Holstein Association USA Genetic Advancement Committee Recommendation

February 18, 2026

The following recommendation was made at a Genetic Advancement Committee meeting held on February 17, 2026. It was approved at the HAUSA Board of Directors Meeting on March 27, 2026. This information is being shared in accordance with the publication requirements outlined in HAUSA's Disclosure Policy.

TPI® Formula Update

The committee recommends updating the weightings for PTA Protein and PTA Fat within the Holstein Association USA Total Performance Index® (TPI®). Specifically, the committee recommends:

- **Increasing** the weighting on PTA Protein from 19 to 24
- **Decreasing** the weighting on PTA Fat from 19 to 14

This update adjusts only the relative emphasis placed on PTA Protein and PTA Fat; no other TPI® trait weightings would be changed.

This adjustment is intended to better align TPI® with current and emerging trends in milk pricing, as many dairy producers are increasingly compensated based on protein yield. The committee believes this market trend is likely to persist into the future, and that TPI® should continue to reflect the economic realities faced by dairy farmers. The proposed update results in a very high correlation (0.9978) between the revised TPI® formula and the current version, indicating that the change represents a refinement, rather than a fundamental shift, in how animals are ranked.

This change will be implemented with the April 2026 official genetic evaluation.

Details on the TPI® formula can be found at: www.holsteinusa.com/genetic_evaluations/ss_tpi_formula.html, and answers to some Frequently Asked Questions can be found on the following page.

TPI Formula Update

Frequently Asked Questions — April 2026

Q: When will updated TPI values be available?
All published TPI values will be recalculated under the new formula beginning with the April 2026 genetic evaluations.

Q: What change was made to the TPI formula?
Beginning with the April 2026 genetic evaluations, the weight assigned to PTA Protein in TPI has increased from 19% to 24%, and the weight assigned to PTA Fat has decreased from 19% to 14%. The combined production weight remains 38% of TPI. No other traits were affected.

Q: Why did Holstein Association USA make this change?
This change was made to help the Holstein breed stay competitive as the dairy market continues to evolve. Genetic selection decisions made today take several years to show up meaningfully in dairy herds. The Genetic Advisory Committee (GAC) reviewed milk market trends and Holstein breed data and agreed that adjusting the balance between protein and fat now makes sense for the long term.

The trends driving this thinking include:

- U.S. butterfat production has grown dramatically, reaching a record average of 4.29% in 2025, rising at a rate roughly 6 times faster than New Zealand and the EU. As fat has risen faster than protein, the protein-to-fat balance in milk has declined, which matters for efficient cheese making.
- Over half of U.S. milk goes to cheese manufacturing, where protein plays a key role in both yield and quality. Demand for high-protein dairy products continues to grow.
- Holstein breed data show the protein-to-fat ratio has declined from 0.85 to 0.77 since 2007. Without a change in selection emphasis, that trend is expected to continue.

Q: Who approved this change?
The change was recommended by the Holstein Association USA Genetic Advisory Committee, which is made up of Holstein Association USA members, and was formally approved by the HAUSA Board of Directors at its March 27, 2026 meeting.

Q: Will fat production suffer?
No. Fat remains meaningfully weighted in TPI at 14%. Projections over 10 generations show that the new formula essentially exchanges about 5 pounds of fat gain for 5 pounds of protein gain relative to the current formula over that time. Total combined fat and protein output from

top bulls is virtually unchanged. What does shift more noticeably over those 10 generations is the fat-to-protein ratio, which moves in a more favorable direction under the new formula, reflecting the intended goal of improving the protein-to-fat composition of Holstein milk over time.

Q: How much will we see bulls' TPI values change?
It depends on each bull's individual fat and protein PTAs. The single best predictor is a bull's fat-to-protein ratio. Bulls with more balanced or protein-forward profiles will see smaller TPI changes, while bulls with very high fat relative to protein will see larger decreases. Across all 4,142 active Holstein bulls analyzed using December 2025 evaluations, the average TPI change is approximately -15 points. Among the current top 100 bulls, the average change is approximately -38 points.

Q: Will rankings change significantly?
Overall, rankings are very stable. Across all 4,142 bulls, the correlation between current TPI and the new TPI is 99.6%, meaning the vast majority of ranking relationships are preserved. Among the current top 100, 87 remain in the top 100 under the new formula and 13 move out. Some reshuffling occurs within the elite tier, but the group of leading sires is largely the same.

