluralin (Treflan), bromacil (Hyvar-X), diuron (Karmex), linuron (Lorox), and monuron (Telvar) at rates indicated in Table I were applied to the soil and incorporated by disking on October 19, 1966. The soil of the test area contained 38% sand, 42% silt, 20% clay and 1% organic matter. Herbicides were applied to plots 12 x 30 feet and treatments were replicated twice.

Immediately after herbicides were applied, eight crops, indicated in Table I, were planted in dry soil on vegetable beds and the field was given a germination irrigation. Crop injury ratings are estimates of stand