Adams Advanced Nutrition, Inc.

Doug Adams, PAS
PromiseLand Feed & Seed
9187 Myersville Road
Myersville, Maryland 21773
240-818-8401 or 301-293-8444
E-mail: advadams@verizon.net
WEB: www.rennut.com

Evaluating Feed Efficiency for Improved Results!

Feed is the single largest expense in milk production. Many livestock industries use feed efficiency as a benchmark for performance. Evaluating feed efficiency is a valuable tool for dairy producers. Differences in production systems prevent a straightforward comparison of feed efficiencies. The following information can help you to measure and use these values, as improved feed efficiency is targeted.

MEASURING FEED EFFICIENCY ~

Feed efficiency (FE) can be calculated most simply as pounds of milk produced per pound of dry matter consumed. The problem with this simple approach is that the fat content of the milk is not considered. Since fat contains more energy than other components of milk, ignoring milk fat can skew FE calculations. The best way to account for fat content is to calculate FE as pounds of 3.5% fat-corrected milk produced per pound of dry matter consumed.

Factors Affecting Feed Efficiency ~

Feed efficiency can vary from 1.0 to nearly 2.0 across stages of lactation or farms. This means that a number of factors other than dry matter intake and fat-corrected milk production must be considered when using FE as a benchmark. These other factors include the following:

- Milk production - Higher production almost always facilitates higher FE. This is because maintenance requirements are diluted more with the higher intake associated with higher milk production.
- Body weight - Body weight affects maintenance requirements. At equal milk production, cows with lower body weights will have higher FE.
- Body weight/condition change - When nutrients are directed towards weight gain, rather than milk production, FE is reduced. This is often a desirable situation, for example in cows replenishing body stores lost during early lactation. Conversely, cows may have very high FE when they are losing weight. In this situation, a high FE might be a cause for concern, not celebration! In general, differences in FE may occur due to the body weight/condition changes that occur over the course of lactation.
- Genetics - Genetics ultimately determines how nutrients are allocated for maintenance, milk production, and other body functions. Genetic lines that are highly productive will have a higher FE than less productive lines.
- Changes in maintenance requirement - Any change in the maintenance requirement will affect feed efficiency. Three common factors are: cold or heat stress, walking or exercise, and extended standing. Increases in walking distances or standing times will lower FE. Extremes of heat or cold will also decrease FE.
- Feed digestibility - Higher feed digestibility usually increases milk production, thereby increasing FE. Common methods to increase feed digestibility include proper feed processing and improving forage quality and/or NDF digestibility (see October issue of newsletter and ask me for more information on selecting forages you can grow that can improve your overall ration program).
- Growth and/or reproduction - Young cows will generally have lower FE because substantial amounts of ingested nutrients will be used for growth. Pregnant cows will have a reduced FE in late gestation because of fetal growth; this would most likely be a factor in herds using shortened dry periods.
- Nutrient imbalance - Overfeeding or underfeeding nutrients may adversely affect FE. Research has shown that overfeeding protein decreases both FE and efficiency of nitrogen use. I can help you to effectively balance your ration program and work with you toward improving the FE of your cows.

Economics of Feed Efficiency ~

Based on this list of factors that may impact FE, it can be misleading when feed efficiency is used as the sole basis for evaluating the economic efficiency of either your cows or the whole herd. Feed efficiency does not equal economic efficiency. At the same time the FE for cows producing more milk will probably show a higher income over feed cost. One important note: do not purposefully decrease feed intake or nutrient balance in a herd to improve the FE. This will usually decrease milk production and profitability.

Feed Efficiency Guidelines ~

1. Check intake/milk production for accuracy before worrying about FE! Feed refusals must be accurately measured in order to determine meaningful calculations.
2. Target for an entire herd/mid-lactation cows (180-220 DIM average for herd/group) -1.4-1.6 lbs FCM/lb DM intake is normal.
3. Early lactation (<30 DIM)
    a. 1.5-1.8 lbs FCM/lb DM intake is good
    b. FE >1.8 may indicate excessive weight loss or ketosis problems
    c. FE <1.4 may indicate milk production problems or erroneous feed intakes
4. Late lactation (>300 DIM)
    a. FE follows lactation curve downwards after milk production peaks
    b. 1.1-1.4 FE is normal

(edited from an article by Jim Linn & Jim Salfer, U of MN)

RENAISSANCE NUTRITION

When You Want Quality & Results

Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows? Looking for research-tested corn hybrids for the coming year? Call me! My goal is to help you. That's Renaissance's commitment!

VOLUME 5 – Number 12 – December 2006

THE TEAM FOR RESULTS

MERRY CHRISTMAS & HAPPY NEW YEAR!

Merry Christmas!

Wishing you and your family the best this Holiday Season and throughout the coming New Year!

Thank you for your business and support this past year. It is my pleasure to work with you... part of your team!

Doug

WINTER IS HERE! WHAT ABOUT THE YOUNG STOCK? Cold weather can play havoc on calves and heifers! Careful consideration needs to be given to all aspects of their care and management, including housing and ventilation, hygiene, and feeding a quality, energy-balanced milk replacer and starter feed – products that can help ensure they receive adequate energy and nutrients to meet the needs of growth, development and bodily warmth. This is important for all your calves and heifers, but is especially critical for newborn calves, which lack body fat and have a relatively high energy requirement in relation to their body weight. Calves raised in hutches also show a greater need for higher energy diets (in winter) than those raised in a conventional barn, provided the barn has adequate ventilation and is kept clean and relatively free of moisture. Keep you calves warm this winter and appreciate the difference in their growth and development. After all, they are your future lactating herd!

A POINT TO PONDER... Once again "'tis the Season" and time for "Peace on earth and good will toward men." If we take time to look around us during this Christmas season, we probably don't need to look very far to find people who are lonely, hurting or in need of food, clothing, care and love – those who are less fortunate than ourselves. Take time to practice the art of giving this season ~ "for it is in giving that we receive," says the Prayer of St. Francis of Assisi. We soon find out that when we give unselfishly, we are blessed abundantly. Merry Christmas!

RENAISSANCE NUTRITION

Adams Advanced Nutrition, Inc.

9187 Myersville Road
Myersville, Maryland 21773
www.rennut.com

December...

evaluating feed efficiency.
ensuring forage quality.
Merry Christmas and a Happy New Year!

Check it out.