



Everything you need to know about the Transition Cow Index in 10 points

How does the Transition Cow Index work?

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You receive your results for the last test. You open the Transition Cow Index™ report. And what are you looking for? Here are the key points you should focus on when opening your next TCI report.

The TCI™, developed by Ken Nordlund at the University of Wisconsin, has been offered by Valacta since 2010. The principle is simple: a 12-factor equation is used to predict how much milk a cow is expected to produce during her 305-day lactation. At the cow's first test date, the actual projected 305-day milk yield is compared with this prediction. If the cow's production is exactly as predicted, the TCI is 0. If the cow produces more than predicted, the TCI will be positive; if less, then the TCI will be negative. A TCI value can be calculated for all second and greater lactation cows that are between 5 and 39 DIM at their first test day.

The TCI is an objective way of evaluating the start of lactation for each of your cows. Since a good start to lactation is generally a promising sign for a good lactation, an increase in the TCI suggests that your cows will have a higher milk yield over the coming lactation. Generally speaking, a 100-point increase in your herd's average TCI corresponds to a yield increase of 93 kg of milk per cow for 305 days of production (Valacta data, 2014).

1 Pink line: This represents the herd's 90-day rolling average. It allows you to quickly assess your herd's performance and see if the average has changed lately (For example, to evaluate a response to a management or feeding change).

2 Numbers along the top of the graph: These represent the 90-day rolling average for each of the 12 previous months. The most recent score appears on the right. The goal here is a high number, every month! Note: For herds of 250 cows or more, this value is a 30-day average.

3 Dispersion: This offers an overview of individual cow scores. Even with a very high average, the wide scattering of dots suggests competition among the cows with some cows that are getting off to a great start, while others are falling

behind.

Sometimes, the results show a herd has a similar average but a totally different dispersion. In this case, a high number of calvings in late 2016 increased competition. At the start of 2017, however, fewer cows in the dry cow or fresh cow pen meant less competition, and the dots were much closer together, indicating rigorous management.

4 Average annual TCI: This represents the average score for all the cows that have calved in the past year. Aim for the highest score possible!

5 Comparable statistics: These allow you to compare your farm with the other farms in the province. The current average for Quebec is slightly over 200, but varies from -2348 to +1796.

6 Percentage of cows with a negative TCI: While often overlooked, this number is critical because it allows you to assess your potential to improve the transition in your herd by making a few

management or feeding changes. It is often inversely proportional to the annual average, but is quite variable. The current Quebec average is 38 per cent, but varies from 0 to 100 per cent. The target here is the lowest number possible.

7 Number of cows in second or greater lactation that have calved during the previous 12 months: This is simply a reminder of the number of cows in the herd for which it would have been possible to calculate a TCI during the past year. Because the factors in the equation require data from the previous lactation, a TCI cannot be calculated for first-lactation cows.

8 Proportion of fresh cows in second lactation or greater with a TCI: When this number is under 100, it is usually because some cows were outside the range of 5 to 39 DIM at their first test. Hence, the greater the interval between tests, the greater the number of cows outside this range. For herds tested 8 to

10 times per year, this value is generally between 75 and 90. A high value means the evaluation represents all of the cows in the herd.

9 Graph of first test protein-to-fat ratio: A protein-to-fat ratio below 0.75 suggests excessive mobilization of body reserves and could point to possible ketosis. However, this ratio has become less relevant as it lacks precision compared with the results provided by other tools like Ketolab (Valacta) or on-farm tests, which measure ketone bodies directly. These later tests are strongly recommended to supplement the TCI information.

10 Fresh Cow List (not shown): This report provides more information on individual cow performance and TCIs. It also presents performance data for current test fresh heifers for which a TCI could not be calculated as there was no information for a previous lactation, as well as early lactation removal from the herd.

The points to monitor are explained.

