

Stabilizing Fertility Traits

Daughter Pregnancy Rate (DPR), Cow Conception Rate (CCR) and Heifer Conception Rate (HCR) are terms dairy producers commonly refer to and traits they select bulls with to use in their herd. In the past couple of years, questions have been raised as to why there are so many increases and then decreases in these fertility traits depending on the season of the genetic run – April, August or December.

The August 2019 genetic evaluations are bringing a new stability to fertility traits in genetic predictions for these traits. Improvements have been made by the scientists at Animal Genomics Improvement Laboratory (AGIL) and Council on Dairy Cattle Breeding (CDCB) to address the fluctuations from genetic run to genetic run.

In the most recent edition of the CDCB Connection, the organization reported the following: “The good news is that after a complete revision of the fertility evaluations, which included several improvements over the last couple of years, the scientists at AGIL and CDCB have uncovered the reasons that caused seasonal fluctuations. The primary reason was that the seasonal grouping was derived previously from the heifers’ breeding dates instead of cows’ breeding dates. The less-than-exciting news is now that the issue has been discovered and rectified, there will be changes coming one more time, in the August 2019 run.”

Testing the new model changes revealed the seasonal variability in previously published (official genetic summaries) has been removed.

What is the impact for the Jersey breed?

Fertility traits account for 11% of Jersey Performance Index (JPI). DPR contributes 7% while CCR and HCR are included at 2% each in JPI.

To the right is a chart showing the change in JPI points from April 2019 to August 2019 in bulls due to the change in PTAs for DPR, CCR and HCR.

CDCB summarized the actual changes in Predicted Transmitting Abilities (PTA) for the fertility traits. The changes are derived from a comparison of the official April 2019 Active A.I. and Genomic Bulls with their August values using the updated model.

To add a Jersey perspective, AJCA staff calculated the impact on JPI using the average changes in DPR, CCR, and HCR. On average, the JPI of the April 2019 Active A.I. bulls decreased by approximately five (5) JPI points, while the Genomic Tested Young Sires

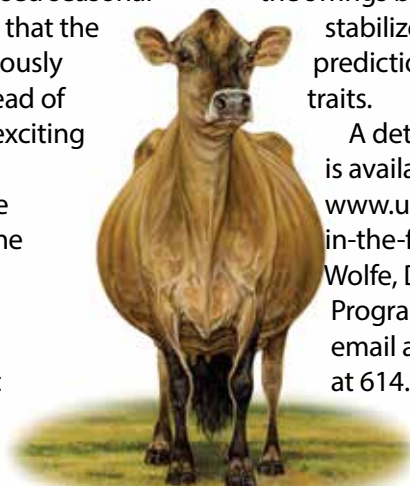
decreased by about six (6) JPI points in the August evaluations. Individuals may be impacted to a greater or lesser degree.

While the August evaluations show lower values, the swings between genetic evaluations should stabilize and result in more accurate predictions of the true genetic value for fertility traits.

A detailed article explaining the changes is available on the CDCB website at: <https://www.uscddb.com/cddb-changes-coming-in-the-fertility-evaluations/>. Or contact Cari Wolfe, Director of Research and Genetic Program Development at the AJCA, via email at cwolfe@usjersey.com or by phone at 614.322.4453.

Fertility Trait	Active Bulls	Genomic Bulls	Active JPI Points	Genomic JPI Points
DPR	-0.5	-0.61	-2.40	-2.92
CCR	-1.63	-1.72	-2.1	-2.22
HCR	-0.22	-0.33	-0.33	-0.50

Table 1: Changes in PTAs for DPR, CCR, and HCR between April 2019 and August 2019 with corresponding Jersey Performance Index (JPI) point change.



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