Effects of Amendments on Test Values for P for a Soil Receiving Manure from an Egg-laying Operation. (S02-brauer170036-Poster)

Authors:

- D.Brauer - *USDA-ARS, Booneville AR*
- G.Aiken - *USDA-ARS, Booneville AR*
- D.Pote - *USDA-ARS, Booneville AR*
- L.D.Norton - *USDA-ARS, W. Lafayette, IN*
- S.Livingston - *USDA-ARS, W. Lafayette, IN*
- J.H.Edwards - *USDA-ARS, Auburn, AL*

Abstract:

Experiments are being conducted on a farm near Kurten TX to evaluate the effectiveness of soil amendments and forage systems for reducing soil test P levels. The site has received manure applications from dairy and egg laying operations for over 40 years. The soil is a Zulch fine sandy loam, which is inherently acidic and of low fertility; however manure applications have raised soil pH to 8.0 and soil test P to levels in excess of 200 mg/kg soil (dry weight). Soil amendments being evaluated include calcium sulfate, alum and a waste paper product high in Al. Additions of calcium sulfate significantly reduced water soluble P levels; whereas additions of either alum or waste paper had little effect on water soluble P. Laboratory studies have been conducted to determine the fate of added aluminum phosphate in this soil. Less than 20% of the aluminum phosphate added to the high P Zulch soil was recovered in an extractant specific for aluminum phosphate as compared to a recovery of 80% for a Gilpin silt loam soil. These results suggest

that the ineffectiveness of alum and waste paper to reduce water soluble P was due to instability of aluminum phosphate in this soil.

Corresponding Author Information:

David Brauer
USDA-ARS, Booneville AR
6883 Highway 23
Booneville, AR 72927

phone: 501-675-3834
e-mail: dbrauer@spa.ars.usda.gov

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 2133

Keywords:

phosphorus, paper, alum, calcium sulfate