

Interpreting Feed Analysis

Pete Erickson, UNH Professor of Dairy Management and Extension Dairy Specialist

Why should I analyze my feed?

We need to analyze feeds to know what we are feeding. Feed analysis allows you to know what your feed is deficient in or adequate in to allow you to meet the nutrient requirements which allows the animal to perform (grow, lactate, run, etc.). Often this is through 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. give you an idea of what the feed contains in regards to nutrients. 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 % CP, 41.6 % NDF, and 0.54 Mcal NE₁/lb. At UNH, alfalfa hay tested 21.9 % CP, 39.1 % NDF, and 0.62 Mcal NE₁/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) - the percentage of feed that is not water. Most nutrient requirements are on a DM basis.

CP (crude protein) - includes true protein and nonprotein nitrogen. It is a calculated value of % N X 6.25.

Available CP - considers the CP that is bound and unavailable to the animal.

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

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

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

EE (ether extract) - this is a measure of fat present in a feed.

RFV (relative feed value) - a measure of the overall nutrient value of the forage.

$$\text{RFV} = (\% \text{ Digestible DM} \times \% \text{ DMI}) / 1.29$$

$$\text{Digestible DM} = 88.9 - (\text{ADF} \% \times 0.779)$$

$$\% \text{ DMI} = 120 / \text{NDF} \%$$

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



About the Author

Dr. Pete Erickson is Professor of Dairy Management and Extension Dairy Specialist at the University of New Hampshire. His primary research area is in the area of optimal colostrum production and management through feeding of the prepartum cow and the newborn calf. He also works in the area of calf and heifer nutrition along with the feeding of alternative feedstuffs.

Contact Information

Dr. Peter Erickson | 603-862-1909 | Peter.Erickson@unh.edu

UNH Extension Infoline

Ask Questions, Explore Opportunities, Get Ideas. Master Gardener volunteers and home horticulture staff are ready and available to help with topics including gardening, lawns, pests, fruits and vegetables, food safety, and much more. For research-based information you can trust, Ask UNH Extension.

answers@unh.edu

facebook.com/AskUNHExtension

1-877-EXT-GROW (1-877-398-4769)

Monday - Friday | 9:00 AM - 2:00 PM

extension.unh.edu

The University of New Hampshire Cooperative Extension is an equal opportunity educator and employer. University of New Hampshire, U.S. Department of Agriculture and N.H. counties cooperating.

