

**INFLUENCE OF COVER CROPS AND TILLAGE  
PRACTICES ON SOIL NUTRIENT STATUS, AND  
ON YIELD AND QUALITY OF COTTON**

**A. O. Abaye, G. Evanylo,**

**J. C. Maitland and W. Wilkinson**

**Virginia Polytechnic Institute and State University  
Blacksburg, VA**

**Abstract**

Currently, 107,000 acres of cotton are being grown in Virginia compared with 23,000 three years earlier. Conservation tillage cotton practices have increased during the last few years. This trend is primarily due to the farm bill (1990) conservation requirement and to decrease production cost. Experiments were conducted on Mayodan (clayey, mixed, thermic Typic Hapludults) to develop recommendations for production of high yields and good quality cotton under various cover crops and tillage practices: no-till vs conventional. Cover crops (rye, hairy vetch, hairy vetch + rye, wheat, crimson clover and lupine) were planted early fall. In the spring, three weeks prior to planting, cover crops were killed with various herbicides. Lint yield, boll counts, and high volume instrument quality parameters were measured for each treatment. Lint yield and boll numbers were increased ( $P < 0.05$ ) where hairy vetch + rye was used as cover crop compared to rye or wheat. No differences in lint yield and boll weight were observed due to tillage practices. Cotton quality, micronaire, length, strength and uniformity were not affected by cover crops or tillage practices. Further research is needed to fully understand yield benefits from the various cover crops.