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NUTRITIONAL MANAGEMENT OF DRY COWS

Ralph Bruno, Ellen Jordan, Todd Bilby, and Kevin Lager
Extension Dairy Team
Department of Animal Science
Texas A&M AgriLife Extension Service
The Texas A&M University System

The dry period is as important to the life of a cow as any period during lactation. Proper management and nutrition while dry is crucial for obtaining maximum milk production in the following lactation. The transition from lactating to dry and dry to lactating is marked by significant physical and metabolic stresses. Cows experiencing excessive stress prior to calving are more susceptible to:

1. Metabolic (ketosis, milk fever, fatty liver, etc.) and digestive problems;
2. Decreased dry matter intake;
3. Reduced milk production;
4. Lower lactation peaks;
5. Reproductive failure;
6. Postpartum reproductive diseases; and
7. Involuntary culling.

The main goal of the dry period is to provide some resting time for the cow. During this period the mammary gland tissue regenerates and mineral body reserves are replenished before the next lactation begins. The dry period has two main phases with different nutritional requirements:

- **Far-off** period (from the day of dry off until three weeks before the expected calving date);
- **Close-up** period (last three weeks prior to the expected calving date).

During the far-off period the main focus is mammary gland involution. Feeding a low energy diet during this period promotes less milk synthesis by the mammary gland, consequently minimizing the risk of mastitis. In addition, formulate far-off diets to provide the required amount of mineral and vitamins, limiting energy and protein to avoid over conditioned cows which increases the odds of metabolic diseases after calving.

The goals in the close-up period consist of:

1. Adapting the rumen microflora and rumen papillae to the feedstuffs being fed to milking cows;
2. Maintaining normal calcium levels: and
3. Minimizing negative energy balance and immunosupression around calving.

Increased energy density during the close-up period is required to meet the needs of the rapidly growing fetus. This energy increase also helps to minimize any late gestation weight loss that the cow may experience in response to increased fetal growth.

Anionic salts are commonly used in the close-up diets to prevent milk fever (hypocalcemia). Use anionic salts to shift the dietary cation-anion difference towards a more negative charge which promotes the release of calcium from tissues. Keep in mind that anionic salts are unpalatable and may lead to decrease of DMI if not managed properly. Evaluate the success of anionic salts by evaluating urine pH once or twice per week. In Holstein cows, urine pH between 5.8 and 6.8 indicates effectiveness of the diet. In Jersey cows the optimum pH is between 5.5 and 6.5.

Keep the yearly incidence rate of these undesirable diseases in lower levels:

- Milk fever < 3%;
- Displaced abomasums < 5%;
- Retained placenta < 8%; and
- Ketosis < 3%.

Another important and simple tool that can be used to evaluate the dry period is monitoring body condition score (BCS) at dry off and calving day. Major changes in BCS during these periods are correlated with postpartum disorders and can be corrected with dry cow period management.

In summary, the dry period is both the end of one lactation and the beginning of the next. Careful attention to management and feeding for these groups of animals is crucial to achieving optimum animal performance with minimal health problems and increased productive and reproductive efficiency during the following lactation.