



A Million Reasons Why Conformation Matters

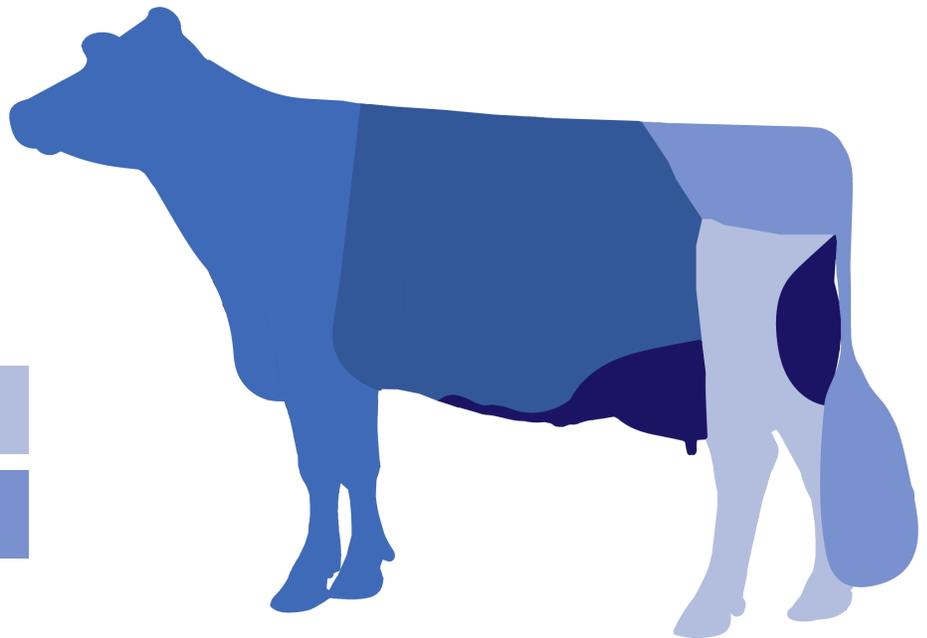
Holstein Association USA study shows clear relationship between desirable functional conformation and economically important traits.

What should a dairy cow look like? How does physical conformation in today's dairy industry relate to economically important traits?

A recent study completed by Holstein Association USA staff aimed to answer these questions using a large dataset with matching data from official linear classification evaluations and DHIA production records. The dataset covered almost 20 years of data and included over 1 million cows*.

Final score for first lactation cows can range from 50 points to 89 points, with higher scores being more desirable. For all analyses, all cows were divided into four quartiles based on final score where the highest 25% of cows were in the top quartile and the lowest 25% in the bottom quartile.

Final Score Major Breakdowns



How does physical conformation impact longevity and lifetime production?

We all want to breed cows that produce large quantities of high component milk across their lifetime. Comparing the top quartile to the bottom quartile, the highest scored cows produced **13,389 more pounds** of energy-corrected milk (ECM) across their lifetimes than cows in the bottom quartile (Figure 1).

Using a long-term milk price, of \$20/cwt, **this difference represents \$2,678 more in lifetime gross revenue per cow.** Cows with better physical conformation provide more lifetime revenue to a dairy.

