Interpreting Feed Analysis

Why should I analyze my feed?
Obviously, you should analyze feeds to know what you are feeding. Feed analysis allows you to understand both the adequacy and deficiencies in your feed, to allow you to meet the nutrient requirements that allow the animal to perform (grow, lactate, run, etc.). Often, you achieve this by combining different feeds that meet the animal’s specific needs. These needs have been determined through many years of research and are published in nutrient-requirement tables.

Why not use book values?
Book values are averages for various feeds. These give you an idea of the nutrient content of the feed. In no way should book values replace actual feed analysis values because feeds vary especially forages.

For example, alfalfa hay book values test 19.2 percent CP, 41.6 percent NDF, and 0.54 Mcal NEI/lb. At UNH, alfalfa hay tested 21.9 percent CP, 39.1 percent NDF and 0.62 Mcal NEI/lb. If we were to use book values we would waste money by overfeeding protein and energy.

What do the feed analysis results mean?
DM (dry matter) Percentage of feed that isn’t water. Most nutrient requirements are calculated on a DM basis.

DMI (dry matter intake) An animal’s daily consumption of DM.

CP (crude protein) Includes true protein and nonprotein nitrogen. It is a calculated value of %N x 6.25.

Available CP Adjusts for the CP that is bound and unavailable to the animal.

NDF (neutral detergent fiber) The combined hemicellulose, cellulose and lignin (structural carbohydrate) content of a feed. The higher the value, the less-digestible the feed.

ADF (acid detergent fiber) Cellulose and lignin. The higher the value, the lower the digestibility and the less energy available to the animal.

Ash Minerals present in the feed. Value tells nothing about the kinds of minerals present in the feed.

EE (ether extract) A measure of fat present in a feed.

RFV Relative feed value, a measure of the overall nutrient value of the forage.

RFV= (%Digestible DM x %DMI)/1.29

Digestible DM= 88.9 – (ADF % x 0.779)

%DMI = 120/NDF%

An average grass hay containing 53 percent NDF and 41 percent ADF will provide for an RFV = 100. Above 100 is high-quality forage, < 100 is poor-quality forage.

by Pete Erickson, UNH Cooperative Extension Dairy Specialist
August 2010

Visit our website: extension.unh.edu