

# Long-term Strategic Planning Of Dairy Businesses

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## ■ Take Home Messages

- ▶ Supply management does not insulate Canadian dairy producers from global economic pressure
- ▶ It is imperative to develop a long-term strategic plan for your dairy based upon its inherent competitive advantages
- ▶ 'Measure what matters' and track your performance against your predicted key performance indicators
- ▶ Dairy operations should be evaluated based upon enterprise analysis i.e. the productivity and economics of
  - Milk production
  - Replacement management
  - Cropping
  - Cattle sales
- ▶ There is a significant range of productivity and profitability within the Canadian dairy industry. It is important to benchmark your farm's performance to others within the industry
- ▶ Excellent cow management ≠ excellent human resource management. As dairies increase their reliance on hired labour, it is important to develop a human resource plan
- ▶ Strategic plans are a 'living' document and need to be updated as changes occur within the farm and the global dairy industry

## ■ Executive Summary

"A strategy is the pattern or plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organization's resources into a unique and viable posture based on its relative internal competencies and

shortcomings, anticipated changes in the environment, and contingent moves by intelligent opponents” (Quinn, 1980).

Given the robust, volatile global marketplace, all businesses require a well-developed long-term strategic plan. Supply management does not insulate Canadian dairy producers from global influences, particularly as world trade moves towards freer trade with less border protection.

Dairy production is capital intensive and the most complex livestock production system and, as a result, has unique challenges and opportunities to consider when developing long-term strategic plans. Some aspects of dairy production to consider when developing strategic plans include:

- ▶ Macro factors (beyond the farm gate)
  - Industry competitiveness, both locally and globally
  - Location as it relates to access to further processing and consumers, particularly to fluid markets due to shelf-life
  - Expansion capability as it relates to the cost-effect availability of land for forage production and government restrictions
  - Cost-effective, trained labour availability
  
- ▶ Micro factors (inside the farm gate)
  - Production capacities and efficiencies as they relate to current management capabilities and facility limitations
  - Enterprise analysis due to production complexity
  - Technology adoption for primary dairy production and further processing
  - Decisions regarding self sufficiency vs. sourcing outside services (for example, custom work for all field work)
  - Capital requirements, including strategic quota management
  - Labour management, as primary dairy production is labour intensive
  - Environmental planning
  - Succession planning
  - Economic impact of the increasing cost of living

While the goal of this presentation is not to evaluate the impact of all possible impacts on long-term dairy production strategic plans, it will focus on the factors inside the farm gate and hopefully it will stimulate some further thought as you consider developing a strategic plan for your dairy operation.

## ■ Strategy

There are only three basic business strategies and the following would be examples as they pertain to dairy production:

1. Low Cost – commercial dairy production

2. Differentiated – Omega 3 enhanced fluid milk
3. Niche – organic milk production

Some companies have tried to be ‘all things to all people’, a strategy characterized as ‘Stuck in the Middle - SITM’ and rarely successful as a long-term strategy. Dairy producers that try to adopt all three strategies suffer a similar fate. A ‘Low Cost’ production strategy is deemed a competitive strategy as its success depends upon your ability to produce low cost milk as compared to your competition. ‘Differentiated’ and ‘Niche’ strategies are customer based strategies as they tend to increase the cost of production and are only sustainable if consumers see value and are willing to pay more for your product. It is important to note that although you may not consciously decide upon a strategy for your business, referred to as a ‘deliberate’ strategy, over the long-term, the business decisions you make will eventually result in an ‘emergent’ strategy (Mintzberg et al, 1995).