Figure 1. Lifetime ECM By Final Score Quartile

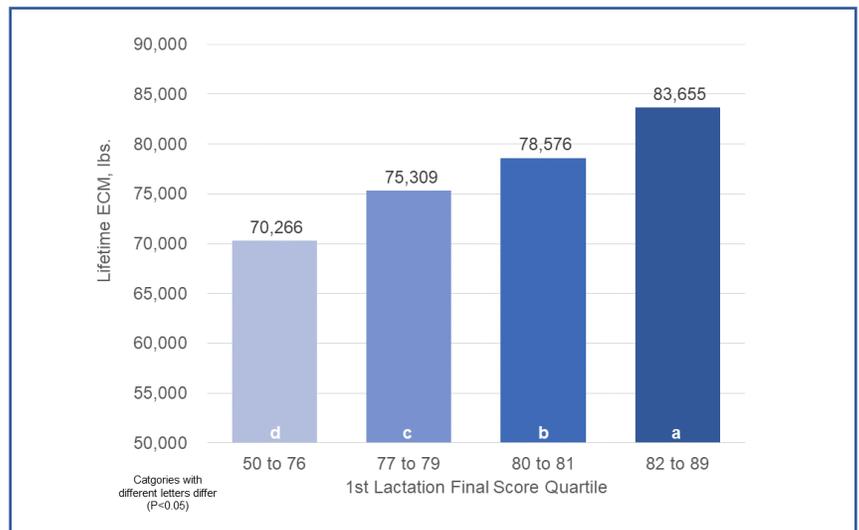
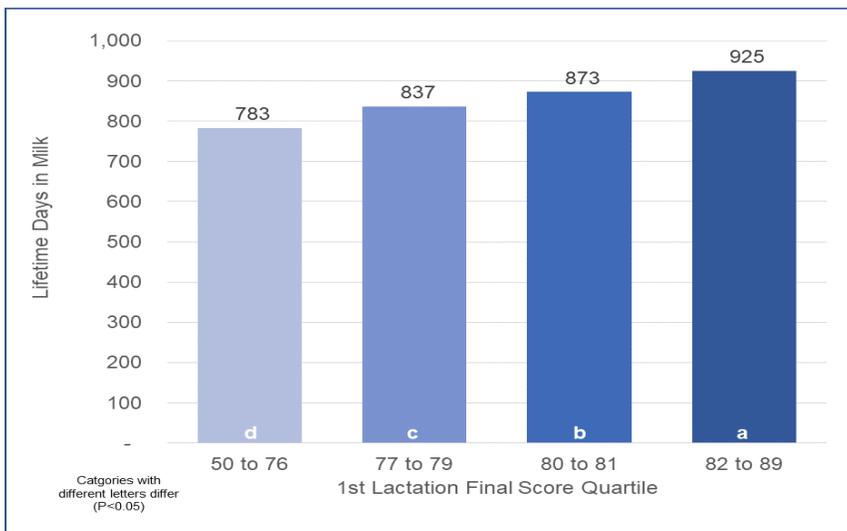


Figure 2. Lifetime DIM By Final Score Quartile



The data tells us that part of this difference in lifetime ECM is because those cows in the highest quartile based on first lactation classification score simply stayed in the herd longer.

In Figure 2, cows in the top quartile had **142 more lifetime days-in-milk (DIM)** than cows in the bottom quartile, or almost five extra months. Getting several extra months of lactation out of cows helps spread the fixed cost of raising each heifer over more time, reducing the effective cost of raising heifers.

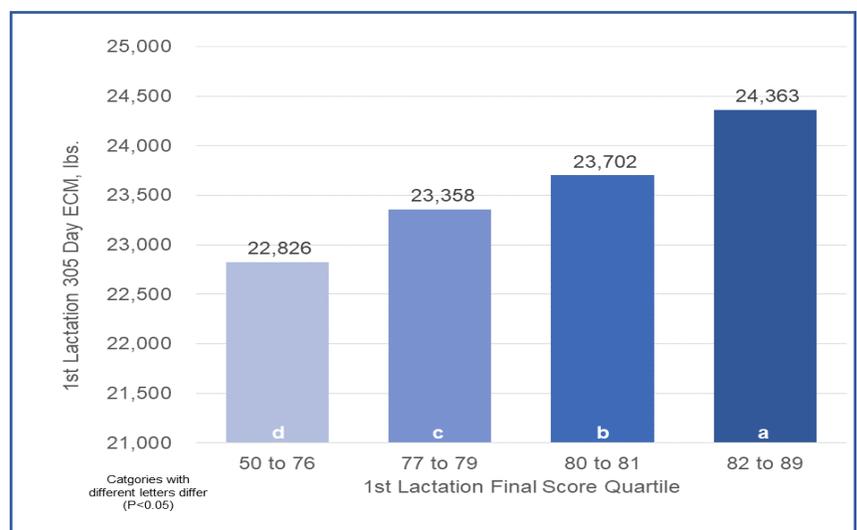
Looking at first lactation data only, cows in the top quartile for final score produced **1,537 pounds more** energy-corrected milk in 305 days than those in the bottom quartile.

Using a long-term milk price of \$20/cwt, this difference represents \$307 more in gross revenue in the first lactation.



Scan the QR code to view the complete report!

Figure 3. First Lactation 305 Day ECM By Final Score Quartile



The bottom line is - the data clearly shows that cows with more correct, functional conformation live longer and make more milk. If you are interested in seeing more information about individual traits, you can find a complete report with all analyses at www.holstein.com/typematters.

*Details on the statistical analysis:

- Statistical modelling accounted for the effects of herd, year, and season of calving.
- Cows were only included in the final analysis if there were at least 5 herdmates in their herd, year, and season of calving. Doing this addressed concerns of preferential treatment for individual animals, particularly in smaller herds.
- Only cows with complete 305-day milk records were included in the production data.
- Only the first classification score for a cow assigned in her first lactation was used for the comparative analysis.