



Elevate prefresh intakes

A DRY cow's protein and energy needs rise during the last three weeks of gestation due to the growth of the calf and udder, as well as the synthesis of colostrum. During this period, widely referred to as close-up, dry matter intake drops by nearly 30 percent.

Intake plummets near calving

Most of this reduction, however, occurs during the last week of gestation, as reported by University of Wisconsin researchers. In their experiment, feed intake three weeks before calving was around 1.7 and 2 percent of body weight in heifers and cows, respectively. It dropped further to 1.3 and 1.4 percent the day before calving.

Intake reduction coupled with higher nutrient demands result in a negative energy balance that is more pronounced towards the end of gestation. The magnitude of the energy shortage depends on the cow's milk production potential and the adequacy of its feeding program. Even with energy-dense rations this deficit can continue for several weeks and has been associated with immune suppression, health disorders around calving and longer calving to first-service intervals.

Creates health hurdles

Research has suggested that cows with lower intakes are predisposed to suffer metabolic problems and infections right after calving. In a trial conducted at the University of British Columbia, cows diagnosed with an acute uterine infection had consumed less feed 12 to two days before calving than those not affected.

In a posterior experiment at the same university, the risk of uterine infection rose between 1.6 and 1.7 times for every 10 minutes less cows spent daily at the feedbunk during the last week of gestation. In addition, for every 2.2 pounds' reduction in intake, the risk of metritis tripled. The incidence of subclinical ketosis showed a similar pattern, with double the risk for every 2.2-pound drop in intake or every 10-minute reduction in time spent at the feedbunk.

At the moment, it is not clear if the precalving intake reduction is cause or consequence of postcalving metabolic and/or infectious problems. Regardless, the objective should be to encourage intake at the end of the gestation.

Strategies to boost intakes

1. Regrouping cows

Cows are social animals that form hierarchies with dominant and subordinate members. These social differences are mainly expressed at the feedbunk due to their drive to eat and fulfill the nutrient requirements for high milk production.

Results from a Canadian study showed 88 percent of all aggressive interactions occurred in the feeding area, 9 percent in the stalls and 3 percent at the swinging brush.

A review article by University of Nebraska researchers suggested that, when a cow is assigned to an already formed group, she must find her hierarchy within that pen soon to be able to maximize feed intake. Behavioral studies in lactating cows suggest social hierarchy is usually re-established two days after introducing new animals.

In recent work conducted in Canada, close-up cow intakes dropped by 9 percent the day they were assigned to a new group. These cows recovered their previous intake during the second and third day after the change. It was suggested to introduce several new cows to the group at the same time to reduce aggression after regrouping and to avoid making

stocking density should be 80 percent of available headlocks.

3. Resting area

The area where cows in confinement rest during precalving usually has either stalls or a bedded pack. When close-up cows are housed in facilities with stalls, it is necessary to move them to a maternity pen a few hours before calving. However, if during the close-up period they are housed on bedded packs, they can calve there provided they have plenty of clean and dry bedding.

The 2000 Midwest Plan Service publication, "Dairy Freestall Housing and Equipment," suggests using a minimum surface of 100 square feet of bedded pack per cow, aside from the feeding alley and/or other external areas.

Recommendations from the University of Wisconsin's School of Veterinary Medicine suggest stalls for precalving should be at least 50

Feedbunk space, not the number of stalls, is the limiting factor of the number of cows assigned to a pen.

changes during peaks of maximum activity at the feedbunk.

To reduce the stress generated during regrouping it is preferable to make these changes once a week rather than moving cows daily from one group to another. It is best to choose a particular day of the week to move cows into the close-up group approximately three weeks before their expected calving date.

2. Feedbunk space

According to the 2009 National Dairy FARM Program (Farmers Assuring Responsible Management), minimum bunk space for cows in different physiological states should be as follows: transition, 30 inches; lactation, 24 inches and close-up, 30 inches.

Close-ups require more bunk space than lactating cows because of the pregnant uterus distending the abdomen and the usually higher body condition of the cow, both of which makes them wider towards the end of the gestation period. When feedbunk space is amplified, it reduces competition between cows, particularly at feeding time. The animals that benefit the most are the subordinate ones, such as first-lactation cows or those recovering from calving during the transition period.

A University of Wisconsin researcher reported that milk production in heifers housed precalving with adult cows was reduced by 1.6 pounds for every 3 inches of feedbunk space below the recommended 30 inches. Headlock space used in dairy farms usually varies between 24 and 30 inches. When the width is less than 30 inches, however, it is advisable to reduce the number of cows in the pen. In facilities with 24-inch headlocks, the maximum

and 45 inches wide for Holsteins and Jerseys, respectively. According to the 2009 National Dairy FARM Program, there should be one stall available per cow to improve the time spent resting.

However, when the recommendation of 30 inches of feedbunk per animal is followed, bunk space becomes more limiting than stall numbers. This is particularly true in three-row facilities. The appropriate number of cows for a precalving facility should be calculated based on feedbunk requirements rather than the number of stalls available.

4. Provide clean and fresh drinking water

According to the Midwest Plan Service, dry cows drink 20 to 30 gallons of water daily. It is advisable to have one water trough for every 15 to 20 cows (two per pen at least) and not place them on alleys or areas without an exit.

Dry matter intake drops particularly during the last week of gestation, as the cow's nutrient needs are rising. This imbalance has been associated with immune suppression, problems at calving and a higher calving to first-service interval. To minimize this gap we need to optimize the conditions that allow for maximum intake.

Housing systems that keep close-up cows and heifers together lead to marked expressions of social dominance. Adequate strategies for introducing new cows to established groups are as critical as the need to offer adequate feedbunk space. Incorporating these rules during precalving reduces problems around calving time and elevates milk production during the entire lactation. 🐄

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