Can you really trust dairy genomics?

You’ve had the option to include dairy genomics in your genetic toolbelt for nearly ten years now. By now, fear of the unknown mystery surrounding genomics has faded. The progressive dairy industry accepts this as a new era in rapid genetic progress.

Yet, we don’t blame you if you wonder whether genomic-proven bulls are your best option, when many daughter-proven sires still offer a great genetic package. With that in mind, we look for answers in the real proof data on bulls across the entire AI industry.

What did we learn about genomics?

In graphs 1 and 2, our geneticist, Ashley Mikshowsky, analyzed proof figures on nearly 6,000 industry Holstein bulls released between January 2010 and April 2015, that currently have a daughter proof.

Graph 1 shows TPI trends. The blue line on top charts the average GTPI by initial genomic release date. The orange line shows the average August 2018 daughter proven TPI for those same bulls. The space between the two lines represents the average TPI change from initial genomic release to daughter proof.

**Graph 1.**
Change in TPI from genomic release to August 2018 daughter proof

As you can see on the left side of the graph, the bulls first released in January 2010 changed 177 TPI points from their genomic debut to their August 2018 daughter proof.

When you compare that to the newest daughter-proven bulls, including those released as genomic sires in April 2015, you see only a 105-point TPI difference from their initial genomic proof to their August 2018 daughter proof.

This means the stability in GTPI from genomic release until daughter proofs has improved by more than 70 TPI points! As a bonus, it’s clear to see that the genetic levels of bulls continue to rise!

The same goes for Net Merit $. Check out those results in Graph 2.
Industry bulls first released as genomic-proven sires in January 2010 dropped, on average, 150 NM$ from their first release until their August 2018 daughter proof. Whereas, the bulls first released as genomic sires in April 2015 only changed 89 NM$ from their initial release.

**Graph 2.**
Change in NM$ from genomic release to August 2018 daughter proof

![Graph showing change in NM$ from genomic release to August 2018 daughter proof](image)

Looking at these results, your argument might be that dairy genomics are still inflated. Yes, and while that is true, the gap between genomic and daughter proofs has clearly improved since the start of genomics.

**Let’s dig deeper into genomic proof stability**

To understand from another angle, we took a look at the facts and figures in a different light.

Graph 3 and Graph 4 are based on proof data that our geneticist, Ashley, evaluated from 1,073 industry bulls released in 2014. She uses this age group because those bulls released in 2014 now have a daughter proof for production, health and conformation traits.

Graph 3 shows that the bulls released in 2014 changed an average of -110 TPI points from their initial release in 2014 to their daughter proof in August 2018.

Nearly 120 of these bulls have a daughter-proven TPI within just twenty points of their original genomic TPI. Only about 30 bulls from the entire group of 1,073 lost more than 300 TPI points – that’s less than 3%.
We see the same trend for NM$. Graph 4 shows the average NM$ change and standard deviation of the same 1,073 industry bulls. The average sire released in 2014 changed -89 NM$ from their initial genomic proof in 2014 to their daughter proof in August 2018.

More than 160 of the 1073 bulls held steady within the small 20-point swing from genomic to daughter-proven NM$. Just 12 bulls changed more than 300 NM$.

What are your genetic options today?

Still debating whether your best bet is to use daughter-proven or genomic-proven sire groups? Take a look at the top 10 daughter-proven TPI sires available from Alta today.
Currently, our top daughter-proven sires average a solid 2594 TPI. Yet, the top, readily-available genomic-proven group offers a much more enticing 2800 TPI average. That’s a 206-point advantage over the daughter-proven choices!

It’s inevitable that some bulls will gain points and some bulls will lose points between their genomic proof and daughter proof – the data show us that. Yet we can also see genomic proofs continue to improve. Keep in mind that your odds are essentially zero that every single bull atop the genomic-proven list would drop to rank lower than the current list of daughter-proven sires.

With your genetic choices, keep these points mind:

1. Genomic proofs are still slightly inflated. Yet, we see less change from genomic to daughter-proven TPI and NM$ over time because of model adjustments made along the way.

2. Despite an average drop for TPI and NM$ from a bull’s genomic to daughter proof, you will make much faster genetic progress using a group of genomic-proven sires than a group of daughter-proven sires.

3. Make sure the genetic progress you make is in the direction of your goals. Select a group of genomic-proven sires based on your farm’s customized genetic plan. Emphasize only on the production, health or conformation traits that matter most to you to boost your farm’s future progress and profitability.

Proof analysis and graphs provided by Ashley Mikshowsky, PEAK Geneticist