

**INTEGRATION OF COTMAN AND THE COTTON  
NUTRIENT MONITORING PROGRAM IN THE  
EVALUATION OF VARIOUS SUPPLEMENTAL  
SOIL AND FOLIAR NITROGEN SOURCES**

**W. C. Robertson and P. S. Ballantyne  
Cooperative Extension Service  
University of Arkansas  
Little Rock, AR**

**Abstract**

The COTMAN program and Cotton Nutrient Monitoring program offer valuable insight in establishing plant status with regard to the impact of boll load and other stresses on the plants' progress toward cutout and its' nutrient status, respectively. These tools can be integrated to better establish the need for and timing of supplemental nitrogen. Once the need has been established, various soil and foliar products are available for use. This study was conducted to evaluate three soil and three foliar supplemental nitrogen compounds. The effects of supplemental soil applied nitrogen (23#/A in a single application) of ammonium nitrate, nitrate of soda, and urea were compared to foliar applications of Trisert (3qt/A X 3 applications), 23% N solution (3 gal/A X 3 applications) and CoRoN (1 gal/A X 2 applications). The two-year study was conducted in a producers' field near Pine Bluff, AR utilizing large plots running the entire length of the field (800 ft). The initial fertilizer application consisted of 80#N/A of UAN32 applied at stand establishment. The field was furrow irrigated after each supplemental fertilizer application that was initiated approximately one week prior to cutout as defined by COTMAN. Each treated plot was 24 rows wide and replicated four times. The center four rows of each plot was harvested with the producers' picker and weighed in the field with a boll buggy equipped with load cells. Lint yields did not differ statistically among supplemental nitrogen treatments but did exceed that of the untreated check. The increase in lint yield and cost of treatment including applications costs (\$4.00/A/application) over that of the untreated check (891 lb lint/A) were as follows: Trisert (81 lb/A - \$21.00), CoRoN (77 lb/A - \$19.70), 23% N solution (68 lb/A - \$17.85), ammonium nitrate (66 lb/A - \$12.46), nitrate of soda (60 lb/A - \$18.38), and urea (55 lb/A - \$7.63). Net returns/A were greatest for Trisert followed by ammonium nitrate, CoRoN, urea, 23% N solution, and nitrate of soda. Once the need for supplemental nitrogen treatments has been established, the cost of the product and potential returns should be given consideration. However, foliar applied compounds can be much more cost effective if they are made in conjunction with other treatments thus reducing application costs.