

I've Got 99 Problems But Generating Heifers Ain't One!

Dr. Robyn Elgie

Over the past few years, you need only to step into the breeding age heifer pen for a moment to realize one of the industry's new problems. Heifers. Heifers as far as the eye can see. What seems like endless numbers of mischievous juveniles ready to lick ultrasound goggles off, chew the walls or unlock a gate in 30 seconds flat that takes the overly educated vet five minutes to open, usually with assistance.

How did we get here? The dairy industry has made great strides in calf health, transition management, feed quality, rations and reproduction. Most farms have adopted these advancements so successfully that now they are easily able to generate more heifers than they will need. I like to call this a 'good' problem. Yet, it is still a problem and should be remedied. With the rising price of land, commodities and construction there is even more incentive to re-examine how many heifers your farm needs to generate for replacements each year. The cost to raise a heifer in Ontario is approximately \$2500. The majority of this is feed costs. With the above-mentioned expense pressures, feeding animals you do not need can significantly impact your bottom line. It can also result in involuntary culling of profitable older cows just to make room for a heifer that may only produce 66% of what a solid 3rd lactation cow can. Worse still, keeping too many heifers can negatively impact the health and future productivity of the animals we do want to keep for the future. Growth rates and treatment rates are higher with increasing stocking densities. We also know that treatment rate is inversely correlated to first lactation milk yield, higher the treatment rates result in lower milk yield in first lactation.

If your advisor team agrees to reduce the number of heifers retained as replacements, the question becomes: How many heifers do we actually need and how fast can we get to that number?

If heifer stocking density and feed inventories are tight, you will want to reduce the number of heifers you currently have as fast as possible. The good news is this can be done from one day to the next. The bad news is it is difficult to see a loss on your investments. It is important to keep in mind that rarely can we sell a fresh heifer for a value more than what it cost to raise her.

Short Term Culling Solutions:

- Any heifer that has been treated more than once for any clinical disease should be culled.
- Heifers that have been treated for clinical disease during calthood will produce as much as 1000kg less in their first lactation than herd mates that were not clinically sick and therefore treated.
- Heifers with poor feet and leg confirmation or chronic foot conditions.
- Poor confirmation (eg straight hocks) leads to premature lameness, reduced ability to express heat signs and future reduced ability to walk to feed bunk or parlour leading to poor production and premature culling.
- Contagious foot conditions such as digital dermatitis act as a source of infection and can be chronic, lifelong diseases.

- Poor reproductive performance. This parameter will be specific to each farm, taking into account conception and insemination rate, but I recommend to cull if bred more than three times.
- Reproductive success does not improve with age, her ability to get in calf in a timely manner with each lactation will likely be well below herd average.
- Dam performance (using metrics such as 305ME on DairyComp).
- Using dam production as a predictor of lactation performance, if her dam is in the lowest quartile of the herd this is a predictor of the heifer's future performance

Genomics:

- If this data is available, combining it with Dam 305ME can clarify what animals make up the lowest quartile of the herd.
- Longer term solutions involve examining breeding strategies and re-thinking the typical 305 lactation. Remember, breeding strategies that are implemented today will not be reflected in the milking herd until almost three years from now. It is difficult for anyone to predict the needs of a dairy that far into the future. Therefore, it is important to sit down with the advisor and management team to set goals that are comfortable for your operation.

Long Term Solutions:

- Plan breeding to create less heifers.
- To determine an educated target number, the following must be considered:
 - Involuntary culling rate (dairy sales).
 - Number of heifers born vs how many of those animals freshen 2 years later (ie how many heifers do we lose along the way).
- Abortion rate after first preg check.
- Conception rate.
- Whenever possible look at the average over multiple years to account for variation.

After looking at the above farm data you can then use strategies such as:

- Breed heifers to sexed female.
- Breed the goal number (determined from data above) of the lower percentile of the herd to beef, sexed male if available.
 - Note: there will likely be more beef breedings on cows than sexed female on heifers; however the number of successful breedings should be the same
 - Example: Heifer conception rate@ 50% takes 2 breedings = 1 heifer calf
 - Cow conception rate@ 33% takes 3 breedings = 1 beef calf

- Strategize the time of year when heifers may or may not be needed.
 - Breed for less heifers born in the winter months.
 - Generally, December-April the average farm is over quota - Calves born during these months will freshen during these same months two years from now.
 - Breed more cows due to calve at this time to beef.
 - Assuming fall incentives, target breeding for more heifer calves to be born during the months of June-August so they will calve during this time two years from now.
 - Breed sexed female to heifers and first lactation animals to increase heifer numbers.
 - Consider moving the timing of breeding slightly to move calvings into or out of these periods for animals on whose VWP fall on the outer edges.
 - Consider slightly extending lactation length and calving interval.
 - By extending these periods there will be less calvings and therefore less heifers (and less bob calves!) generated over the year.
 - This may also have benefits at dry off with lower production at dry off than at shorter days in milk.
 - This also allows the farm to take advantage of the improvements in peak milk and persistency resulting from successful advancements in management and genetics.
- ***Note: this is dependent on reproductive success, please consult your herd veterinarian for advice on whether this strategy fits your operation.

Monitoring:

A dairy farm is very dynamic with many variables influencing multiple parts of the farm at any one time. It is important to monitor any changes that are made and make corrections as needed. When implementing the above strategies, the following should be monitored with your veterinary advisor and team:

- Heifer inventory:
 - Monitor quarterly by looking at Heifers Born, Weaned or 6 months old.
 - Work with your veterinarian to decide which parameter is best for your operation
- Heifers created per month:
 - Use Sire Code on Dairy Comp to monitor.
 - What are the goals for the farm going forward?
 - Is there expansion happening in a few years?
 - Is there a niche market for fresh heifers from this farm?
 - Is there space, labour and inputs to support a successful veal enterprise?