Effects of Broiler Litter Application Relative to Commercial Fertilizer on Soybean Growth, Yield, and Risidual Soil N. (S08-adeli102755-Poster)

Authors:

- A.Adeli * USDA-ARS, Mississippi State, MS
- K.R.Sistani USDA-ARS, Mississippi State, MS
- M.F.A.Balaa. USDA-ARS, Mississippi State, MS
- D.E.Rowe USDA-ARS, Mississippi State, MS

• S.L.McGowen - USDA-ARS, Mississippi State, MS

Abstract:

The relatively high requirement of soybean for P, K, and micronutrients and the effectiveness of soybean as N sink, may make broiler litter as a good source of nutrients for soybean. This experiment was conducted in 2001 and 2002. A randomized complete block design with seven treatments and four replications was used. Treatments included control, broiler litter at the rate of 1, 2, 4 Mg/ha equivalent to approximately 56-37-40, 112-74-80, and 224-148-160 kg N-P-K/ha. Fertilizer was applied at rates equivalent to broiler litter derived P and K. Plant samples were taken at 15-d intervals from a 50-cm length of row. Dry matter accumulation, N uptake and plant N concentrations were increased with increasing broiler litter application. Nitrogen content was greatest early in the season and decreased as the season progressed. In 2002, at R3 stage (beginning pod formation) no significant difference in the amount of root nodules was obtained between broiler litter and commercial fertilizer applications at high rate. In 2001 broiler litter application increased soybean seed yield by 31 and 15% as compared to control and commercial fertilizer at high rate, respectively. In 2002, soybean yield total N and P uptake and residual soil N will be discussed.

Corresponding Author Information:

Ardeshir Adeli USDA-ARS P.O. Box 1555 Mississippi State, MS phone: (662)320-7410 fax: (662)3207544 e-mail: AAdeli@msamsstate.ars.usda.gov 39762

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