



Replacements are expensive!

Everyone agrees that replacements are expensive when you're talking about machinery, but when it comes to cows, many are not so sure.

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An analysis of milk production costs in Canada shows that 12 per cent of the expenses incurred in dairy production are linked to the cost of replacing cows in the herd. For the average 55-cow herd, this represents an annual outlay of nearly \$45,000, or close to \$800 per cow present. Note that this amount takes into account all of the costs related to rearing or purchasing replacement animals minus all revenues from the sale of animals for production, cull cows, and milk-fed calves. Is this where we should be looking to reduce milk production costs here in Quebec?

Four factors influence the net cost of replacing cows in the herd: the number of cows that need to be replaced, the cost of raising a heifer, the safety margin established by the producer, and, finally, the price received for the cow that is sold or culled.

Culling rate

Herd replacement needs can generally be determined based on the culling rate, which is calculated by dividing the number of cows removed from the herd by the average number of cows present during the year. It makes more sense to subtract the cows sold to other producers before doing the calculation, however, since those cows will pursue their careers as milk producers in other herds.

According to the statistics compiled by Valacta, a little over 97,000 cows left the herds that were enrolled on milk recording in 2009. Considering that the total number of cows that year was around 300,000, that corresponds to a removal rate of 32 per cent, or one out of three cows. This means that, on average, our cows complete only

three lactations before leaving the herd. In a country renowned for the quality of its dairy stock, does this constitute good performance?

Table 1 enumerates the reasons why cows leave the herd. Note that the cases in which the cause of removal was unreported were distributed proportionately among the various categories. (See Table 1).

The table shows that 14 per cent of the cows removed are simply transferred to other herds. If we exclude those animals, the culling rate drops to 28 per cent. Examining the reasons for culling will help us target the areas where improvements are possible.

If we apply the percentages from this table to our 55-cow herd, we obtain the following results: two cows dead, two cows sold to another producer, one cow voluntarily culled, and 13 cows culled for involuntary reasons. The first obvious thing we note is that there is very little voluntary culling; if we exclude the cows transferred to other herds, barely nine per cent of the cows are eliminated voluntarily. Conversely, 15 cows left the farm for involuntary reasons, specifically death and health problems. Problems related to reproduction, udder health and lameness account for 75 per cent of involuntary culling. Surely there's some room for improvement there? Adapting our reproductive strategy, revising our milking methods and system and, finally, improving the comfort level of the stalls are all effective ways to ensure that three or four fewer cows are culled during the year. This means that we will have to devote money and/or effort to improving the situation. Will the gain be worth the pain?

Rearing costs

Agritel Web tells us that the average total cost of rearing a

heifer in Quebec in 2008 was a little over \$3,000 (Table 2). If we deduct the revenue from the sale of the culled cow, it costs us a little more than \$2,445, on average, every time we replace a cow. Even in the top 20 per cent group the cost is substantial: \$1,885/head replaced. Nonetheless, these farms save \$560 compared to the average every time they replace a cow. If we apply the figures from Table 1 to our 55-cow herd, with its 16 culled cows and two deaths, the top group saves a total of \$11,500 per year without having to compromise on herd development. (See Table 2).

Even if most producers admit that it costs them between \$2,000 and \$3,000 to raise a heifer, it's clear that very few of them take this figure into account when it comes to making decisions with regard to their operation. There is a tendency to consider only direct expenses and, since these are covered by revenue from the sale of the cow or the heifer (if removed before calving), little attention is paid to selection at the time of the heifer's birth (or the dam's breeding). The reasoning is that grains, forages and straw are "already produced," the barn and the equipment "are already there," and the employees are "on site anyways." This may be valid in the short term but it doesn't hold water in the long run. A case in point, this comment from a producer who had changed his approach two years prior: "I recovered the space vacated by the extra replacement animals I was keeping and I fixed it up for the cows. Today I'm producing 12 kg more quota in my barn without having to expand or buy hay or hire new employees." You don't need a calculator to figure out that he increased his profit in the process.

Safety margin

The highest comfort level and an efficient reproductive strate-

gy won't protect a farm from unexpected circumstances. Some producers will opt to purchase cows when exceptional replacement needs arise. This solution doesn't seem to suit everyone however. It may be hard to find animals available in certain niche markets, like organic milk, for example. Likewise, some producers prefer to maintain a closed herd policy to minimize disease transmission. In these cases, raising a few extra replacement animals is an appropriate strategy. The margin should be limited however; five per cent surplus replacement animals will generally suffice. On the other hand, there's no justification for rearing animals of inferior genetic potential. It's a good idea to think about selling surplus heifers before they calve if they aren't needed as replacement animals in the herd; the difference between their rearing costs and the revenues from their sale can be considered as an "insurance premium."

Selling price for cows

Sales of cows and heifers compensate in part for the costs associated with maintaining a dairy herd. Unfortunately, cull cow

prices are extremely low in relation to rearing costs. Table 2 illustrates the situation clearly. In this context, improving cow longevity is the best option.

Replacement strategy

When you consider the quality of Quebec's dairy stock, aiming for cows to complete an average of four lactations in the herd doesn't seem like an unrealistic target. It's equivalent to a 25 per cent culling rate. If we add a small three per cent safety margin to that, our 55-cow herd goes from 18 to 15 heifers produced per year. If our producer manages to lower his rearing costs from the \$3,075/heifer average to that of the top 20 per cent group (\$2,435/heifer) and continues to receive an average of \$550 per cow sold, he'll be saving \$17,200 every year.

Set your goal!

A variety of tools and services are available to help you reduce your culling rate and minimize the need to raise heifers while helping you select those with the most potential. The profits to be made are substantial—and attainable for herds of all sizes. All you need to do now is to set yourself a goal!



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Table 1. Distribution of the causes of removal from the herd

	% of cows removed	For a herd of 55 cows
Mortality	11%	2 cows
Transfer to another herd (sale, rental...)	14%	2 cows
Poor yield (milk or components)	5%	1 cow
Conformation	2%	
Leucosis or Johne's disease	1%	
Disposition or milking speed	1%	
Subtotal for voluntary removal	23%	3 cows
Reproductive problems	21%	13 cows
Mastitis/high SCC, injuries and other udder health problems	21%	
Feet and leg problems	10%	
Injuries	4%	
Disease, age, others	10%	
Subtotal for involuntary removal	66%	
Total	100%	

Table 2: Cost of rearing a heifer and replacing a cow. Agritel Web, 2008

	Average (557 farms) \$ / heifer produced	Top 20% (111 farms) \$ / heifer produced
Direct expenses: purchased concentrates, veterinarian, insemination, registration, etc.	621	458
Farm products: calf value, milk, grains and hay consumed, straw used, etc. (standard price)	1 239	1 017
Subtotal for variable costs	1 860	1 475
Fixed costs: share of equipment and building maintenance costs, electricity, wages, interest, other general expenses, equipment and building depreciation charges, farmers' withdrawals and equity level remuneration	1 215	960
Heifer-rearing costs	3 075	2 435
Average net price for a cow sold (production and culling)	630	550
Cost of replacing a cow	2 445	1 885
Technical results		
% of mature cow weight attained at 24 months	86	87
Age at 1 st calving (months)	26.5	26.4