Based upon current market dynamics, for the majority of Canadian dairy producers, a low cost production strategy represents the most opportune strategy. There are several hall marks of a low cost production strategy:

- ▶ Produce quality products
- ▶ Live a low cost culture i.e. calculate a return on investment (ROI) before making management decisions
- ▶ Invest or adopt technologies to lower cost or increase revenue
- ▶ Excellent asset utilization
- ▶ Economy of scale that lowers fixed costs
- ▶ Know their competition and set goals based upon realistic benchmarks
- ▶ Must be adaptable to change
- ▶ Human resources are an asset, not an expense

In order to successfully adopt a low cost production strategy, it is important to evaluate your dairy operation and be competitive in each of these management areas. Of note is the fact that a low cost production strategy does not equate to ‘stripping’ your cost of production. For example, comparing milk produced (DHI records) versus milk shipped (milk cheque) is an excellent measure of your ability to produce a high quality product. Some herds ship 95% of the milk they produce, while I have discovered others that only ship 85% of the milk they produce. Since costs are associated with milk production and revenue is based upon the milk you ship, there is a 10% cost of production advantage for the herd that ships the majority of the milk produced.

## ■ Financial Levers

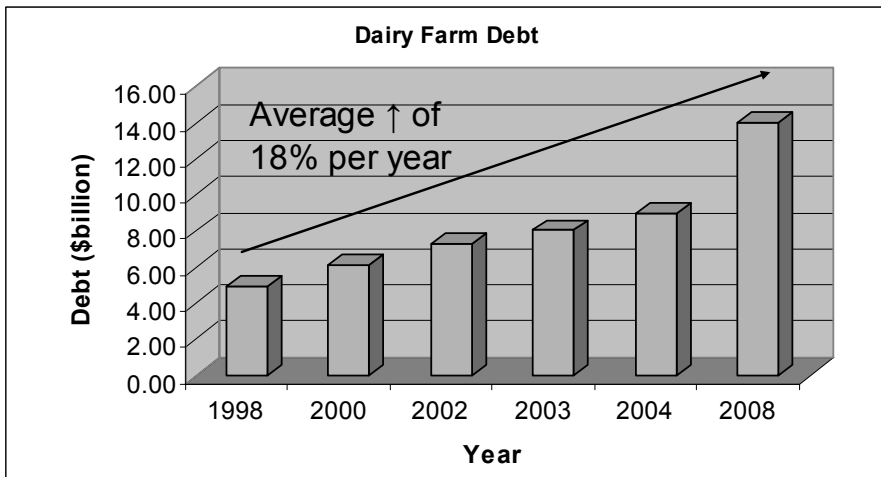
There are three basic financial levers for any business:

1. Profit margin
2. Asset utilization
3. Leverage

There are several key factors to consider when assessing a dairy operation's financial levers. With regard to profit margin related to direct input costs, feed costs represent the number one cost on most dairies and are largely impacted by forage quality and can be easily measured by evaluating return over feed cost. Labour, which should include the cost of living on farms using primarily family labour, is generally the second largest cost on dairies. It is important to evaluate labour management by benchmarking efficiency parameters, such as litres per full time equivalent (FTE) or revenue per FTE. Interest expense can be a significant indirect cost of production.

Since dairy production requires a significant capital investment, it is imperative that assets are utilized as efficiently as possible. Areas for consideration include cattle, facilities, equipment, land and quota.

Debt leverage has grown significantly on Canadian dairy farms over the past 10 years (Figure 1).



(Compiled data from Stats Canada and CanWest DHI Dairy Profit Profiler)

