

Leveraging herd management, genetics, and DHI by integrating all three data types into a new transition cow decision tool

Fourdraine Robert^[1], Miles Asha^[1]

[1] DRMS

Many single measurements can monitor a herd's transition cow program like milk yield, gestation length, dry period length, calving ease, abortions, fresh cow mastitis, etc. However, combining all these into a single, easy to understand measure is more efficient, informative and easier to track over time. The new Fresh Cow Index (FCI) is a single measure that was developed by Dr. Albert DeVries at University of Florida in collaboration with Dairy Records Management Systems (DRMS).

FCI is the Actual Energy Corrected Milk (ECM) on first testday divided by the Predicted ECM times 100. FCI is calculated for cows with a first testday between 5 and 40 days in milk. The predicted ECM is calculated using 25 different cow variables that cover genetic, production, udder health and reproduction data. Data used to calculate FCI is obtained from DHIA milk testing, the Council on Dairy Cattle Breeding (CDCB), and DRMS data.

Analysis of 1 million first parity cows broken out by FCI ranges of 10 FCI starting at <70 up to >=130 show that 305 d completed lactation production ranges from 9560 kg ECM (FCI<70) up to 12400 kg ECM (FCI>=130). Similarly, culling rates expressed as cow being sold or died in that lactation went down from 33% (FCI<70) to 18.1% (FCI>=130). Similar trends were observed in second lactation cows. A secondary analysis evaluated repeatability of lactation performance. Specifically, the likelihood cows who underperform (FCI<100) in a previous lactation would repeat and underperform in the next lactation, as compared to those who performed as expected (FCI>=100) and perform as expected in the next lactation. Data showed that poor performance 1st lactation cows (FCI<70) in their first lactation had a 54.1% likelihood they would underperform (FCI<95) in the second lactation while cows that had an FCI>=130 had only a 33.6% likelihood they would underperform in the second lactation. Additional analysis for health events showed similar trends with low FCI cows experiencing more health events later in lactation while cows with higher FCI values experiencing fewer health events. FCI can be a valuable measurement to evaluate a herd's transition cow program over time by bringing together multiple sources of data into one single measure.