

## **Improving Dry Matter Intake**

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Balancing a nutritious diet for dairy cows and feeding this balanced diet are two very important aspects of a successful feeding program. Each cow must receive enough of each essential nutrient to maximize her milk production. Not only does the nutritional content of this ration affect milk production, but the amount of feed she consumes affects it as well. The more feed a cow consumes, the more milk she will produce. Calculating the dry matter intake (DMI) is one way to determine the amount of feed a cow consumes. Dry matter intake is the amount of feed a cow consumes after all of the water has been removed from the wet and dry feeds. There are three major factors that can affect a cow's dry matter intake. They are the feed ration, the environment, and the cow herself.

The ration must be balanced to provide all essential nutrients to the cow. The quality of the forage is extremely important. Poor quality forages are high in acid detergent fiber and neutral detergent fiber and they will decrease feed intake. Dry matter intake will also be reduced by forages which make the total diet too wet (less than 40% dry matter of total ration) or too dry (more than 60% dry matter of total ration). Dry forages are often spoiled and can contain molds. This causes a decrease in palatability which leads to a decrease in DMI. Also a diet that has too much starch (NSC) will decrease DMI. No more than six pounds of grain per cow should be fed at each feeding which can help stabilize the rumen pH and help rumen fermentation.

The environment is also a major factor that affects DMI. The design and location of the feed bunk is extremely important. They must be close to the cows and readily accessible. Also, feed bunks built closer to the ground are better than raised feed bunks because the cow is in her natural grazing position (initiating saliva production which buffers the rumen). Also, the feed bunk should have smooth texture on the bottom. Adequate bunk space is essential. Each cow should be provided with 30 inches of bunk space. This is especially important for heifers and fresh cows. Providing enough bunk space for each cow helps reduce the chances of being run off by a more dominant cow. The feed bunk should also be cleaned out regularly. The presence of moldy feeds decreases the palatability of the feeds and discourages DMI. The feed bunk should always have quality feed in it, and feed should be available for at least 21 hours every day. The more times per day cows are fed, the more dry matter they consume. Feeding and sweeping feed up in the feed bunk stimulates the cow to come up to the feed bunk to eat. Also, cool, clean water should always be readily available. During the summer, heat stress negatively affects DMI. Minimizing the cow's discomfort due to heat and humidity is essential in keeping DMI and ultimately milk production from decreasing. Cows should be fed more often in the summer to stimulate them to eat. Also, it is extremely important to keep the feed bunk full at night, when consumption is highest.

Finally, the size of the individual cow affects DMI. The bigger a cow is, the more dry matter she consumes. Because they have not yet reached their mature body weight and are smaller, first-calf heifers will have lower DMI than mature cows. Milk production and stage of lactation also affects DMI. Higher-producing cows are naturally going to consume more than lower-producing cows to meet their greater energy needs. Also, as a cow progresses in her lactation, she comes into a positive

energy balance. At this point, her dry matter intake will decrease because her energy needs are not as great as they were during the early part of her lactation. A cow's dominance also plays an important role in her DMI. A dominant cow has no trouble finding and keeping a place at the feed bunk. However, a timid cow (especially a heifer or fresh cow which must establish their rank in the hierarchy) is likely to wait until the other cows are finished eating. Often, if a timid cow attempts to take her place at the feed bunk when it is crowded, she will get run off by a dominant cow.

In conclusion, calculating the dry matter intake is a very useful method in determining the amount of energy a cow receives each day. The more energy she receives, the more milk she produces. Providing a nutritious ration and a comfortable environment are the best ways to get the most dry matter into the cows.