**Figure 1. Canadian Dairy Farm Debt**

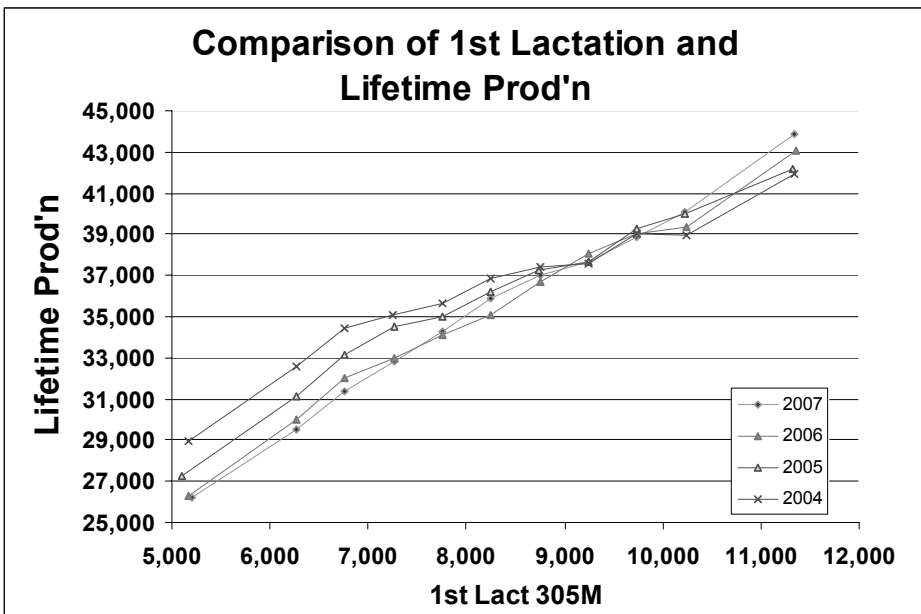
The major cause of this increased dairy farm debt is attrition offset by expansion by remaining producers resulting in increased debt associated with quota purchases, facility expansion and technology adoption. However, it has made these Canadian dairy producers vulnerable to lowered milk prices which must be factored into expansion plans, particularly in light of the recent value of the Canadian dollar and the move towards freer trade.

## ■ Enterprise Analysis

The majority of Canadian dairy operations are involved in at least four production enterprises:

1. Milk production
2. Replacement rearing
3. Cropping
4. Cattle sales, either for dairy production or beef

Strong performance in any one area often hides unrealized opportunities in other production enterprises. Unfortunately, most dairy farms only have one set of financial statements and it is difficult to assess how well the farm is performing in each production area. Replacement rearing and cropping profitability are not maximized on many Canadian dairy farms and warrant increased scrutiny to optimize productivity and profitability. The cropping enterprise should be designed to optimize forage quality and yield and reduce exposure to escalating off-farm feed costs. The replacement enterprise should meet herd turn-over demands by supplying a cost-effective, superior cow in terms of productivity and profitability. First lactation production is highly correlated to lifetime milk production (Figure 2) and management initiatives should be implemented early in life to optimize future productivity.



(Courtesy of CanWest DHI)

**Figure 2. Comparison of 1<sup>st</sup> Lactation and Lifetime Production**

## ■ Key Performance Indicators related to Financial Levers

Key economic indicators should be readily available, statistically significant, tracked over time to assess trends and used to make management decisions:

- ▶ Cattle
  - Milk shipped per cow per day, including an assessment of components
  - % milk shipped compared to milk produced
  - % of cows in milk
  - % of cows culled within the first 60 DIM including cull reason
  - Annual involuntary cull rates including cull reason
  - 21-pregnancy risk rates
  - Evaluation of udder health utilizing individual SCC, clinical case rates, including repeat clinical case rates, by parity and days in milk
  - Heifer to cow ratio
  - Pre-wean morbidity and mortality rates
  - % heifers achieving 55% of mature body weight by 13 months of age
  - % heifers pregnant by 15 months of age
- ▶ Facilities
  - Milk produced per stall per year
  - Milking efficiency (litres per milking staff FTE per hour)
  - Dry matter intake – transition groups and milk cows
  - Stall use index (cows lying down/cows not eating)
  - Optimal use of facilities – for example, maximizing parlor use and efficiency
- ▶ Equipment
  - Assess ownership versus hiring a custom operator based upon annual cost, including depreciation, and timely availability of custom operators which can have a significant impact on feedstuff quality.
- ▶ Land
  - Estimate an annual ROI on the fair market value of the land base utilizing transfer values based upon actual cost of production for home-grown feedstuffs
- ▶ Quota
  - % of quota utilized
  - # cows required to fill quota – less cows = less maintenance cost
  - Annual return per kg of quota

## ■ Impact of Production Key Performance Indicators

There are significant unrealized opportunities related to herd performance on many dairies. The key production parameters to monitor are:

- Post-calving disease incidence rates
- Reproductive performance – resulting in less than optimum milk sold per cow per year as, on average, production drops at 8% per month after peak
- Udder health
- Calf disease morbidity and mortality
- Heifer age at 55% mature body weight and resulting reproductive performance

Disease risk assessment would indicate that the average Ontario dairy is at risk of losing ~\$550 per cow to disease losses associated with the transition period, whereas top performing herds only lost \$65 per cow – a \$485 per cow per lactation difference (Table 1).

