



GRAZING MANAGEMENT (CSP Enhancements)

November 2005

Information Sheet

WV-CSP- INFO

Clients Name:

Worksheet 6 – Use NUTBAL to Balance Forage with Livestock Demand.

Payment = \$3.00/Ac./year for collecting at least 6 fecal samples/yr; use the Nutritional Balance Analyzer (NUTBAL) computerized assessment tool to determine forage quality and quantity; and use results to modify feeding operations. Samples will be collected according to attached information sheet. Client will request technical assistance from NRCS Grazing Specialist to develop NUTBAL assessment and changes to feeding operations

The technical reference is available at

<ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/nutbal-tech-support.pdf>

Location	Livestock			Date Sampled	Nutrient Balance Met	Nutrient Balance Not Met
	Type	Weight	Body Condition Score			
Hall Pasture	Example	550	5.5	5/11/2005		X

Use of NUTBAL results to modify feeding operations Certification

I certify that I have collected and submitted at lease six fecal samples and have modified my animal feeding operation based on results of the NUTBAL assessment.

Clients Signature: _____ Date: _____

Attach copies of Grazing Animal Nutrition lab results and NUTBAL standard balance reports.

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5. Place in the Styrofoam box the cooled fecal sample, and ice substitute. In a separate plastic bag, place the completed sample sheet and any photos of land/cattle that may be useful if you desire a NUTBAL advisory report.
6. Seal the box with packing tape around and across the lid. Use any mail service that guarantees two-day delivery, i.e. 2-day Priority Mail through the Postal Service.
7. Receive results approximately 4 days after collecting sample via fax or e-mail.

Use the Nutritional Balance Analyzer (NUTBAL) Computerized Assessment Tool to Determine Forage Quality and Quantity

**The GAN Lab's NIRS/NUTBAL PRO SYSTEM
A Farmer's Tool for Monitoring Livestock Nutrition and Forage Quality**

In recent years, the analysis of fecal samples, a.k.a. manure, has proven to be a useful and effective diagnostic and management tool. A fecal sample collected out in the pasture can be sent to the Grazingland Animal Nutrition Lab (GAN). The GAN Lab analyzes the fecal sample using near infrared reflectance spectroscopy (NIRS) to determine the quality of the forage the animals were consuming 36 hours prior to defecating. **The USDA-Natural Resources Conservation Service in West Virginia is providing on-farm assistance to help you sample, evaluate the results, determine your forage quality and offer suggestions to improve your grazing system.**

Nutrient Balance Met

WHAT CAN A FECAL SAMPLE TELL YOU

The GAN Lab offers an analysis package that includes percent crude protein (CP) and percent digestible organic matter (DOM). Digestible organic matter is a measure of energy as is TDN or total digestible nutrients. Fecal samples are also analyzed for percent fecal nitrogen (FN) and percent fecal phosphorus (FP). FN and FP refers to the proportion of these minerals in the manure deposited on the ground. All four analyses are predicted for a cost of \$25 per fecal sample. One composite fecal sample can represent an entire herd.

WHAT IS NUTBAL PRO & WHAT CAN NUTBAL PRO TELL YOU

The second component of the system, NUTBAL Pro, is a decision support software developed at Texas A&M University by Dr. Jerry Stuth and the GAN Lab team. An update of the DOS-based version, NUTBAL Pro employs many new tools and the latest scientific knowledge on grazing animal nutrition. The software asks you for information regarding animal attributes, environmental conditions pasture conditions, feeding program, and metabolic modifiers as well as incorporates GAN Lab results (CP, DOM, FN and FP) as forage quality values. The Nutritional Balance Analyzer software determines: 1) if animals are on a positive or negative nutritional plane, 2) daily weight gain/loss, and 3) the most cost effective feeding option if supplementation is needed from the information you supply.

NUTBAL Pro produces two reports. The Standard NUTBAL Report describes nutritional intake, requirements, and balance for the following: protein, net energy for maintenance and net energy for gain. This report also estimates average daily gain, identifies the limiting nutrient (energy or protein), and reports dry matter intake, milk production, and fecal output. The Mediation Report selects the most cost efficient feed alternative. The user identifies one or more protein or energy supplements available to use. The program evaluates the feeds' value with regards to the animal's nutrient deficiency or desired gain. The Mediation report then identifies the cost efficient option, amount to be fed, and cost per day. The report also calculates the price per ton required for other selected supplements to be competitive with the best choice. NUTBAL Pro is available on CD-Rom only. The CD also includes electronic copies of training materials, sampling instructions and other helpful information.

WHAT IS THE NIRS/NUTBAL PRO SYSTEM

The combined NIRS/NUTBAL Pro System is a diagnostic and management tool that enables you to monitor the changes in forage quality over time, estimate animal performance and supplement more efficiently. A regular monitoring program such as a monthly fecal sampling schedule provides a wealth of information that brings a new level of confidence to your decision making process.

HOW CAN I USE THIS INFORMATION

The NIRS/NUTBAL Pro System generates a vast amount of data that may be applied numerous ways, especially when you use the system as a nutritional monitoring program sampling on a regular basis. The following are just a few brief highlights. A downward trend in nutritional status may indicate it is time to move the animals to new pasture. The estimated gain or loss per day may help you decide when to start feeding or moving stockers. Dry matter intake can be used to determine if forage will be sufficient for grazing period. Fecal phosphorous and nitrogen output reported in lbs/day provides actual data with which to manage nutrient-loading concerns.

CONTACT NRCS or THE GAN LAB

First, contact NRCS local office to determine availability of the sampling starter kit and availability of the Grassland Specialist to input gathered information into the software package.

You may also want to contact the GAN Lab or visit the web site. The GAN Lab will mail you a starter kit that includes a Styrofoam box with ice substitute, sample sheets, instructions for collecting the fecal sample and completing the sample sheet, and additional articles that you may find informative. Additional kits or boxes are available upon request.

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SUPPLIES NEEDED

The GAN Lab supplies Styrofoam boxes, ice substitute, and original sample sheet that can be copied for future samples. You will need to have on hand plastic bags that seal, mailing labels, tape, permanent marker or labels, and disposable spoons or gloves for picking up the sample. Please do not use fold over baggies. As you can imagine, they leak. **COLLECTING A FECAL SAMPLE**

Now that you have the GAN Lab starter kit and have read the instructions, you are ready to begin.

1. Freeze the ice pack overnight and label Styrofoam lid with your address and the GAN Lab address.
2. Gather together zip-loc type sandwich or freezer bags, tape, plastic gloves and/or disposable spoons, permanent marker, pen, sample form and Styrofoam box.
3. One fecal sample can represent a herd or pasture. Collect a "heaping tablespoon" from 5 to 10 fresh fecal piles to get a composite sample. Collect at least a half cup, but no more than a pint is needed. Deposit manure in bag. Sample should be free of dirt, insects, and grass. The Styrofoam box should hold 4 to 6 samples and the ice pack.
4. Allow sample to cool to increase the life of the ice substitute and label each plastic bag with a sample or pasture ID, date collected and any other pertinent information using a permanent marker or stick-on label. The label on the bag should match the ID on the sample sheet. Remember that in route the contents of the Styrofoam box may take on moisture. Please keep that in mind when labeling your sample bags. Samples can be frozen and mailed later if more convenient.