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## Understanding your *Profitability Report* *Herd Summary & Cow Lifetime Profit*

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The Profitability Report provides a summary of the estimated profitability<sup>1</sup> of animals in the herd. Estimated profit is calculated for each cow at 1<sup>st</sup> calving and at the end of each lactation. Profit is expressed as \$/cow. There are two sections to the Profitability Report, the Herd Summary and Cow Lifetime Profit.

Herd Summary consolidates the individual cow profitability data provided on the Cow Lifetime Profit report into group averages. This summary allows for the efficient analysis of results and the comparison of herd averages to provincial benchmarks. *Note: Cows are grouped by their number of completed lactation(s) where “lactation” includes the dry period. (Example: a cow that has calved twice is considered to be in her 2<sup>nd</sup> lactation until she calves for the 3<sup>rd</sup> time).* Care must be taken when looking at the overall herd results as they combine the profit per day of life together with the herd demographics. We can indicate an excellent performance for each group yet a disappointing herd result if the proportion of cows having many lactations is very low. The cows that have not completed a first lactation are not included in this average and thus a high herd turnover rate has less impact than we might expect.

The Cow Lifetime Profit report ranks the cows in the herd using one of the most important performance criteria – profit! The report estimates the profitability of each cow in the herd at 1<sup>st</sup> calving and at the end of each lactation. The calculated value of profit (\$/cow) for each animal takes into account her ability to produce milk as well as her ability to get in calf and begin producing again.

Profitability is calculated by estimating revenues for each cow and then subtracting rearing, maintenance and production related expenses. The value of milk produced is estimated based on average provincial with-in quota milk prices from the past year. Rearing costs apply to a calving at 24 months. To this we add indirect<sup>2</sup> and feed costs for each day over 24 months. On the cow side, indirect costs and feed costs specific to lactating cows are applied. For dry cows, the same daily costs are used as for heifers over 24 months old. Given that milk cannot be produced without owning quota, an opportunity cost equivalent to the interest on the quota value is subtracted from the milk revenues. Economic parameters have been set in collaboration with *Groupes conseils agricoles du Québec (Agritel Web)*.

### **Profitability Report – Herd Summary**

The Herd Summary report has three sections:

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<sup>1</sup> We talk about estimated profitability because we use standardized costs for all herds, as we do not have the real costs for each herd.

<sup>2</sup> Bedding, building and equipment maintenance, salaries, general costs, interest paid, amortizations, salary for herd owner and family members.

## 1. Herd Averages Table

The group average information for profit and age based on lactation number is displayed. Vertical analysis of the group averages shows how groups of animals have performed through various stages of your management system over time. This information can be used to analyse the impact on per cow profitability from management changes such as: improvements in heifer rearing; changes to animal housing; a new reproduction management program. Conversely, you can see the economic impact of using below average forages or that reproductive problems can cause in your herd.

## 2. Herd Percentile Rankings

The bar graphs illustrate the herd average information relative to other herds in the province. The graphs show how each lactation group in the herd compares for profitability and cow age and illustrate areas of proficiency as well as potential areas of improvement.

## 3. Provincial Benchmarks

Provincial Benchmarks for all herds on DHI are provided for comparison, analysis, and goal setting.

## Profitability Report – Cow Lifetime Profit

Cow Lifetime Profit lists the profitability of all animals that have calved once and were present in the herd during the last DHI test of the year or on the test date appearing on the report. Animals are listed in four groups: those that have calved only once; those that have completed one lactation; those that have completed 2 lactations; and those that have completed 3 or more lactations.

Cows in each group are ranked by Profit (\$/cow), where the cows at the top are most profitable; those at the bottom are the least profitable.

The **1<sup>st</sup> calving** profit value represents the cost (negative profit) of rearing the animal from birth to calving. This number is provided for all animals based on their age at first calving (also shown) and heifer rearing costs.

The **1<sup>st</sup> lactation**, **2<sup>nd</sup> lactation** and **3<sup>rd</sup> lactation** columns display the age at the end the lactation and the estimated profitability for each animal that has completed one or more lactations.