**Table 1: The Economics of Improved Transition Cow Management**

Post Calving Disorder	Total Disease Cost	New York Average LIR	Total Disease Cost per Cow	Top 10% LIR	Disease Cost per Cow
Milk Fever	\$316.20	7%	\$22.13	0.03%	\$0.09
Dystocia	\$344.16	21%	\$72.27	8.00%	\$27.53
RFM/Metritis	\$443.76	15%	\$66.56	1.30%	\$5.77
Ketosis	\$323.64	17%	\$55.02	1.30%	\$4.21
LDA	\$630.84	7%	\$44.16	0.30%	\$1.89
Mastitis	\$373.44	40%	\$149.38	1.70%	\$6.35
Lameness	\$368.16	38%	\$139.90	5.00%	\$18.41
			\$549.43		\$64.25
				Savings	\$485.17

Source: Chuck Guard, Cornell; Ken Leslie, Hoard's Feb 05

There is significant opportunity to improve transition cow management on many dairy farms.

The success of transition cow management has a direct impact on reproductive performance in the subsequent lactation, another area of opportunity on many dairy farms. Although there have been parameters used to measure reproductive performance in a herd, the current most accurate system would be 21-day pregnancy risk rates (i.e. the number of cows that

actually get pregnant within a three week window after a voluntary waiting period versus the number of cows eligible to get pregnant within the same period of time). The current average 21-day pregnancy rate reported by CanWest DHI is ~14%. Increasing the current 21-day pregnancy risk rate on these average farms would increase net profit by ~\$66 per cow per lactation for every percentage point increase. After achieving a 21-day pregnancy risk rate of 18%, this economic advantage decreases to ~\$22 per percentage point increase (LeBlanc, 2007).

Based upon extrapolating data from the National Mastitis Council pertaining to the cost of mastitis in dairy cows, the average Canadian herd is at risk of losing ~\$370 per cow per lactation due to sub-optimal udder health:

‣ Reduced production -	\$235.62
‣ Discarded Milk -	\$ 20.35
‣ Replacement Cost -	\$ 80.68
‣ Extra Labour -	\$ 0.36
‣ Treatment Costs -	\$ 14.64
‣ Veterinary Services -	\$ 5.35
‣ Reproductive Loss -	<u>\$ 13.80</u>
‣ TOTAL -	\$370.80

Improved udder health represents another area of significant opportunity on many dairy farms.

There is also a significant opportunity to improve replacement rearing costs on many dairy farms. Figure 3 details heifer rearing costs on an average Canadian dairy farm.



