Give Grazing Animals Some "Credit" in Farm Pasture Nutrient Management Plan

Rhonda Gildersleeve, UW-Lancaster Ag Research Station

Deposition of dung and urine back on pastures by grazing animals is part of nature's nutrient recycling plan for nitrogen (N), phosphorus (P), and potassium (K), as well as other nutrients. As part of farm nutrient management planning, include an estimation of the amount of manure nutrients returned by grazing animals along with any mechanically applied manure. This provides a more accurate estimate of manure nutrient credits when determining if additional nutrients are needed according to soil test recommendations and aids the decision process in fertilizer selection to best meet pasture nutrient needs.

It is a fairly simple process to estimate available nutrient credits for pastures if we have the following information:

- Animal type/weight
- Number of animals
- Days on pasture
- Percent of each day spend grazing
- Size of pasture unit in acres

When this information is combined with book values for daily manure production by animal type, tons/acre of manure applied directly to the pasture by livestock can be estimated. Book values for manure production estimates by weight and type of animal are found in the Midwest Plan Service Technical Bulletin 18, *Livestock Waste Facilities Handboo*k (www-mwps.sws.iastate.edu/catalog/manure-management/livestock-waste-facilities-handbook).

Next, available manure nutrient credits per ton can be calculated. Estimates of 40% of total N (with 30% used in year 1, and 10% used in year 2), and 80% of P and K (used in each year) from manure/urine deposited directly by grazing animals should be calculated as available for pasture nutrient credits.

Wisconsin's SnapPlus Nutrient Management Planning software program (http://snapplus.wisc.edu/) includes a section for entering data on grazing herds so total daily manure production can be calculated as well as a Grazing Application Rate Estimator that calculates manure/urine deposition on a paddock by paddock basis. If you prefer doing calculations by hand, the new UW Extension Bulletin A4034, *Soil Fertility Guidelines for Pastures in Wisconsin* (http://learningstore.uwex.edu/Assets/pdfs/A4034.pdf) has an easy to use form to estimate manure applied by grazing animals and an example calculation for nutrient crediting located on pages 5 – 7 of the publication, along with current nutrient guidelines for various categories of pastures and recommended practices for soil sampling.

Using these tools as part of your overall farm nutrient management plan should give you a better indication of the amount of nutrients being returned by grazing animals along with any mechanically applied manure used on pastures. Utilizing this process will provide a more accurate estimate of manure nutrient credits when determining whether additional nutrients are needed in order to meet your pasture's nutrient needs.