

# Milk flow impacts dry periods

by Alvaro Garcia

**U**NDER an ideal scenario, dairy cows should produce milk for 305 days of the year, be dry the remaining 60, and produce one calf at the end of the dry period. However, with high feed prices, we need to rethink the dry-off strategy.

Although some cows are dried off 50 to 60 days prior to calving, what happens when a cow is not producing enough milk, feed prices are high, and is still 80 days away from calving?

## Paying the bills

While a cow is in production, the animal generates income to cover both its variable and fixed costs. As the cow's milk production diminishes, there is a point in time where it might only pay for feed and later maybe even just a portion of it. Milk prices and the difference between the cost of lactating and dry cow diets determine when there's a need to dry them off regardless of days to calving.

The figure shows overall feed efficiency falls the longer we keep cows that can be dried off in the lactating herd. This is the only compelling reason to dry the cow off based on feed efficiency, however, this should not be the only reason, if the barn is already overcrowded at a stocking capacity of 115% or more and/or there is a cow that can take its place in the herd. If you are at 100% capacity in the freestalls and the cow is still more than two months away from calving, you are better off keeping it in the lactating pen. The cow might not be that efficient, but at least it is paying for its feed.

The possibility of getting away with a certain degree of overcrowding, however, depends on how many first-lactation cows there are in the pen. The "younger" the pen, the less you can get away with overcrowding

without negative consequences on both production and reproduction. As a rule of thumb, avoid overcrowding if there are 30% or more first-lactation animals in the pen.

When looking at the figure, the slope of income over feed costs drops faster compared to that of daily feed costs, which reflects an unfavorable relationship between milk and feed prices. This difference is greatly accentuated at 65 pounds of milk or less, and producers need to take a more critical look at these cows.

## Limited flexibility

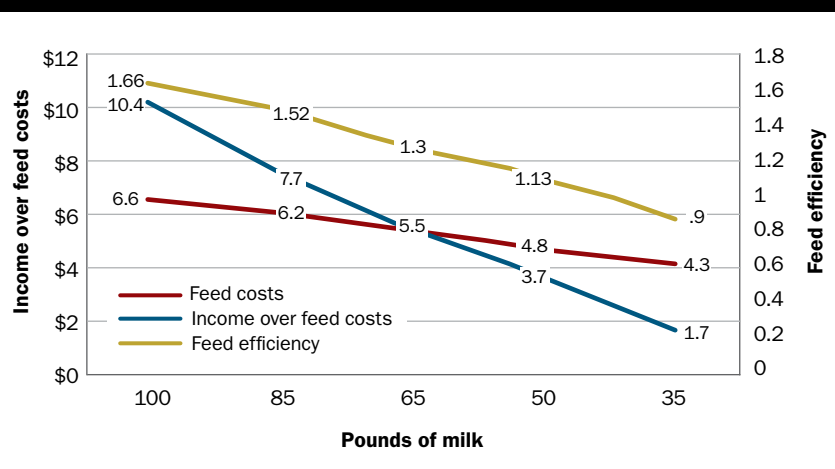
Granted, there is somewhat limited flexibility when it comes to determining the "ideal" length of the dry period. According to the USDA National Animal Health Monitoring System (NAHMS), most of the dairies (52%) in the U.S. use dry periods between 60 and 69 days, followed by 40 to 59 days (35%).

This entire picture gets more complicated because dry periods shorter than 30 days and longer than 70 days reduce lifetime productivity. The impact of dry periods of more than 80 days is even worse than those shorter than 30 days.

The key is to also factor in the price between the lactating cow and the dry cow diet. When feedstuffs are limited or costly, the cow to be dried off is eating expensive lactating cow feed and occupying a freestall or cubicle of another potential high-merit cow that could maybe peak at 100 pounds.

One could argue that the lactating cow's feedstuffs are already there (oftentimes they are not, particularly the concentrates), and one is better off leaving the cow in the milking pen a few more days or weeks. As it drops a little further in production, however, the cow will not be paying for its feed, and

**Relationship between feed costs, income over feed costs, and feed efficiency as production declines**



income over feed costs (on this cow) will enter negative figures. At this point, we also need to factor in the cost difference between the lactating and the dry cow ration.

## The optimum dry period

In the past, dry dairy cows were fed diets of low-energy content, at best supplemented with some concentrate as calving approached. It is an increasingly common practice to separate dry cows into "far-off" (first 30 days) and "close-up" (last 30 days). The feasibility of grouping cows is related with the facilities available on the farm, which is one of the reasons why in the U.S., twice as many large dairies compared to small dairies have close-up groups.

In summary, the decision on when to dry-off a cow is influenced not only by the days to calving but the Milk-Feed price ratio. Unfavorable input and output prices tend to favor earlier drying off with the cutoff happening right at 65 pounds of milk or thereafter. The reason behind this strategy is to try to improve feed efficiency of the overall

herd. Granted, the farm's liquidity depends on a hefty milk check. So, if there are still freestalls or cubicles available and we are not pushed by an impending calving date, we may be better off leaving the cow in the milking group a little longer.

Research has demonstrated that the minimum days dry to maximize production depends on parity. Always keep in mind that the decision is affected by parity with first-lactation animals benefiting from slightly longer dry periods. However, dry periods should not exceed 80 days in multiparous cows since it will negatively impact future lactations. With proper execution and tracking, each dry cow will have a successful return to the milking herd. 🐄

The author is a retired professor of dairy science from South Dakota State University. He is now a consultant with Dellait Dairy Nutrition & Management.