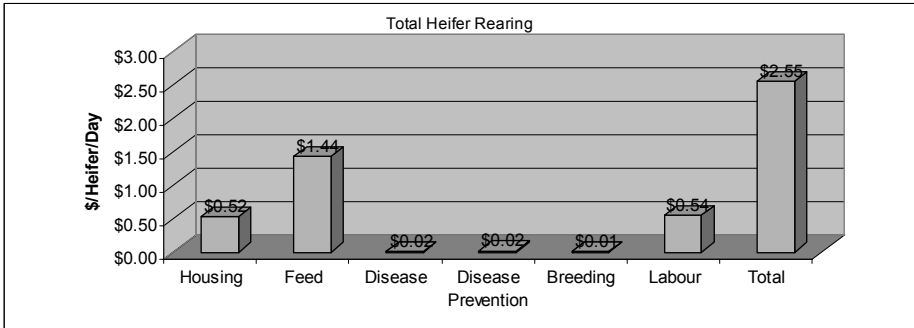


Figure 3a. The Economics of Heifer Rearing

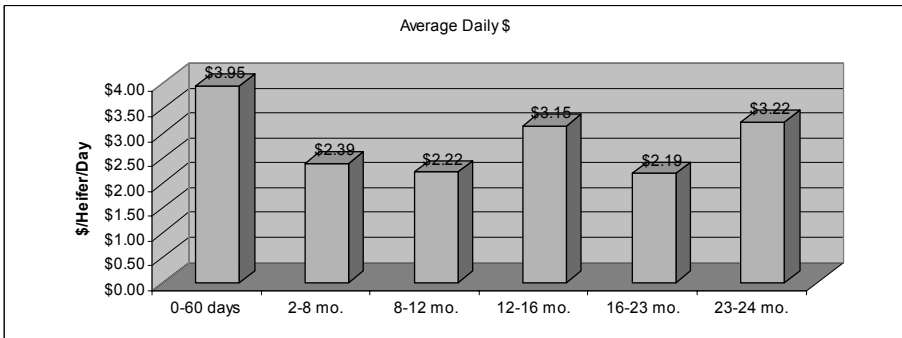


Figure 3b. Heifer Rearing Costs by Stage of Development

Heifer replacement rearing costs are ~\$2.55 per heifer per day on the average Canadian dairy farm, with feed, labour and housing contributing 98% of this cost. Disease prevention and treatment costs are negligible and disease prevention and early detection and treatment represent an opportunity to improve heifer rearing costs by ~\$200 per heifer, both in reduced mortality and increased productivity. Based upon current heifer rearing costs averaging ~\$2.55 per heifer day, in order to provide a 5% ROI on quota with current milk price, a heifer needs to produce ~25,000 litres of milk at a \$0.35/litre cost of production (COP) to achieve breakeven.

It is impossible to manage what you do not measure. Key performance indicators (KPI) relative to the individual farm should be determined and monitored over time, particularly to measure outcomes after management changes have been implemented. However, as a cautionary note, it is important to ensure changes in KPI's are real and not just due to the normal fluctuation one would expect to see in the day to day operation of the farm.

## ■ Financial Benchmarks

While there are numerous financial benchmarks, the following represents some of the primary benchmarks used by financial institutions:

- Expense Ratio (< 60%)
  - (cash costs of production before (finance costs, management draws, amortization)) / gross revenue
  - COP <\$0.35/litre (\$0.35/\$0.71 = 49% expense ratio)
  - COP of \$0.35/litre includes labour
- Enables:
  - Management draws of \$0.06/litre and
  - ~\$0.25/litre for debt servicing
  - ~\$2.10 per litre amortized debt
    - At 7% interest results in a blended amortization of 12.5 years
- 120% Debt service coverage
  - ~\$0.05 per litre excess cash flow ( $\$0.25 \times 20\% = \$0.05$ )

## ■ The Impact of Cost Structure

In addition to determining cost of production, it is important to determine if costs are variable or fixed, particularly during expansion as fixed bank charges can increase dramatically so it is imperative to lower variable costs of production. The following example (Table 2, Figures 4 and 5) will help to explain the importance of this concept:

**Table 2. The Impact of Fixed versus Variable Costs on Breakeven**

Herd	Number of Cows	Current Production	Fixed Costs (Bank, Cost of Living, Insurance, Property Taxes)	Variable Costs (\$/litre)	Milk Price	Breakeven Production (litres/cow/lactation)
Expansion	100	10,000	\$350,000 (\$0.35/litre)	\$0.25	\$0.71	7,609
Status Quo	60	8,500	\$102,000 (\$0.20/litre)	\$0.45	\$0.71	6,538

