

Compare two similar high producing cows in the same feeding group on the farm, with fairly close but different production levels. What would be the biggest determining factor, nutritionally, between these animals level of production?

The cow that makes more milk obviously requires more total nutrients in her diet in order to make that extra milk. But if these cows are in the same group, eating the same TMR, what then is the real difference between them? Basically, one of the cows is eating more pounds of TMR dry matter each day than the other cow. More TMR each day equals more production each day.

What if there were some things from a managerial standpoint, that might not cost much to do, but would encourage all the cows in the group to eat more dry matter. The answer should be produce more milk. Though each cow tends to be an individual personality, there are certain traits, common to all cows, which can be leveraged to encourage dry matter intake.

What are some of these management activities? To more clearly illustrate, it might be easier to twist around and look at this from the perspective of what management activities or actions will promote dry matter intake. One of the simplest has to do with the most basic feed requirements, water. Logic (and research) says that the cow that drinks more water will be capable of producing more milk. Conversely, limiting water consumption will put a limit on milk production. Also the greater the dry matter consumed, the more water she will desire to drink. ( <http://www.ansi.okstate.edu/exten/dairy/wf-4275.pdf> )

At this point most people reading this are saying to themselves, “What are they talking about? We have drinking fountains all over the farm”. The question that begs to be asked is; Is there enough opportunity for every cow to drink all the water she prefers to drink every day? The goal in increasing water consumption is to set up a situation where every cow gets access to water as often as she would like to drink. This removes one potential cause of limiting production. To accomplish this goal, there needs to be at minimum 1 water fountain or 2 feet of tank perimeter for every 15 to 20 cows and at least two drinking locations per pen. This is a minimum. (MWPS-7) Minimums need to be exceeded when exceptional performance is desired. Keep in mind, you are trying to create a situation that enhances the cow’s ability to drink water. Increased water consumption equals increased intake. The minimum situation is exactly that, a minimum. Create a situation where the minimum is exceeded.

If a pen has a mix of age groups, perhaps two-year-olds and mature cows, even more watering locations are needed. Cows are animals with a clear social order. When a pen has poorly placed water fountains such as at the ends of blind alleys or in areas where more timid cows must pass more dominant cows to get at the water. The timid or lower ranking cows will not get access to water in the amounts that they need to maximize production. Put yourself in the cows’ place. If you are younger, smaller or less aggressive then you get to drink only when you stand the least chance of getting kicked

around by the dominant cows. The ultimate result is your access to water is limited. This means your ability and interest in eating will be affected. Remember management is all about the cow.

During hot weather even more water and more watering space or locations are needed. Because water intake is usually associated with feeding and milking, some producers provide water in or near the parlor return alley. Ideally water should be available within 50 feet of the feed bunk. ( <http://www.ansi.okstate.edu/exten/dairy/wf-4275.pdf> ) This situation promotes conditions where the cow can repeatedly drink and return to the feed bunk for more dry matter.

In new construction, cross alleys should be no more than 30 to 40 stalls apart and should be a minimum of 12 ft across to allow space for extra watering facilities during hot weather as well as room to pass while others are drinking. (MWPS-7) Heaters are not required in these waterers because they can be removed or shut down during the winter when water requirements are slightly lower. The other part of creating a situation where all cows can and will get their fill of water is water quality.

From the cow's perspective, she would like only a couple of things from her water. First that it is clean and second that it is clean. If the goal is to provide water in such a way that intake is maximized, there is a need to identify the things in the cows' world will cause her to drink less of it. There are a variety of standards for which water might be tested against, high mineral content, high nitrogen content, bacterial or petroleum contamination, etc and these water sources should be tested at some point to identify potential problems. (<http://www.ansi.okstate.edu/exten/dairy/wf-4275.pdf>) Testing for pathogens can often be done through the county health department. Other types of testing can be done through private laboratories. Many Extension offices have a list of local labs.

Fortunately, the primary water quality problem limiting feed intake is the cleanliness of the waterers and tanks. The basic test for how clean waterers need to be is whether or not we humans would be willing to stick our face into the water and drink. If not you and I, then why should we expect the cows to want to drink from a dirty water fountain. Cows have a particularly good sense of smell. So it is a good bet that when the water tank is lined with old decomposing feed, dust, bird droppings and week old cow saliva, it is going to have an odor to it. This is particularly true in the warm weather when we would like the cow to be drinking extra water just to help her stay cool. Very likely these materials are also causing a change in taste as well. This change in taste, like the odor, is probably not a good one either.

Why should the cow be expected to rush to the waterer and drink her fill? Yes, she will go to the water tank and drink, simply because she absolutely must consume some water to survive. The question being asked is, Will she to drink that extra amount that will help her make the extra milk we are working toward? If maximizing dry matter intake to produce extra production is our goal, then yes it matters how clean the water tanks are,

because we want our cow to drink the maximum amount every day. How is cleaner water accomplished? It happens through inspection and regular cleaning.

Planning ahead can help facilitate cleaning. In new construction or when replacing watering units chose equipment which has a maximum depth of 6 to 8 inches. This will help keep water fresher because it is replaced over more often. This will also facilitate cleaning because less debris will accumulate. Cleaning needs to be actively encouraged in the same manner milking procedures are managed.

Another common situation limiting water intake is a lack of water when it is demanded caused by poor planning in the design of the water system distribution and pumping system. There are a variety of activities done daily on a modern dairy ( Sprinkler systems, tank washing, milk cooling etc.) that will use significant amounts of water. If these activities occur simultaneously with the demand for water from the cows, there will be times when the cows will not have the water they need. This means that some animals will be limited in their intake, which will limit production.

The way to ensure that adequate water is available is through planning. Identify water usage requirements, peak flows and expected drinking water volumes. From this information, well pump peak volume, water line sizing can be calculated. A good review of this issue can be found at the website (<http://www.wdmc.org/2001/WDMC2001p017-26.pdf>), more informationa can be had from MWPS-7 Dairy Freestal and Housning Equipment. And management is exactly what will set the course for improving dry matter consumption and potentially milk production.