Using 15N Labeled Swine Effluent to Determine Nitrogen Use in Soybean. (S11-allen085107-Poster)

Authors:

- M.B.Allen North Carolina State University
- R.L.Mikkelsen North Carolina State University

Abstract:

Soybean is commonly overlooked as a potential receiver crop for anaerobic swine effluent due to its ability to fix nitrogen. The objective of this experiment was to determine the uptake of swine effluent derived nitrogen by soybean. Swine effluent was spiked with 15N-enriched ammonium sulfate in order to attain a final 15N enrichment of 5 atom % 15N. The enriched effluent was applied 6 times at weekly intervals to nodulating and non-nodulating soybean growing in one-meter lysimeters. Additional lysimeters with nodulating and nonnodulating soybean received no applications of effluent. Leachate was collected on a weekly basis and analyzed for 15N and total N. Soybean were harvested after 6 weeks and analyzed for 15N and total N. Nodulating soybean that received effluent applications contained higher tissue N concentrations compared to unfertilized controls. Nonnodulating soybean that received effluent. These results suggest that soybean can serve as an N receiver crop when swine effluent is the N source.

Corresponding Author Information:

Mark Allen North Carolina State University NCSU Dept of Soil Science Box 7619 phone: (919)-852-1651 e-mail: mballen2@unity.ncsu.edu

Raleigh, NC 27695-7619

Presentation Information:

Presentation Date: Tuesday, November 12, 2002 Presentation Time: 9:00-11:00 am Poster Board Number: 2335

Keywords:

Soybean, 15N enrichment, nitrogen reciever, lagoon effluent