Q: Can I get a sense of how a specific animal will be affected before April?
Yes. Animals with fat-to-protein ratios near or below 1.3 will see little change or a modest improvement in relative standing. Animals with fat-to-protein ratios above 2.0 will tend to see more meaningful TPI decreases. Your bull stud or genetics advisor can help walk through specific sires.

Q: Does this change affect health and fertility traits in TPI?
No. The April 2026 change is limited to the Protein and Fat weights within the production component. All other traits retain their existing weights.
HAUSA analyzed correlations between TPI and key health and fertility traits including productive life, cow livability, somatic cell score, cow conception rate, health trait $, and mastitis resistance. Those relationships are essentially unchanged under the new formula. Breeders who have prioritized health and fertility traits in their selection programs should not expect this formula change to alter those outcomes.

Joint Conformation Advisory Committee & Genetic Advancement Committee Recommendation

February 17, 2026

The following recommendation was made at a joint meeting of the Conformation Advisory and Genetic Advancement Committee meetings held on February 17, 2026. It was approved at the HAUSA Board of Directors Meeting on March 27, 2026. This information is being shared in accordance with the publication requirements outlined in HAUSA's Disclosure Policy.

Holstein Conformation Composite (HCC)

The committee recommends implementing the Holstein Conformation Composite (HCC) as presented by staff. The HCC is a new selection tool, designed to help breeders identify animals with the combination of conformation traits most closely associated with balance, functionality, and long-term durability.

HCC will initially be published as a new trait, alongside PTA Type (PTAT) and the existing Udder Composite (UDC), Foot & Leg Composite (FLC), and Body Weight Composite (BWC) values. HCC values for active A.I. bulls will be released before July 1, 2026. Incorporation of HCC in TPI® would be evaluated later in 2026.

The committee adopted the following mission statement for the Holstein Conformation Composite:

The Holstein Conformation Composite (HCC) is a selection tool designed to identify animals with the combination of conformation traits most associated with balanced, functionally correct Holstein cattle. The HCC emphasizes intermediate optimum values for key traits that support long-term functionality. It promotes moderate frame size, balanced udders built for longevity and production potential, and sound feet and legs. The HCC identifies cattle that move well, maintain structural soundness, and produce profitably across many lactations, representing the balanced, durable cow that dairy producers recognize as their most profitable. Developed through collaboration between experienced breeders and the empirical analysis of Holstein Association USA's comprehensive database of linear conformation and production records, the HCC provides breeders an alternative to Predicted Transmitting Ability for Type (PTAT) by weighting individual conformation traits based on breed priorities, considering the relationships between traits, rather than being

based on Final Score alone. The formula is evaluated periodically by Holstein Association USA's Conformation Advisory and Genetic Advancement Committees to ensure it continues to advance the Holstein breed and serve the evolving needs of breeders worldwide.

The HCC incorporates HAUSA linear conformation traits, with each trait evaluated based on its relationship to functional balance and longevity. Trait weightings reflect both how heritable each trait is and how traits correlate to one another genetically. This approach helps explain why certain traits, such as Stature, receive relatively greater emphasis than may be expected. For ease of presentation, several weights shown in the table below are rounded; actual trait weights sum to 100%.

Trait	**Weighting**	**Emphasis**
Stature	15%	Favors Lower Values
Strength	9%	Favors Higher Values
Body Depth	3%	Intermediate Optimum
Dairy Form	4%	Favors Higher Values
Rump Angle	6%	Intermediate Optimum
Rump Width	5%	Intermediate Optimum
Rear Legs – Side View	5%	Intermediate Optimum
Rear Legs – Rear View	2%	Favors Higher Values
Foot Angle	8%	Favors Higher Values
Feet & Leg Score	7%	Favors Higher Values
Fore Udder Attachment	6%	Favors Higher Values
Rear Udder Height	3%	Favors Higher Values
Rear Udder Width	5%	Favors Higher Values
Udder Cleft	8%	Favors Higher Values
Udder Depth	5%	Intermediate Optimum
Front Teat Placement	2%	Intermediate Optimum
Rear Teat Placement	4%	Intermediate Optimum
Teat Length	5%	Intermediate Optimum