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Feeding Strategies During Challenging Times

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Difficult economics in the dairy industry now and likely for much of 2018 have herd owners and their advisors working to find opportunities to increase margins and/or cut costs. Using averages from 36 New York farms that completed both the 2016 and 2017 Cornell Dairy Farm Business Summary (Karszes et al., [February 2018 PRO-DAIRY e-Leader](#)), purchased grain and concentrate cost averaged \$5.81 per cwt of milk (31% of total operating costs) and total feed and crop expenses averaged \$7.34 per cwt of milk (39% of total operating costs). Given the large contribution of feed and crop expenses to total operating costs, it is logical to carefully evaluate these aspects of management. In this paper we outline five key focus areas to ensure that your feeding program is all that it can be.

1) Know and track Income Over Feed Cost (IOFC) and Income Over Purchased Feed Cost (IOPurFC)

Income over feed cost (milk revenue minus feed cost) is more correlated with overall farm profitability than any other single metric and can be refined further to look specifically at Income Over Purchased Feed Cost. In analyses of feeding programs conducted as part of PRO-DAIRY discussion groups, income over total feed cost varied as much as \$3.00 per cow per day, even across well-managed herds.

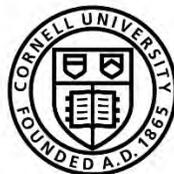
In our last analysis, herds with higher IOFC had:

- Higher fat and protein yield per cow (generally over 6.0 lbs/day of fat and protein shipped)
- Higher feed efficiency (over 1.65 lbs of ECM² per lb of DMI) across the lactating cows
- Higher feed cost per cow per day (cows were making more milk and so had higher DMI)
- Slightly higher cost per lb of TMR dry matter -- \$0.137 vs \$0.132 per lb
- Optimized use of forages (0.9 to 1.0% of cow body weight as forage NDF intake)

Income over total and purchased feed cost as well as feed efficiency can be calculated and tracked using spreadsheets or calculated using the [Dairy Profit Monitor](#) online program developed by PRO-DAIRY.

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² Energy-corrected milk = (0.327 × lb of milk) + (12.95 × lb of fat) + (7.65 × lb of true protein)



The Dairy Profit Monitor online program allows for a farm to track these and other metrics related to production and efficiency and compare itself with other farms in the program.

2) Make sure you are optimizing use of homegrown forages and feeds

Herds that focus on and achieve high forage quality can be rewarded by increasing use of high quality forage in the ration. One time-tested metric is to calculate forage NDF intake as a percentage of body weight for lactating cows. Herds optimizing forage use often are able to feed 0.9 to 1.0% of body weight as NDF from forage sources. Newer forage analytical techniques have enabled us to have estimates of undigested NDF at 240 hours of in vitro digestion (uNDF₂₄₀), which represents maximum digestibility and correlates with intake potential. Research conducted at Miner Institute suggests that cows will consume 0.30 to 0.35% of their body weight as uNDF₂₄₀. Data from the [2017 Cornell and Vermont Corn Silage Hybrid Trials](#) Lawrence et al. suggest that 2017 corn silage fiber digestibilities are generally lower than 2016 corn silage – many herds that have transitioned onto 2017 corn silage lost anywhere from 3 to 7 lbs of milk per cow per day. In this case, watch the marketplace for nonforage fiber sources (e.g., soyhulls, corn gluten feed, citrus pulp) that generally have high fiber digestibility and can help to compensate for the lower NDF digestibility in 2017 corn silage. In addition to optimizing use of forages based upon their analyzed nutrient composition, farms that have the ability to feed more than one silo of the same type of forage (i.e., multiple haylages or multiple corn silages) should make sure that they are feeding the right forage to the right animals. The highest quality, highest digestibility forages should go to the transition and early lactation cows. Typically, nutrient requirements of heifers and far off dry cows are relatively low, so lower energy, lower digestibility forages can be targeted to those groups.

3) Fine-tune your feeding management

Losses due to poor bunk and feeding management can be subtle but meaningful. Are you taking at least 6 inches (preferably 12 inches) of silage off of the face of bunk silos every day and ensuring that bunk faces are tight and leftover feed kept to a minimum? Have mixer wagons and other equipment used in feeding (e.g., tub grinders) been maintained so that they deliver consistent performance? Is feeding accuracy being monitored and shrink of ingredients being tracked? Is fresh feed available for cows upon return from the parlor and is it being pushed up regularly (i.e., every 2 to 3 hours). We recommend targeting 5% refusal rates for close-up cows (close-up refusal can be re-fed to far-off cows) and fresh cows, and targeting 2 to 3% refusal rates for high cow groups (refusal from fresh and high groups can be re-fed to late lactation cows).

4) Strategically review rations with your nutritionist

Now is a good time to review rations and ration strategy with your nutritionist and make strategic decisions about where to try to save cost without compromising herd performance. In addition to making sure that you are optimizing use of homegrown forages and feeds (see above), there may be opportunities to decrease amounts of rumen-degradable protein sources (e.g., canola meal, soybean meal) in the diet. Furthermore, laboratory assays are now commercially available that allow for feed suppliers to evaluate protein digestibility and undigestibility of protein ingredients. Overall, proteins based upon soy or canola look to have good overall digestibility and little variation among sources; however, distillers grains and animal proteins (e.g., blood meal) can vary greatly in their digestibility – some are excellent and some are poor.

We are hearing that some financial consultants are advising farms to remove all additives and higher value/higher cost nutrients from rations in order to save cost. Although we recognize the need to make sure that there is return on the feed investment, we think that these across-the-board types of sweeping recommendations are poor and likely stand more chance of hurting cash flow rather than helping cash flow. Our recommended approach is to review rations and prioritize maintaining ration ingredients and feed additives that directly affect daily cash flow/income over feed cost by contributing to component yield/feed efficiency or are fed during very focused periods of the lactation cycle (i.e., close-up and fresh cows) with research-based evidence that they contribute to improved productivity and health. The long-term implications on production, health, and reproduction for not meeting the needs of the transition cow are large. For more discussion on these decisions and other management decisions, see the [Making Decisions about New Technologies on the Dairy](#) paper that was presented at the 2017 Cornell Nutrition Conference.

Finally, we suggest that calf nutrition should not be a place where farms seek to cut feeding rates or quality of milk replacer. Such apparent savings can be easily erased (and then some) by increased drug costs for treatment and calf morbidity/mortality with long-term impacts.

5) Carefully review cow and heifer inventories and needs

Are the right cows being milked? How many heifers do you need? This topic is covered in part in another recent PRO-DAIRY paper [Ten Key Herd Management Opportunities on Dairy Farms During Low Margin Times](#). Overstocking of cows generally contributes to lower feed efficiency through negative effects on milk components and poorer rumen efficiency as a result of more aggressive feeding behavior and altered time budgets. Are you compromising performance of the whole by continuing to milk cows that are not covering their feed and variable costs? Many farms have improved their reproductive performance significantly over the past few years, such that we have seen overall heifer numbers grow as a proportion of the lactating herd. Feed costs are a major portion of the cost of rearing heifers – are the goals of the farm such that every heifer needs to be raised? Should you give up more quickly on heifers (or cows) that are not getting pregnant and save that feed cost?

There are a number of excellent [business management resources](#) focused on the cost of replacement heifer programs and spreadsheets that allow evaluation of various aspects of the heifer enterprise that were developed by Jason Karzes and available at the PRO-DAIRY website.

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