

# EVALUATING THE PROFITABILITY OF NITROGEN MANAGEMENT STRATEGIES TO INCREASE YIELD IN REGENERATIVE COTTON PRODUCTION SYSTEMS

A. Wright, J. Burke, K. Lewis, W. Keeling, and W. Keeling  
Texas A&M AgriLife Extension Service, Lubbock, TX  
[andrew.wright@ag.tamu.edu](mailto:andrew.wright@ag.tamu.edu) (806) 723-8458

## ABSTRACT

The objective of this study was to conduct an economic analysis of field trials conducted in 2018, 2019, and 2020 at the Agricultural Complex for Advanced Research and Extension Systems in Lamesa, TX, USA. The trials evaluated the impact of four nitrogen (N) fertilization timings on cotton yield: Farmer Practice (FP), FP + an additional application of N before planting (PRE), FP + an additional application of N post-emergence (POST), and FP + an additional application of N after pinhead square (PIN). Trials were conducted in a rye cover-crop system and in a conventional tillage system with winter fallow. In trials, an early-season N application resulted in a statistically significant increase in cotton yields in the cover-crop system but did not affect yields in the conventional system. To evaluate the relative profitability of different nitrogen timings in the cover crop system, we developed economic budgets and compared gross margins across nitrogen timings. Based on our results, an additional application of N before planting increased gross margin by \$74/acre relative to Farmer Practice. An additional application of N post-emergence increased gross margin by \$89/acre relative to Farmer Practice.