Peanut Response to Nitrogen Fertilizer and Inoculation.

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Inoculation is an important input in peanut production systems. Peanut yield increased by 32% in new ground fields (28 trials) and 4% in fields where peanut was planted previously (26 trials) over a 10-year period when inoculated with in-furrow application of liquid or granular *Bradyrhizobia*. When inoculant does not perform adequately, growers apply nitrogen (N) fertilizer as soon as nitrogen deficiency symptoms are evident. In five trials conducted in new ground fields, yield was 73% of inoculated peanut when inoculant and N were not applied. Nitrogen (as ammonium sulfate) in absence of inoculant increased yield to 89% (60 lbs actual N/acre), 96% (90 lbs actual N/acre), and 98% (120 and 150 lbs actual N/acre) of inoculated peanut. Ammonium nitrate at these rates of N increased yield 86 to 92%. Results from these trials show the value of inoculation of peanut in all fields, that the rate of N needed to correct an N deficiency is at least 120 lbs/acre, and ammonium sulfate is a more effective source of N than ammonium nitrate.