

How are your first-calf heifers doing?

THE end objective of raising a heifer is to get her into milk production consistent with her genetic potential. There are two components to this equation. First, how well have we grown that heifer, and, secondly, how well is she producing milk? Let's further break down the growing program into before breeding and after breeding.

The overall objective should be to have first-calf Holsteins weigh in about 1,400 pounds before calving and be 54 to 55 inches tall at the withers. Since heifers, and cows, lose about 11 percent of their body weight at calving due to the calf, tissues, and fluids associated with calving, this means they would weigh about 1,200 to 1,250 pounds after calving. If hip height is used to measure height, then simply add 2 inches to what the wither height should be.

This would have been preceded by a window for breeding at about 13 to 14 months of age when the heifers should weigh 750 to 800 pounds and be about 48 to 49 inches tall at the withers. A reasonable services per conception for heifers using artificial insemination is 1.3 to 1.5 which will result in calving at about 23 to 25 months of age taking into account variation in growth rates of heifers. These two time periods provide checkpoints for how we have been growing our heifers.

Locate the problem . . .

If their weight or height is not what it should be at breeding, then back up further into the program and see why not. This may require another measurement at the end of six months, 375 to 400 pounds and 41 to 42 inches at the withers, to see if that is the first breakdown point. If so, then back-up further to determine when this begins to occur first. If you have already been taking these measurements, then you would already know when the problem occurs; and, hopefully, be already dealing with it.

If the problem has occurred by first calving, but not by breeding period, then you know that it is occurring over the last nine months or so of the growing period. This can happen due to a variety of situations such as feeding and nutrition, grouping, housing, health problems, or not getting heifers bred on schedule. Sometimes after heifers are bred, they are not fed and managed as closely. They may even find themselves thrown in with the dry cows and subjected to their feeding and management program.

This is not where they should be at that point.

There is another checkpoint that does not occur until heifers are far enough into their first lactation so that a M.E. (mature equivalent), 305-day, 2x lactation yield is being calculated in their DHI records.

"The best genetics on most dairy farms are found in calf pens," was noted by Bennett Cassell in a 1993 Hoard's article. This provides a reference point for evaluating DHI records. First, let's look at three simplified scenarios in Table 1:

Lactation	Scenarios		
	1	2	3
1	23,500	24,500	25,400
2	25,000	26,000	24,500
3+	26,500	25,000	24,000

Scenario 1 in the table represents a herd where normal rate of genetic progress and culling resulted in a progressive production increase with increasing lactation number. Evaluating the age, size, body condition, facilities, feeding, and handling of first-calf heifers might indicate that these heifers could be doing even better considering their genetics and limitations in any of these areas.

Scenario 2 indicates that the genetic potential of the first-calf heifers over the past two years, in combination with the heifer growing program and feeding/handling in the first lactation, is being realized and is superior to the older cows after second lactation. Continuation of this pattern over the next several years will continue to

significantly raise the rolling herd average (RHA).

Scenario 3 indicates that first-calf heifers are superior to other cows in the herd. This superiority could be due primarily to genetics, although that usually is not seen so dramatically in a one- or two-year period. It is more likely due to improved genetics realized by an excellent heifer rearing program and first-lactation feeding and management. If this pattern continues over the next several years, there would be dramatic increases in the RHA.

The influence of these scenarios on the RHA can also be affected by other factors such as the number of animals in each of the lactation groupings. Few first-calf heifers with higher M.E.'s will have a lesser influence on the RHA than if one-half the herd is first-calf heifers. Also, if the average age of first-calf heifers coming into the milking herd drops, the M.E. of this grouping will be higher, although the actual 305-day lactation milk production does not rise, or could possibly be even lower.

Lastly, lactation curves of first-calf heifers can be quite variable. Therefore, it is best to track the M.E.'s of the herd by lactation number on a monthly basis or several times a year. This way you can be assured that the scenario is consistent and not simply confined to a month or two. Individual tracking of first-calf heifer M.E.'s on a monthly basis also will reflect whether that animal is having a fairly typical lactation.

Real life example . . .

Now let's look at an actual case. The distribution of cows by lac-

tation number in Table 2 is fairly typical. Now notice that the PTAs of dams and sires was highest for

Lactation	No. cows	M.E., lbs.	Milk, lbs.	
			Dam PTA	Sire PTA
1	31	21,227	494	1,385
2	20	22,698	32	1,107
3+	40	20,344	-355	995

lactation one, next for lactation two, and lowest for lactation three. But M.E. milk is lower for lactation one versus lactation two. This is inconsistent with genetic potential.

A review of the heifer growing program indicated a pretty good program and results up to breeding time. Then after breeding, heifers were moved into one large group. The feeding program was heavy on corn silage, resulting in an excess of energy and marginal in protein.

The heifers were getting too much condition and not growing as much as they were capable. The result was heifers calving at about 24 months of age, but being somewhat overconditioned and not as tall as they could be. That is why they did not produce as well as their genetics indicated they should. The solution was to address the feeding and management program from after breeding until first-calving.

The approach discussed above deals with assessing existing programs. Once this assessment has been done, on-going review of DHI and other records should be done to prevent problems from developing that may not show up until months later or even into the first lactation.



EVALUATE HOW HEIFERS ARE DOING by tracking mature equivalent production by lactation number monthly or at least several times a year.

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