ECONOMIC CONSEQUENCES OF USING DIFFERENT COTTON VARIETY TECHNOLOGY SYSTEMS IN NORTH ALABAMA

SUMMARY

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Materials and Methods:Three cotton technology systems were evaluated in irrigated plots at the Tennessee Valley Research and Extension Center (TVREC) using a split split block design. In this study cotton varieties were the main plot variable and included Stoneville 4554 B2RF (=ST), Phytogen 485 WRF (=PHY) and a conventional variety, CT 210. The main plots were then split by weed control to include no pre-emergence herbicide applications compared to Cotoran and Prowl H2O applied at planting. The second split was by Heliothine control and included no insecticides for Heliothine control compared to insecticide applications for Heliothines. An on-farm conventional cotton variety trial was conducted in Franklin county. This test included 6 conventional varieties plus DPL 141 B2F. Test plots were arranged in a randomized complete block design with 3 replications per variety. Both hand-picked yields (six 10 feet sections of row per variety) and mechanically-harvested yields (2 whole plots per variety) were taken in the trial since weed problems significantly increased variability within plots. This test was never sprayed with any insecticide since no pest reached a treatment threshold.

Results: In the technology systems comparison CT 210 initially grew slower than the two biotech varieties. There was a significant variety x insecticide treatment response with respect to yield with CT 210 and PHY benefiting from Heliothine control. There was also a significant variety x herbicide interaction with respect to yield with CT 210 yielding more cotton when pre-emergence herbicides were used. Per cent lint turnout and measured lint quality variables were similar for all 3 varieties. All ST and PHY "with larvicide and without larvicide" treatments picked significantly more cotton than any of the CT 210 plots. There was no significant difference in ST and PHY "with larvicide and without larvicide" plots at TVREC. ST plots did not respond to larvicide sprays . A pyrethroid overspray on 7/30 significantly increased the PHY yield at TVREC by 106 lbs/acre. Larvicide sprays increased lint yield of CT 210 by 498 lbs/acre at TVREC. When loan values were multiplied by lint turnout/acre and total costs of seed + tech fees, herbicides and insecticides were deducted the best net returns obtained for each variety were: ST "with pre-emergence herbicides and without larvicide" = $933 per acre; PHY "with pre-emergence herbicides and without larvicide" = $919; and CT 210 "with pre-emergence herbicides and with larvicides" = $802. Mean seed cotton yields (lbs/acre) in the variety trial are given below.

Variety	Average Mechanical Picker Yield	Mean Hand-Picked Yield
Bronco 7139	2180	2386
CT Lindwood	2073	1871
CT 310	1829	2178
Top Pick	1690	2115
DPL 141B2F	1677	2325
CT 210	1577	2331
Bronco 1492	1293	2317