

EFFECTS OF STARTER FERTILIZER ON COTTON IN SOUTH GEORGIA

C. Bednarz, G. Gascho and G. Harris

University of Georgia

Tifton, GA

Abstract

The effects of starter fertilizers on cotton (*Gossypium hirsutum* L.) growth and lint yield were investigated at three locations in Georgia differing in soil type. The three locations with soil types were (1) Southeast Georgia Branch Station in Midville; Dothan loamy sand, (2) Southwest Branch Experiment Station in Plains; Greenville sandy clay loam, and (3) Coastal Plain Experiment Station in Tifton; Tifton loamy sand.

The variety used in all locations was DP5690. Midville was planted April 24th, Plains was planted April 25th, and Tifton was planted May 10th. The standard fertility practices at each location were as follows; Midville: 372 lbs./ac 8-8-16 PPI and 30 lbs./ac sidedress N, Plains: 300 lbs./ac 3-18-9 PPI and 60 lbs./ac sidedress N, Tifton: 600 lbs./ac 3-9-18 PPI and 60 lbs./ac sidedress N. The starter fertilizer treatments were applied 2 X 2 and were as follows; (1) 9-0-0-11 (CaNO₃) at 9 g/ac, (2) 28-0-0-5 (S) at 10 g/ac, (3) 10-34-0 at 10 g/ac, (4) treatment 3 with 2 qt Amisorb/ac, (5) 32-0-0 at 10 g/ac, (6) treatment 5 with 2 qt Amisorb/ac, (7) 10-34-0 at 9.1 g/ac plus 32-0-0 at 6.8 g/ac (to give 34 lbs N and P₂O₅/ac), (8) treatment 7 with 2 qt Amisorb/ac, (9) untreated, and (10) Asset-RTU at 1 qt/ac (Tifton location only).

Seedling emergence, plant height, number of mainstem nodes, shoot dry weight, and tissue N, P, Ca, and S were investigated with variable results.

Generally speaking, the treatments containing N produced a significant yield increase in Midville. Treatments 2 (1569 lb lint/ac), 4 (1445 lb lint/ac), and 5 (1510 lb lint/ac) were significantly higher than the untreated (1147 lb lint/ac). Treatment 4 (containing Amisorb) was not significantly different from the same fertilizer treatment without Amisorb (treatment 3; 1359 lb lint/ac).

At the Plains location significant yield increases were observed in the treatments containing phosphate. Treatments 3 (1176 lb lint/ac), 4 (1093 lb lint/ac), and 7 (1082 lb lint/ac) were significantly higher than the untreated (937 lb lint/ac). Again, treatment 4 (containing Amisorb) was not significantly different from the same fertilizer treatment without Amisorb (treatment 3).

No significant yield differences were observed at the Tifton location. The average yield at Tifton across all treatments was 1405 lb lint/ac.

A significant yield response from CaNO₃, Amisorb, or Asset-RTU was not observed in this study.