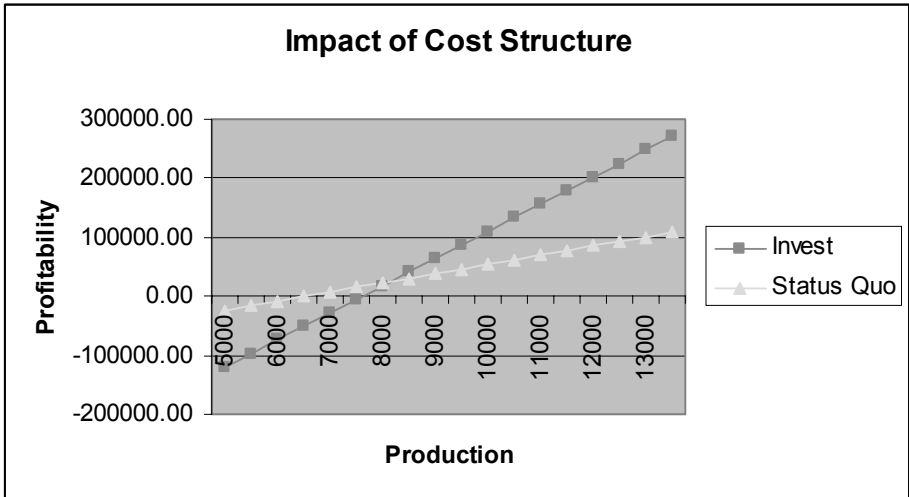


Figure 4. The Impact of Cost Structure on Profit Margin

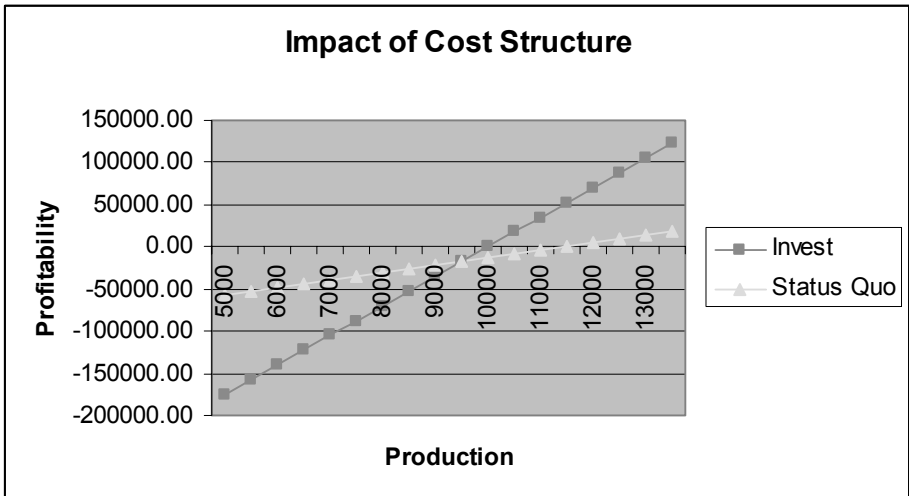


Figure 5. Impact of Cost Structure at a 15% decline in Profit Margin

At a 15% decrease in profit margin, the herd with the high variable costs must raise production per cow significantly (11,500 litres/cow/year) to breakeven, whereas the herd with the lower variable costs achieves breakeven at the current 10,000 litres per cow per year production.

## ■ Strategic Planning for Expansion

The following must be taken into consideration:

- ▶ Are current production/profitability constraints due to facilities or management capability? If the answer is management capability, then address these issues before considering expansion.
- ▶ Is the management able/ready to manage a larger herd? In many cases, expansion results in hiring additional labour and one has to consider availability, cost and the development of a human resource plan.
- ▶ Excellent cow management ≠ excellent people management. Excellent cow managers are often meticulous in details related to the management of the herd and often hired labour do not meet their expectations. A well designed human resource plan and the development of standard operating procedures can often alleviate this issue.
- ▶ Will the replacement herd match the cull rates of the larger milking herd? This is the most cited reason for expansion failure in the US dairy industry. Expanding herds will purchase cows to fulfill predicted production. However, cull rates often exceed expectations and the current heifer inventory invariably will not meet replacement demands forcing the purchase of additional cows from cash flow.
- ▶ Will cash flow still be positive even with a decreased profit margin? Generally expansion adds considerable long-term debt to the farm and, although initial cash flow is positive, future reduced profit margins can lead to a cash flow deficit, often requiring debt restructuring.
- ▶ Is there a transition plan (other siblings, etc)? Dairy expansion generally results in a long-term commitment to the dairy industry so it is imperative that a well-planned succession plan accompanies expansion.
- ▶ Consider monthly cash flows. During expansion cash outflows will exceed cash inflows and often delays, either construction or the purchase of required quota or cattle, occur resulting in a short to mid-term cash crunch. Monthly cash flows should be developed so that a sensitivity analysis on cash flow can be completed.
- ▶ Don't forget about the 15% transfer assessment. In some regions in Canada, there is a 15% transfer assessment on quota. If expansion does not meet expectations, the selling of quota, minus the transfer assessment, will not reap sufficient funds to meet financial commitments.
- ▶ Will land base support the larger herd from a production standpoint and nutrient management? If not, is there a local, cost-effective land base available?
- ▶ Tax implications – quota purchases can lead to income tax implications

