Determination of N and P Concentrations in Broiler Litter Using Near Infrared Reflectance Spectroscopy. (S08-aiken102544-Poster)

Authors:

- G.E.Aiken - *USDA-ARS, Booneville, AR*
- D.H.Pote - *USDA-ARS, Booneville, AR*
- R.J.Piper - *Spectracon, Clearwater, FL*

Abstract:

Primary use of broiler litter has been as a fertilizer for pastures, but long-term applications of litter can cause accumulation of soil P. Knowledge of N and P levels in applied litter are necessary for setting application rates that are environmentally safe. An evaluation was conducted to determine if near infrared reflectance spectroscopy (NIRS) can be used to estimate N, P, and moisture concentrations in broiler litter. Litter samples collected from twelve broiler houses over a l-yr period (n = 132) were scanned fresh and then re-scanned after they were dried and ground. Estimates of moisture and N concentrations for fresh samples had correlation coefficients of 0.99 and 0.96, respectively, and standard errors of cross-validation of 7.53 and 2.87 g kg-1, respectively. Estimates of N and P concentrations for processed samples had correlation coefficients of 0.94 and 0.96, respectively, and standard errors of cross-validation of 2.14 and 1.27 g kg-1, respectively. Results indicate that NIRS can provide reasonable estimates of moisture, N, and P concentrations in broiler litter.

Corresponding Author Information:

Glen Aiken
USDA-ARS
6883 Hyw 23 South
Booneville, AR 72927

phone: 479.675.3834
fax: 479.675.2940
e-mail: gaiken@spa.ars.usda.gov

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 2131

Keywords:

animal waste, broiler litter, near infrared reflectance spectroscopy, phosphorous