

Maximizing Your Milk Cheque - Striving to Be Profitable and Efficient

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Many farmers are increasingly being faced with the challenge of what to do with their extra milk. For the past 8 months, farmers who exceed their monthly quota have been penalized, while farmers who have undercredits are limited to only one extra days worth of quota without penalty. Buying extra quota has also been challenging, as the amount of quota on the exchange has been steadily decreasing, while the number of bids for quota is at an all time high. Therefore, a difficult decision had to be made between whether to dump milk or to pay for it to be shipped.

As of March, there will no longer be a penalty for over production, and those with undercredits available will now be able to ship two days over quota each month. Although this is an improvement for those with undercredits, it doesn't help producers who have been losing revenue due to overproduction of milk.

Within the fluctuating industry, the question is, how can you get more value for your milk? One way to maximize your milk cheque is to look at your solids non-fat ratio (SNF ratio). Your SNF ratio is the ratio of your protein, lactose and other solids (ex.minerals) compared to butterfat. The monthly ratio cap of 2.35 kg SNF to 1 kg of butterfat was implemented in 2013. However, not all producers have taken full advantage of the ratio.

The November 2018 provincial average component results published in the January 2019 *Milk Producer* recorded a 4.22% butterfat, 3.28% protein and 5.93% lactose and other solids (LOS). These results demonstrate that the average SNF for many Ontario dairy herds sits around 2.18.

$$SNF\ Ratio = \frac{kg\ Protein + kg\ LOS}{kg\ Butter\ Fat}$$

Below is the calculation for SNF if you shipped 100 L of milk using the November 2018 provincial component averages.

$$SNF\ Ratio = \frac{3.28\ kg\ P + 5.93\ kg\ LOS}{4.22\ kg\ BF} = 2.18$$

Here are a few examples showing the differences in price per kilogram of butterfat if you can maximize your SNF ratio to be as close to the 2.35 cap as possible. The following example is based on a farm with 100kg of quota holdings using November 2018 milk prices: BF \$11.03/kg; Protein \$8.52/kg; LOS \$1.55/kg and November average components for Ontario dairy farms.

$$\text{SNF} = 2.18^* \begin{cases} \text{BF} - 4.22\% \\ \text{Protein} - 3.28\% \\ \text{LOS} - 5.93\% \end{cases} \begin{cases} \frac{4.22\text{kg}}{4.22\text{kg}} \times 100\text{kg} \times \$11.03 = \$1103.00 \\ \frac{3.28\text{kg}}{4.22\text{kg}} \times 100\text{kg} \times \$8.52 = \$662.22 \\ \frac{5.93\text{kg}}{4.22\text{kg}} \times 100\text{kg} \times \$1.55 = \$217.81 \end{cases} = \$19.83/\text{kg BF}$$

*Ontario Provincial SNF average for Nov. 2018

$$\text{SNF} = 2.26 \begin{cases} \text{BF} - 4.10\% \\ \text{Protein} - 3.29\% \\ \text{LOS} - 5.95\% \end{cases} \begin{cases} \frac{4.10\text{kg}}{4.10\text{kg}} \times 100\text{kg} \times \$11.03 = \$1103.00 \\ \frac{3.29\text{kg}}{4.10\text{kg}} \times 100\text{kg} \times \$8.52 = \$683.68 \\ \frac{5.95\text{kg}}{4.10\text{kg}} \times 100\text{kg} \times \$1.55 = \$224.94 \end{cases} = \$20.12/\text{kg BF}$$

$$\text{SNF} = 2.35 \begin{cases} \text{BF} - 3.94\% \\ \text{Protein} - 3.30\% \\ \text{LOS} - 5.97\% \end{cases} \begin{cases} \frac{3.94\text{kg}}{3.94\text{kg}} \times 100\text{kg} \times \$11.03 = \$1103 \\ \frac{3.30\text{kg}}{3.94\text{kg}} \times 100\text{kg} \times \$8.52 = \$713.60 \\ \frac{5.97\text{kg}}{3.94\text{kg}} \times 100\text{kg} \times \$1.55 = \$234.86 \end{cases} = \$20.51/\text{kg BF}$$

100kg Farm: Monthly Cheque (filling quota; no extra days filled; 30 day month)

100kg shipped daily at 2.18 = \$59,490

100kg shipped daily at 2.26 = \$60,360 \$870 more than 2.18 SNF ratio

100kg shipped daily at 2.35 = \$61,530 \$1170 more than 2.26 SNF : \$2040 more than 2.18 SNF

If the average Ontario dairy producer's SNF is at 2.18, and they could increase their SNF to 2.35 while still fulfilling quota shipments, they could be earning an extra \$24,480 per year on average. It is extremely important to realize that these calculations are based on still filling your quota.

So... how can you adjust your SNF?

Given there are three parts to formulating the SNF ratio; altering any three of the components; butterfat, protein or lactose and other solids can change the ratio. Butterfat is by far the easiest component to adjust. Although there are many factors that can influence butterfat such as the time of year, heat stress and overcrowding; through nutritional management alone, butterfat can be changed by a whole percentage point in a relatively short period of time. Protein on the other hand tends to be less variable. It can change by 0.1-0.4 percentage points over the period of a year and through nutritional management. LOS is also very consistent.

Basic Principles to Increase Butterfat

Increase forages, therefore increasing the production of acetate and beta-hydroxybutyrate in the rumen, which is needed for milk fat synthesis

- Addition of fat enhancing products to the diet such as palm fat

Basic Principles to Decrease Butterfat

- Increase readily digestible non-fibre carbohydrates (concentrates), therefore increasing propionic acid production in the rumen which encourages metabolism that is in opposition to milk fat synthesis

Generally, if the SNF is less than 2.35, then the easiest way to increase the SNF ratio will be to drop butter fat, knowing that protein and LOS change very little.

Disclaimer:

It is important to note that maximizing your SNF ratio if you are not filling quota may not actually give you a larger milk cheque. It is important to first ensure that your quota filling does not suffer if you are attempting to change your components.

Dropping butterfat dramatically by adding too many concentrates without enough effective fibre can lead to a cow with an unhealthy rumen and have negative secondary effects such as acidosis and laminitis.

Increasing your butterfat dramatically by adding too much forage without enough energy can lead to a significant drop in milk volume and can also have negative secondary health implications such as poor reproduction and skinny cows that are unable to milk and maintain their body weight.

Using your SNF ratio as a tool to refine your nutritional program and management practices can be an effective way to maximize your milk cheque. Based on the average SNF ratio in the province many farmers could possibly increase their monthly earnings by investigating the opportunities surrounding their SNF/BF ratio.

It is important to keep in mind that milk components, like MUNs and herd management practices vary quite differently from farm to farm. There is no one ideal ratio or one correct target for butterfat, protein and LOS. Work closely with your dairy herd advisors to see if making adjustments to your SNF ratio will help increase your efficiency and profitability while still maintaining production and most importantly, maintaining a healthy herd of cows.