

# Grazing Animal Nutrition Lab

## Grazing Behavior and Animal Nutrition



### GAN Lab:

The Grazing Animal Nutrition Lab (GAN Lab) began as a research based operation to study animal nutrition and monitor grazing behavior. In 1994, a nutritional balance profile (NUTBAL Pro) software was created and offered to the public. NUTBAL Pro reports nutritional intake requirements and balance as well as offer the most efficient feed alternatives, including the cost of that alternative per day. The focus of the lab is using near infrared reflectance spectroscopy (NIRS) and NUTBAL Pro to analyze animal fecal samples to determine the nutritional quality of an animals intake and to utilize the NIRS capabilities in several more fields including soil analysis and wool and fiber grading.

### NUTBAL Software:

Nutritional Balance Analyzer (NUTBAL) software is free to the public. This tool uses the animal description (the kind, class, and breed), body condition, forage conditions, supplemental feed information, environmental conditions, performance targets and NIRS results to produce a nutritional balance report for protein and net energy and a report for least-cost feeding solutions.

### NIRS Technology:

Near Infrared Reflectance Spectroscopy (NIRS), scans livestock manure and evaluates forage quality. The results show dietary crude protein, digestible organic matter, and other nutritional factors in the livestock's diet.



### How can the NIRS/NUTBAL System be useful to you?

- Drought Management— The NIRS/NUTBAL Pro System is a diagnostic tool that keep you in tune with the nutritional status of your livestock in order to make more informed decisions for better management of drought, feeds, reproduction, and grazing.
- Reproductive Management—Monitoring herd nutrition allows you to better manage for appropriate body condition, helping to facilitate improved conception rates, milk production, and herd productivity.
- Economical Feed Management—The NIRS/NUTBAL system helps you identify when, what, and how much feed to maximize the cost effectiveness of winter feeding programs, drought supplementation, and production goals.
- Grazing Management—Track your pasture's forage quality to fine tune rotational grazing programs and identify deficiencies in current systems.

### Impacts:

The lab profiles the nutrition of cattle, goats, sheep, equine, bison, and wildlife such as elk and deer for a variety of users. Laboratories have been established in East Africa, South America, Mongolia, and Afghanistan through World Bank and USAID grants. These diagnostic tools offer livestock producers, consultants, wildlife managers, and researchers a noninvasive means of monitoring grazing animals, as well as rangelands and grasslands. The USDA-Natural Resources Conservation Service (NRCS) has promoted the technology for their Conservation Stewardship Program. As a result, more than 1,500 livestock producers use the GANLAB for livestock nutrition management.