

BEEF SOLUTIONS

Managing cattle on self-feeders

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Most cattle are fed total mixed rations (TMR) or grain supplements daily to optimize performance and economics. However, delivering feed daily is not an option for producers with limited time and/or resources. Fortunately, self-feeders can be used to provide several days' worth of dry feed to cattle before needing to be refilled. This feeding method offers producers an option to constantly supply feed to cattle while reducing the time, labor and feeding equipment required with daily feed delivery.

Self-feeders can be described as low-management due to the decreased work requirements of not delivering feed daily — but they're certainly not no-management. For TMR feeding, producers determine both the amount of feed offered and the timing of the delivery, along with ration nutrient levels to achieve a specific gain. In the case of self-feeders, the decision of when and how much feed to consume is determined by the cattle, as they have access to the feed at all times, meaning that individual animal feed intakes can be variable. As such, self-fed diets should balance feeding the appropriate energy level necessary to achieve specific growth and performance targets while also striving to avoid digestive upsets.

When evaluating a self-fed supplement, producers should consider its energy content and the growth response it will provide. Offering high-energy supplements can over-condition growing calves, affecting sale price and increasing the risk of acidosis. Gradually stepping calves up on dietary energy intake is vital, as doing so gives the rumen microbes time to transition from a high-forage to a high-energy diet. This shift in energy also adapts the calf's physiological control of dry matter intake from rumen gut fill to a chemostatic feedback mechanism, as both work in combination across the range of low- to high-energy diets. Intakes of high-roughage diets are controlled solely by gut fill. As the energy content of the diet increases, control of intake shifts from the limits of rumen capacity to a feedback loop based on the diet's energy density. Satiety sensors will signal the animal to stop eating once they have reached an energy threshold. This is the targeted outcome when finishing cattle on self-feeders, where the goal is to maximize intake and feed efficiency while minimizing intake variation and the risk of digestive upsets.

Psychogenic factors

Another powerful influencer of intake, unrelated to energy content, are psychogenic factors. Contrary to gut fill and chemostatic mechanisms, psychogenic factors are derived from stimulatory and inhibitory variables related to feed and/or environment. Modulation of feed intake by psychogenic factors involves feed palatability, social interaction and learned behavior. With time, the animal adapts to its surroundings and the available feed sources. For example, when calves are first offered creep feed, intakes are low due to its unfamiliarity and the abundance of high-quality forage and milk. As the summer progresses, however, creep feed intake climbs due to a decline in the availability of milk and good forage. Creep feed soon becomes the highest-quality feed that the calf has access to. Timely weaning or management intervention may be necessary to moderate creep feed intake.

Feed palatability

Cattle will naturally select the most palatable and digestible plants available when grazing mixed grass pastures. The same applies when self-feeding. When offered a choice, cattle are drawn to feed that tastes the best; therefore, self-feeder intakes are influenced by the quality of the available forage resource. Palatability can be affected by both physical and chemical characteristics. The factors described below play key roles in how readily cattle consume feed and also provide options for better managing intake from self-feeders.

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Forage quality and dry matter content. Forage quality is the greatest unknown when supplementing growing calves, and it indirectly affects the intake of concentrates from a self-feeder. Intakes from self-feeders are usually lower when high-quality forage is available and will begin to rise as forage quality declines. Consequently, for producers feeding free-choice wet fermented forages, calves may tend to crave drier, less-acidic feeds, which will shift intake to the self-fed supplements.

Pellet quality and hardness. For producers choosing pelleted supplements to be fed either solely or with other grains, pellet quality can affect acceptance. Lower-quality soft pellets contribute to breakage, causing cattle to sort out fines. Calves instinctively avoid fines, which will accumulate in the trough. When the feeder eventually empties, hungry calves could consume fines, increasing the rate of ruminal fermentation and the risk of acidosis.

Particle size and texture. These factors are especially important when mixing multiple ingredients and can encourage noticeable sorting behavior. Mixes should be formulated to meet calf nutritional needs and to avoid extreme variation in particle size, such as fines or larger pieces, and texture. For example, roughage sources such as cottonseed hulls or beet pulp can be used to increase the fiber content of the diet, although they may not be consumed evenly when over-included in the mix due to differences in the ingredient textures.

Taste and scent. Palate preferences can shift intakes up or down when using a self-feeder, as feed can taste sweet, sour, bitter or salty to cattle. Molasses can increase intakes by sweetening the flavor and scent and can also help condition the mix, minimize dust and reduce the incidence of sorting. In contrast, salt can decrease intakes due to the practical daily limits of salt that an animal can consume. Unfortunately, precise intake regulation isn't possible with salt due to the wide range of salt tolerances among animals. Producers should also note the smell of the feed, as it will influence intake and is a good indicator of the overall freshness of the feed contained in the feeder.

Commercially available limiter products. Specific ingredients will help control excessive intake from self-feeders and are especially useful when limiting energy consumption. Ingredients used as limiters could include fishmeal or fish oil, anionic salts, including ammonium chloride and ammonium sulfate, or fats. Hubbard Feeds has two products available for self-feeders, [Regulator](#) and Pasture Maximizer, that are designed with limiting technologies and formulated to be mixed with ground corn. To achieve effective intake control, these limiter programs require close monitoring and adjustments to achieve the desired intake, as mixing levels will vary depending on the animal's age, the weather and the quality and quantity of the forage.

Learned behavior

Cattle are creatures of habit, and their behaviors are learned with time. When transitioning cattle onto a self-feeder, producers need to train cattle and adapt them from a system of TMR feeding to one in which a constant supply of feed is available. Cattle should be allowed to fill up on free-choice hay and water before providing them access to a self-feeder, thereby minimizing the risk of overconsuming self-fed concentrates and any potential digestive upsets. Starting on a self-fed ration with a higher fiber content will dilute the energy content until the cattle are ready to be stepped up to a high-energy diet. After calves are transitioned to self-feeders, never allow feeders to go empty, as hungry calves will hit the feeder hard when refilled, thereby risking acidosis.

Social interactions

Cattle are social animals that develop a dominance hierarchy system within the pen. Placement in the group is influenced by such factors as breed, sex, age, size, body weight, body condition and the presence of horns. Once this hierarchy is established, herd aggression is reduced, and cattle settle into normal feeding routines. However, every time new cattle are added to the pen and the social hierarchy is upset, aggressive behavior can be triggered and feeding patterns disrupted. Maintaining a closed pen management system, where cattle are not remixed, will reduce the issues associated with social hierarchy and inconsistent feed intakes.

Managing cattle on self-feeders requires a different skill set than that associated with daily TMR feeding. A self-feeder provides advantages in reduced feeding costs related to facilities, equipment and yardage, and it also provides the ability to safely feed smaller groups. Experience is key to determining what works best for your individual operation and whether self-feeding is a good fit. Understanding the factors influencing cattle intake and diet choice, along with selecting the right supplements, will support success when both growing and finishing with a self-feeder. Keeping an open mind regarding self-fed cattle management options and supplementation strategies could offer a new level of convenience and could even yield the most precious of life's commodities: more time.