In the **Lifetime** column, Profit (\$/cow) displays the calculated profit for animals that have completed 4 or more lactations (calved 5 or more times) to the end of their most recently completed lactation. Profit/ Day shows the calculated profit value for each day of life. This is calculated for all animals in the herd having completed one or more lactation(s).

The profitability values calculated for each cow will change each time the report is printed to show how the animal compares using current prices. This will allow for accurate comparisons between groups of animals over time.

## Cost estimates

The estimated costs of breeding and maintenance are periodically updated, and figures are adjusted according to the dairy breed. It is particularly important in regards to the rearing costs, which vary

from one breed to another. Note that we deduct the value of culled cows such that we are considering only the net replacement costs in our profit calculations. Feed costs are based on kg of components produced rather than kg of milk. Since 2015 the calculations are applied separately on the fat and protein produced using the same approach as for the new genetic index Pro\$. A part of the feed consumed by the cow in lactation is used for her maintenance and not for milk production. The value of these feeds (essentially forages) is included in the indirect daily costs for cows in lactation. Interests applied to the value of the quota are also adjusted according to the evolution of the prices and interest rates.

We wanted to better reflect the differences between breeds since 2015. As a result, the indirect expenses for heifers, dry cows and cows in lactation were adjusted for each breed group based upon the information available. For example, a smaller cow occupies less barn space and this translates into a lower housing cost.

## Financial Analysis

A positive profit per day of life means that the cow managed to cover all the costs including the time invested by the producer since her birth and generated a return to make profitable the owner's investment in his dairy enterprise. Note that in order to permit the comparison of the economic performance between cows we calculate the value of all milk produced since the start of the first lactation using the milk price of the most recent year. We can then directly compare the profitability of our 2016 first lactations with the first lactations started in 2014 without having to care about the difference in milk price received during these two years. Thus, it is not a history of the profit realized by a cow that we are looking at but rather how its' productive life compares with other cows in the herd and in the population of herds under similar economic conditions. We want to see how the cow's age at calving, cumulative production of milk solids and length of her dry periods influenced her profitability.

We received many comments because of the large number of negative results observed in 2015 and 2016. By analyzing our system based upon the average costs per cow per day, we determined that the less productive herds had lower than average costs for inseminations, bedding, veterinary services etc. In fact, these expenses tend to vary as a function of the production level of the cows rather than remaining fixed. We thus decided to reduce the indirect costs per day by determining them using a lower level of production. In addition, the average revenue related to the milk quality bonus and the solids not fat (SNG) bonus now are taken into consideration in our calculations, given that they represent a part of the milk revenue. These changes allow us to better reflect the reality seen on the farm. However, we will never be in a position to claim that this report matches the actual profit realized by the farm and this has never been the objective.

There is little difference in the net rearing costs of the different breeds due to the higher cull cow value for the larger breeds. The method of calculating feed costs isolates the cost of producing a kg of butterfat from that to produce a kg of protein. For 2017, we see a decrease of \$ 0.02 / kg fat and an increase of \$ 0.27 / kg protein bringing us back to the values in 2015. The cost of quota saw a very slight decrease.

*To highlight for 2017: the average price of the milk components (fat, protein and LOS) tended to stabilize and remained comparable with last year. Given this situation, it is not surprising once again, to find many herds having a negative profit per day of life. This does not mean in any way that these*

*herds are bankrupt: the amount of depreciation expenses will not be put aside to permit the eventual replacement of buildings and equipment and the owners accept that the capital that they have invested in their farm does not provide a return during these difficult years. It does not put the owners out on the street but we understand that the next investments to modernize the buildings will be difficult to make.*

## **Interpretation**

A profit of \$0.30 per day of life is equivalent to a net profit after paying interest of 2.8 % on all the value of the negotiable quota of the farm. This money serves to pay for the \$11,400 per cow (2016 - 2017) invested in the buildings, equipment and animals on the farm.

A 4<sup>th</sup> lactation cow with a profit per day of life of a \$0.30 will have generated a return on capital of 1 % on these investments:  $(\$0.30 \times 365 \text{ days}) / \$11,400$ . We can then say that the profitability report allows you to measure the average return on your investments as well as to identify your best investments.

## **Limits**

The profitability report is not conceived to analyze herd specific situations (such as feed or other expenses) as standard values (group averages) are used in the calculations.

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