REPORT: In 2005, replicated field trials to compare yield, canopy height, lodging, and relative profitability of 8 rates of nitrogen fertilizer (from 50 to 400 pounds of N per acre), with and without an inoculant, were established in Duplin and Lenoir counties. These tests were not so much intended to see if adding nitrogen was profitable (we thought it would not be) but to see how much nitrogen soybeans could tolerate, and at what cost.

Yields were not increased by additions of nitrogen fertilizer (see left graph above). In fact, they tended to decrease somewhat at the higher rates, when lodging was generally more severe. The yields at 200 through 400 pounds of N per acre are difficult to explain; yields were higher with inoculation than without, even though that was not the case at the lower nitrogen rates. Only 200 pounds of N per acre were applied at planting, and all additional N was applied at full bloom. Averaged over all 8 rates of nitrogen, the inoculant produced an average of 1.4 Bu/A more yield than without inoculation, although the same inoculant (Nod +) produced no yield increase in the tests reported in the Yield Enhancements report.

None of the nitrogen additions were profitable (see right graph above). In fact, the higher rates were relatively expensive in terms of soybean profitability compared to adding no nitrogen.

Plot signs were put up in at least one replicate of all tests, to let interested parties check on the results to date at their leisure. All sites were labeled as an Extension on-farm test site, and as a test supported by the North Carolina soybean checkoff funds.

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