



## Update on the April 2025 Base Change

*The change in the April 2025 genetic evaluations due to the Base Change will be less than previously announced.*

CDCB introduced two additional changes to their genetic evaluations that were not included in their earlier estimates of the April 2025 Expected Base Change. They are:

- A. Updating their estimates of Expected Future Inbreeding (EFI) to a newer younger base.
- B. Updating their adjustment for changes in Standard Deviations over time.

In the US, PTAs are adjusted for how much an animal will raise or lower future inbreeding. To do this, an animal's Expected Future Inbreeding (EFI) is calculated. EFI is the average inbreeding expected for an individual animal if they were mated to a random sample of animals from the population. The EFI of the animal is then compared to abreed average EFI determined by the base population. PTAs are then adjusted based upon the difference of the animal and breed average ( $\text{EFI}_{\text{animal}} - \text{EFI}_{\text{breed}}$ ). The PTAs of animals that are more related to the breed, will have a higher EFI and their PTAs are adjusted down. While animals who are less related to the breed have lower EFIs and their PTAs are adjusted up.

A key component in the inbreeding adjustment is the value that's used for the breed average EFI. In the five years between 2015 and 2020, the EFI of cows increased from 7.5% to 9.4%. In the new April 2025 calculations, the higher breed average EFI of 9.4% is used in accordance with the new base population. By raising the breed average EFI, the difference between an animal's own EFI and the breed average EFI has decreased

This means that the adjustment for inbreeding on the animals PTA is smaller, and thus their **final PTA is higher**.

The higher breed average EFI being used in April 2025 has lowered the inbreeding penalty and raised PTAs resulting in PTAs that are higher than what was expected due to the Base Change. In other words, breeders expecting to see a 750 pound decrease in PTA Milk will see a drop of 650 pounds on average.

The second newly announced change was the adjustment for increasing Standard Deviations over time. The reason is that as production levels increase, the range i.e., the standard deviation between high and low animals increases. In previous adjustments for Standard Deviation, all production traits were adjusted the same and all breeds used the Holstein values. This time, milk, fat and protein were adjusted separately, and each breed used its own values.

	Expected Change	Actual Change
Milk	-750	-650
Fat	-44	-38
Protein	-29	-26

For the Holstein breed, the PTA for Fat was most affected. PTAs for fat were expanded by a factor 0.042 of the larger standard deviation for fat, Therefore, the drop in PTAs due to the base change was less than expected. That is, The PTAs for Fat were expected to drop by 44 pounds. The actual decrease is 39 pounds.

Breeders who were expecting to see a certain level of change (drop) in the new April 2025 genetic evaluations will be pleasantly surprised that the changes are not as large as anticipated. Many animals will have higher TPI values as the anticipated base change was not as large as expected. On average TPIs will go up around 70 TPI points, with higher increases seen for the higher TPI animals. A complete summary of the April 2025 Base Change can be found at [CDCB - Genetic Base Change](#))