



Are "As Excreted Values" Valid in Phosphorus Budgets for Grazing Beef Cattle?

Peter B. Deal¹, John J. White² and C. Randy Bateman³; (1) USDA-NRCS, (2) Osceola County Soil and Water Conservation District, (3) Osceola County Cooperative Extension Service; Contact Author Email: Pete.Deal@fl.usda.gov

Nutrient budgets are used to support regulations aimed at reducing phosphorus leaving agricultural lands. Nutrient budgets based on "As Excreted Values" are not reliable in grazing situations where animals can select a diet composed of varied ingredients and quality. Traditional nutrient budgets for livestock rely on "As Excreted Values" to estimate the amount of phosphorus in manure. These values have often been developed using data gathered from feeding operations. Values developed from feeding operations do not accurately account for the varied dietary components selected by grazing animals. Consequently, the results from the nutrient budget do not accurately represent the amount of phosphorus removed or retained on the landscape. A sampling program was conducted to estimate the amount of phosphorus excreted by grazing animals. Fecal samples from three herds of commercial beef cattle were sampled periodically in 2007 and 2008. The amount of phosphorus excreted was estimated using the Near Infrared Spectroscopy (NIRS) procedure and NUTBAL Pro software developed by Dr. Jerry Stuth and his team at the Grazing Animal Nutrition Lab (GAN Lab) at Texas A&M University. The results of the project indicate that the actual amount of phosphorus deposited is significantly lower than estimates based on "As Excreted Values". In addition, the results indicate that actual deposition is highly variable depending upon growing conditions and growth stage of the forage plants. Therefore, "As Excreted Values" should not be used to develop nutrient budgets for grazing animals.

2009. 62nd Society for Range Management Annual Meeting. Paper No. 2030- 5.