HOARD'S DAIRYMAN

Here are 15 ways to improve feed efficiency

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A well-thought-out approach can improve your bottom line.

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Great forages and maintaining rumen health are just two ways to improve feed efficiency.

Dairy enterprise efficiency is vital. We all know that. “Feed efficiency” is often calculated as the pounds of 3.5% fat-corrected milk produced per pound of dry matter consumed. This calculation helps us understand how much of the cow’s feed is converted into milk.

However, there are a lot of things it does not tell us. You can feed an expensive diet and get a good calculated feed efficiency number but not carry out truly efficient dairy cow feeding. This article includes 15 ways to improve this metric.

1. Get fresh cows off to a great start. Many dairies successfully control clinical transition cow issues but do not fully realize the cost of subclinical milk fever in their herd. With subclinical milk fever, cows eat less, milk less, and are more susceptible to ketosis, retained placenta, displaced abomasums, and infections.

Take advantage of all nutritional strategies that will improve calcium status in your cows. Precalving dry matter intake increases with improved transition cow care and comfort. This is linked to less subclinical ketosis and metritis.

Finally, it may be even more important to provide high-quality metabolizable protein to your prefresh cows than to your high-producing cows. The prefresh diet should provide 1,300 grams of metabolizable protein (MP), 35 to 40 grams metabolizable methionine, and 85 to 90 grams of metabolizable lysine.

2. Maximize forage fiber digestibility. Improve forage management and crop genetics to make highly digestible forages. Use highly digestible forages to help reduce ration grain levels, improve rumen health, and reduce ration costs. Michigan State research showed that increasing fiber (NDF) digestibility of ration forage by one percentage point boosted dry matter intake by 0.37 pound and pushed up 4% fat-corrected milk production by 0.55 pound per day.

3. Maintain great rumen health 24 hours a day, seven days a week. Low rumen pH (high acidity) can be occurring for a few hours of the day, even in well-managed, high-producing herds with good milk components. Reducing the time in which rumen pH is below 5.8 can improve milk production. Typically, this involves improvements in feeding management, cow comfort, controlling starch fermentation, and providing adequate chewable fiber. With low rumen pH, intake declines and becomes variable, fiber digestibility is reduced, and rumen microbial protein production is compromised.

4. Achieve no visible grain in manure. Grains should be processed and/or fermented for optimum digestibility. More than 70% of corn silage kernels should be smaller than 4.75 millimeters (mm). Ferment corn silage for at least four months before feeding. Dry ground corn should be under 750 microns, meaning that 80% must pass through a kitchen flour sifter. Roll high-moisture corn down to 2 mm to 3 mm prior to feeding if it is 28% to 32% moisture, but grind it through a hammer mill to a smaller particle size (under 1,000 microns) if it has less than 25% moisture. Provide adequate physically effective fiber (peNDF) as well as undigestible fiber (uNDF) and control TMR sorting for good rumen mat formation to slow grain passage through the cow’s rumen and promote rumination.

5. Maximize rumen microbial protein. Rumen microbial protein synthesis can vary from 3.5 to 5.5 pounds per cow per day. For the best microbial growth, the availability of carbohydrate and protein to the microbes should be matched using blends of rapidly and slowly degradable feeds. If too much protein is supplied without an available source of carbohydrates, the microbes will use the protein as a source of energy and waste nitrogen in the protein.

6. Provide needed amino acids to cows without excess. Balancing rations for amino acids helps to reduce protein wastage and raise milk and milk protein yield. Many times, rations appear to provide sufficient rumen undegradable protein (RUP), but if one or two amino acids needed are not provided, production will suffer and other amino acids will be wasted.

7. Accomplish great reproduction. Focus on getting cows pregnant to maintain an average days in milk (DIM) of 150 to 170. It is estimated that for every 10 days less DIM, milk flow will improve by 1.5 pounds per cow per day.

8. Use ideal group and feed strategies. Early lactation cows will respond profitably to a higher quality diet balanced for amino acids, with higher levels of fat, and with proven feed additives. Late-lactation cows can easily maintain their milk production while controlling body condition on a more basic diet. On top-notch dairies, I most often see four milking groups: fresh, high mature, first-lactation, and low mature.

   It also helps to purchase one grain supplement for high- and first-lactation cows and a different supplement for low-production cows. Ideally, fresh cows either have their own grain supplement or receive a second, small inclusion supplement containing fresh cow additives.

9. Provide adequate but not excessive minerals and vitamins. For health and productivity, the dairy cow’s mineral and vitamin needs must be met but not grossly exceeded. Major deviations from the National Research Council (NRC, 2001) recommendations may compromise cow health and farm profitability.

10. Provide consistent ingredients. Feed costs are generally higher when variability of farm forages and feed ingredients are high. This is because rations must be balanced for higher nutrient concentrations (overformulated) for insurance against nutrient deficiency in the event that unrecognized nutrient changes occur.

11. Use the right feed additives. Feed additives need to be scrutinized to determine if they are generating a return on investment. But, you cannot afford to miss out on a feed additive that will improve profitability. Don’t rely on testimonials; instead, ask for and evaluate controlled research on products before purchasing.

12. Take advantage of by-products and bulk. Save money by buying by-product feeds and grains as commodities while working to control quality and nutrient variation.

13. Grow great heifers. According to Cornell scientists, heifers should be at 82% to 85% of mature size at a first-calving age of 22 to 23 months. Excellent dairies get newborn calves off to a great start with exceptional colostrum management. They see gains of over 2 pounds per calf per day at 2 weeks of age and double calf birth

weight by 8 weeks. They optimize early rumen development, promote starter intake, and maintain growth through the weaning period. They also provide quality amino acid nutrition from birth to breeding.

14. Minimize silage and grain losses. Reduce silage storage losses by reducing hay crop respiration and mechanical losses, practicing best silage management (rapid filling, packing, sealing, and minimal air infiltration at silage face), using oxygen-barrier film, and treating with proven silage inoculants. Provide proper storage facilities for by-product feeds and grains to reduce waste.

15. Have low TMR refusals. Good dairy feed managers aim for 2% to 3% refusals. The key to doing this right is consistency. The TMR needs to be mixed and delivered in a consistent manner every day. Forage dry matter analysis must be done routinely. Feed cows at the same time to avoid bare bunks and know how many cows are in each pen every day.