as quota depreciation is often less than principle payments.

- ▶ Get the big numbers correct! – It is important to accurately forecast herd performance and larger operating expenses, such as feed and labour.
- ▶ Be sure there is a cost-effective, trained labour pool available.

## ■ Human Resource Management

A human resource management plan is an important component of a strategic plan for today's dairy farm. Areas to consider are:

- ▶ Sourcing
- ▶ Training
- ▶ Job description
- ▶ Advancement
- ▶ Pay and incentive plan
- ▶ Retention plan

An available, cost-effective, trained labour force is a significant issue for many Canadian dairy farms and, based upon demographics, likely to become of increasing importance. Developing a strategic plan to attract, train, promote and motivate employees is key to long-term employee retention and achieving both production and financial goals.

With respect to incentive plans, ensure that incentives are tied to outcome measures. For example, some herds have implemented an incentive plan targeted to increase the number of cows bred in a timely manner expecting an increase in reproductive performance. However, in some cases reproductive performance actually declines due to poor candidate selection for breeding. In this case it would be preferable to provide an incentive for improved 21-day pregnancy risk rates, the desired outcome of the incentive plan.

In areas with a shortage of cost-effective labour, many dairy producers are adopting technologies that reduce labour input costs, for example, robotic milking.

## ■ Succession Plans

Developing a succession plan is a key component to long-term survivability of the dairy farm and an area that is often overlooked. This process can be very complex, particularly in multiple sibling families when only one sibling is remaining to carry on the dairy business. Some considerations include

(Bossy, 2006):

- ▶ 'Sweat' equity – in many circumstances, the sibling choosing to carry on the dairy operation makes numerous sacrifices, such as considerable hours invested in the farm with lower remuneration that would be expected in a similar off-farm job and this should be accounted for when evaluating their ownership interest in the farm
- ▶ 'Lifetime Annuity' of investment in siblings that leave the farm - In many cases, the dairy pays for or supports the development or education of siblings that choose to leave the farm. The lifetime value of these investments needs to be calculated and equalized when treating the remaining siblings fairly.
- ▶ 'Line in the Sand' – The equity value of the dairy operation should be determined when one sibling decides to remain on the dairy operation. An increase in value after that point in time is in part due to the efforts of the remaining sibling and should be accounted for.
- ▶ Real versus inflationary growth – Only real growth should be accounted for in determining the equity value of the dairy operation at the time of transfer to the next generation. Inflationary growth, for example quota value, should not be included when determining the value of the dairy operation for purposes of settling the estate with siblings that have left the farm.

In addition to value determination, another important aspect of succession planning is 'turning over the reins'. It is important that increasing management responsibilities are transferred to the new management team on a timely basis. "Learn to do by doing", the 4-H motto is an important method of increasing understanding of the complexity of managing a dairy operation in today's volatile environment. In many cases, the error is that the younger generation is not given responsibility in the area of finances and therefore is "handicapped" when they need to assume this responsibility later in life. Managing finances is as important as managing a cow.

## ■ Summary

Long-term strategic plans for the dairy are complex and need to be a 'living' document and updated on a regular basis to ensure they are current and pertinent. In many cases the long-term strategy is related to the person, not the business. For example, managers tend to view strategy in terms in their own personal evolution, not the evolution of the business and this process hampers the long-term strategic development for the dairy.

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