Bradyrhizobium Inoculation and Nitrogen Fertilization for West Texas Peanut. (S04-trostle162529-Poster)

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Abstract:

Nitrogen fertilization of peanut in high-pH (7.4 to 8.3) sandy soils of West Texas is common in spite of Bradyrhizobium inoculation and nodulation. Past research indicated little peanut yield response to fertilizer N. Field surveys indicate 25% or more of West Texas peanut fields have minimal to no Bradyrhizobium nodulation. A two-year study evaluated nodulation and peanut yield due to Bradyrhizobium inoculants (in-furrow liquid or granular, seedbox, or no applied inoculant) and N fertilizer (0, 22, 110 kg N/ha). On-farm trials were performed using 0, 55, and 110 kg N/ha. The degree of Bradyrhizobium nodulation was highest with liquid inoculants. Yield increased 300 to 700 kg/ha with N fertilizer at most locations. Yield increased 200 to 500 kg/ha in most trials when Bradyrhizobium inoculant was applied. Recommendations to growers include proper application of Bradyrhizobium inoculant for West Texas peanut, scouting of fields to determine degree of nodulation, and application of supplemental N fertilizer based on degree of nodulation for optimal economic peanut yield.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1635

Keywords:

Peanut, Bradyrhizobium, Nitrogen, Inoculation