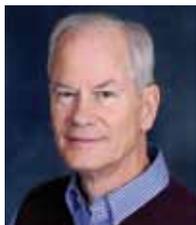


A closer look at limit-feeding heifers

OVER the past 40 years, heifer growing programs have undergone various phases and encountered various issues. At one time, heifers often were the forgotten animals on a dairy, sometimes banished to the proverbial "back 40."



Kertz

Then in the 1970s and 1980s, corn silage became more popular for feeding cows and heifers. Too often corn silage was available free-choice to heifers which resulted in their getting fat.

With high-fiber/low-quality forage, there was a practical limit to how much protein could compensate for this low-quality/high-fiber forage. In a British study with younger calves, feeding more forage had a double negative effect in that average daily gain (ADG) was reduced as forage level rose from 4 to 61 percent while gut fill also increased, distorting true body growth.

As more emphasis was placed on growing and harvesting higher-quality forages for cows, these forages often were fed to heifers, too. At the same time, greater emphasis was placed on higher genetic merit for cows. Consequently, intake of heifers edged up with genetic merit, too. And with higher-quality forage, heifers then could get fat when fed virtually forage-only diets.

A better way?

Some people then began to use some poorer-quality roughage to reduce energy concentration and to, thereby, limit energy intake when diets were fed free-choice to heifers. That led to others seeking another approach . . . limiting heifers' intakes.

Limit feeding heifers successfully requires a lot of skill. But first, you must master good principles of feeding and management for heifers because successful limit feeding depends on a high level of feeding strategy and other management.

Potential benefits to limit feeding are to reduce feed costs, reduce nutrient excretion, and reduce feed needed. In various research trials, limit feeding has achieved targeted ADG (average daily gain) if dietary protein and energy concentrations have been adjusted to provide the same amount of protein and energy as for free-choice fed heifers. It also has resulted in similar first-lactation milk yields as free-choice fed heifers; plus it has reduced manure excretion and improves efficiency of nitrogen utilization and other nutrients. One key to making it work is adequate bunk space provided for

all heifers to eat at the same time. This is especially critical for heifers lower on the social order.

Pat Hoffman at Wisconsin cautioned that there are some limitations to implementing a limit-feeding strategy. First is the expectation that heifers will vocalize to a minor extent for about one week, and then they will quit.

Second, if you don't have adequate bunk space for all heifers to eat at the same time, dry matter intake may be limited for some heifers. Cattle all want to do the same thing at the same time.

But cows and heifers also have a distinct social order. Consequently, Ken Nordlund at Wisconsin found that transition cows responded best in subsequent milk production if the stocking density was 80 to 85 percent of headlock bunk space available. That means that, if there were 100 headlock spaces available, the pen would only contain 80 to 85 cows. This response is due to the most timid cows not coming in to the headlocks to eat unless there was more than one side-by-side headlock open.

Heifers likely have similar social behaviors as cows. Consequently, lack of adequate bunk space could result in uneven or lower rates of gain with heifers. Also, consumption of edible bedding confound your intake and daily gain results.

It has been established in research trials that limit-feeding heifers can have advantages in decreasing manure output, reducing feed usage, and improving feed efficiency. But

how well might that work on an actual calf/heifer operation?

Mason Dixon Farms near Gettysburg, Pa., began utilizing limit feeding of high-energy diets for their heifers in July 2006 under the management of Alan Waybright, the initial recommendations by Jud Heinrichs at Pennsylvania State University, and ongoing diet formulation by nutritionist Robert Fry of Atlantic Dairy Management Services. By October 2006, all heifers were on this program, and as of January 2009, about 2,000 had had their first calf. In January 2009, most Holsteins were being bred to Normande Reds. About 250 of 2,000 heifers then were crossbred, and only 30 crossbred cows were in milk.

Age at first calving averaged 23 months with Holstein precalfing body weight ranging from 1,224 to 1,400 pounds. Crossbred weights ranged from 1,050 to 1,125 pounds. Heifers started the limit-feeding program at about 4 months of age and weighing about 275 to 300 pounds. Primary benefits realized were lower feed costs and less manure.

There were five groupings of heifers, each with their own ration. Their diets had been developed by trial and error at Mason Dixon Farms by the nutritionist and the calf/heifer manager. The nutritionist indicated the need for published credible data showing the absolute amount of metabolizable energy and metabolizable protein needed for limit-fed heifers and for a software program to optimize diets.

In addition, he made the following observations about the limit-fed program for heifers:

- There is a reduction in feed cost due to improved conversion efficiencies.
- Adequate bunk space is required for all heifers to eat at one time.
- Bawling is common in the barn when people or feed equipment are nearby.
- Boredom is a concern with an empty bunk for as much as 16 hours per day. There is more tongue lolling and penmate sucking.
- Body condition will be normal, but there is noticeably less abdominal fill. Heifers have a "barrel" more like a finished feeder animal, and feed delivery is easy since no one needs to make a bunk call. Just feed and make a head count.

But in January 2010, Mason Dixon Farms discontinued this program for three reasons. Lower cost per head per day ceased to be an advantage because they then had plenty of forages on hand, grain prices were higher than in 2006, and it was cheaper to go back to a traditional ration with less out-of-pocket cost.

The nutritionist was not comfortable with balancing the ration to meet heifer needs without adequate limit-feeding software to accurately predict performance, especially against metabolizable energy and protein input requirements. And the Mason Dixon staff noticed more bad behavior, sucking, and so forth. 🐄



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