

EFFECT OF UREASE-NITRIFICATION INHIBITORS ON COTTON YIELD, FIBER QUALITY AND GROWTH**D.L. Coker****M.L. McFarland****G.D. Morgan****D.A. Mott****Texas AgriLife Extension Service****College Station, TX****Abstract**

Ongoing volatility in the fertilizer market place accentuates the need for careful management of nitrogen (N) fertility for cotton production. Applied nitrogen in cotton production systems is susceptible to loss through volatilization, runoff and/or leaching. Properly managed, slow-release N fertilizers have the potential to improve N use efficiency in cotton and thus, reduce N losses to water resources. Cotton cv. Phytogen 375 WRF was planted April 12, 2011 into a Wesswood silt loam, river bottom soil with a moderate residual N level as determined by soil sampling to 12 inches. Fertility treatments included a control (0 N) and 60 or 80 pounds of N per acre applied using liquid urea ammonium nitrate (UAN) alone or in combination with two urease-nitrification inhibitor products subsurface-banded at the second true leaf stage. An additional treatment included the application of 30 pounds of N per acre subsurface-banded at the second true leaf then 50 pounds of N per acre applied at matchhead square. Experimental units were arranged in a randomized complete block design and replicated five times. During a season with exceptionally hot, dry conditions, UAN applied alone or in combination with urease-nitrification inhibitors had minimal effect on plant size at early flowering or maturity near cutout. Micronaire varied significantly; however, there was no observed difference in fiber quality related to application of N from UAN or UAN with urease-nitrification inhibitors. Lint yield and gin turnout did not respond to applied N from UAN alone or with added urease-nitrification inhibitor products. Seasonal growing conditions and elevated levels of residual N fertility likely combined to minimize the effects of N stabilizer products on cotton growth, fiber quality and yield.