The Cows Are Always Right! Evaluating Rations

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Much of the focus on ration evaluation has been on herd production and health records and feed analyses. These are very valuable tools, but you cannot properly evaluate rations without getting out among the cows that are eating them. An important part of evaluating a ration is actually assessing the feeds, management, and interaction of the cows and what they are fed. This involves looking at cow behavior, bunk management, manure evaluation, water availability, rumination, cow appearance, body condition, cow comfort, feed availability, feed quality, and on. As you walk the herd, keep your senses open so you notice what is going on, and pick up on things that are normal and out of the ordinary. Use the information you gather in the barn to build a case: do the variety of pieces of information point the same direction, suggesting what should be changed or not changed in the ration, feeds, and management? Staying in the milk house or office won't give you all the information you need. In this article we will discuss evaluation of housing. Cow behavior, manure evaluation and feed evaluation are equally as important but will be discussed in other articles.

The Barn And Laneways: Go out to the barn. Take the route the cows have to go from the parlor to the barn or paddock. Take the time to be quiet and watch and listen:

Do the cows appear to have comfortable, non-skid footing?
Many rocks in the laneways? How deep is the mud?
How far do the cows have to walk from the parlor to their barn/corral?
Is ventilation in the barn good?
Are the cows using the stalls comfortably?
Is the barn comfortable / are fans and cooling systems working?
How many hours a day are the cows in the barn?

If cows can't breathe, rest, or walk, they are likely to milk less. A comfortable cow can put her energy towards making milk, rather than surviving her environment. Slick surfaces that make cows do a four-footed shuffle, rough surfaces that have them tip-toeing on sore feet, or deep mud that could suck the boots off of an unwary extension specialist make it more likely that the cows will make fewer trips to the bunk. Rocks in the laneways make for bruised feet and lameness. If you can't reasonably traverse the path from the parlor to pen, the cows are being asked to expend more energy than they should. Watch the cows as they move: they will tell you what's comfortable. The distance from the milking parlor to where the cows rest and eat determines how much additional energy they have to devote to walking over and above the base level included in maintenance requirements. That must be subtracted from the energy available for milk production. Cows don't appear to be as sensitive to ammonia as people are, but the humidity and odor can give an indication of whether the air exchanges are adequate.

Giving a cow a comfortable place to lie down, get off her feet, ruminate, and rest is crucial to keeping healthy, productive cattle. If cows are not using the stalls, if they are lying half in – half out of stalls, if they just stand in the stalls, reassess whether the stall design and dimensions are what they should be.

Heat-stressed cows are more prone to ruminal acidosis, sorting their feed, and slug feeding. Just think: at the very least, if cows are panting or breathing heavily, they are not chewing their cuds, and this does not help rumen health. Keeping fans and sprinklers in good working order is the only good way to deal with heat stress. We do recommend that heat stress rations contain more potassium, sodium, and magnesium, and as much if not more forage, but any ration changes to deal with heat stress are just band-aids – you need to cool the cows. About forage and heat stress: feeding more concentrate during heat stress is a bad idea. There is no research information to support it. Since heat stress makes cows more susceptible to rumen acidosis, feeding them adequate fiber, more and more palatable forage, and possibly less starch can keep them healthier, they won't lose more milk than they would normally, but they'll be better prepared to perform when cooler weather comes.

If cows spend much time away from the barn, they have that much more time where they can't eat, drink or rest. Generally, the suggestion is that cows be grouped so that they spend no more than 2 hours per milking away from their barn. Anecdotally, the more time cows spend standing on concrete with no chance to lie down, the greater the chance of hoof problems.

Waterers near the exit to the parlor?
Are the waterers working, filling adequately, clean?

Milk is 87% water. No water, no milk. Cows are lazy. The more convenient we can make it for them to have good, fresh water and feed when they want it, the better they will produce. Water intake can be affected by level of production, feed, sodium, and protein intake, and environmental temperature, not to mention the base amount of water that cows need for maintenance. Cows require about 0.36 gallons of water per pound of milk (NRC, 2001). That water can come from feed or drinking water. Water intakes under heat stress can increase by more than half, as temperature increases.

Is there feed in the bunk? Is it well mixed? Particle size?
Does the feed in the bunk look like the formulation on paper?
Has the feed heated? Is it musty? Apparently palatable?
Are there clumps of spoiled silage in the bunk?
Is there adequate bunk space?
Do cows have fresh feed available when they come back from the parlor?
Is feed pushed up several times a day?

Ideally, having 3-5% of the feed leftover that looks and smells like the feed you originally fed will help to assure that the cows get the feed they need to make milk, grow, breed, and gain body condition. TMRs should be well mixed, or what's the point? If the particle size is too fine, the animals may not get enough effective (chewable) fiber to keep their rumens functioning well, too coarse, and they will sort feed. Cows are sorting feed, if they nudge feed back and forth with their muzzles and then dive towards the floor. They are usually pushing forage out of the way and eating grain. Moistening the feed with water or a liquid feed (molasses? wet brewers' grains?) so it holds together, and making sure most of the forage is cut 1 – 2 inches long will help to prevent sorting. The feed in the bunk should resemble the formulation on paper. Check mixer weights and feed dry matters against the formulation.

If the feed has problems with heating or mustiness, examine the individual feeds to find the source of the problem. If the feed is unpalatable, the cows will eat less of it. If it contains molds, problems from mycotoxins may result. The clumps of spoiled silage that make it to the bunk,

from not cleaning the spoiled material from the silo, can cause occasional cows to develop diarrhea, as not all cows consume the spoilage.

If feed bunk space is limited, your cows may slug feed, eating large meals in short periods resulting in ruminal acidosis, or lower feed efficiency. Making sure that fresh feed is available in the bunk each time the cows come back from milking, and pushing up at least once between feedings can help increase and even out the intakes. When a cow comes back to the barn, if there is feed, she'll likely stand there and eat, if not, she'll probably go lie down. Once she lies down, it takes active effort for her to get up and eat once the fresh feed is delivered – she may not do it. If possible, adjust cow numbers per pen to increase bunk space per cow.