

Igenity[®] Case Study



Maximizing genetic progress in cattle through genomic testing

An increasing number of cattle producers are optimizing herd progress through the application of genomic testing. A commercial cow-calf operation with 7,113 cows in Wyoming and Montana implemented Igenity Beef with the goal of improving replacement heifer selection.

The strategy targeted improvement for efficiency, sustainability, and profitability through a focus on key performance and carcass traits. Advanced selection and more informed breeding decisions powered by genomic testing led to accelerated genetic improvement.

Genetic Gains over the Study Period

Yearling Weight

Figure 1 indicates the improvement in genetic potential for yearling weight based on the average Igenity score for calves born in each year.

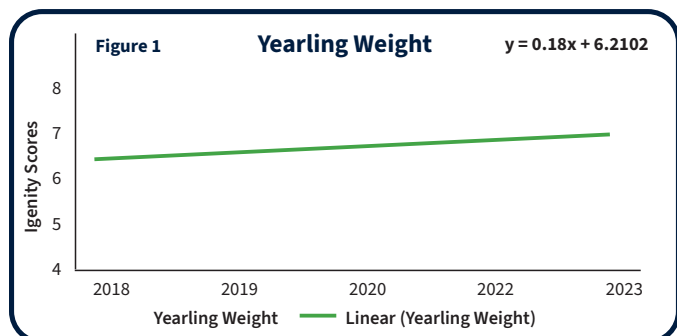
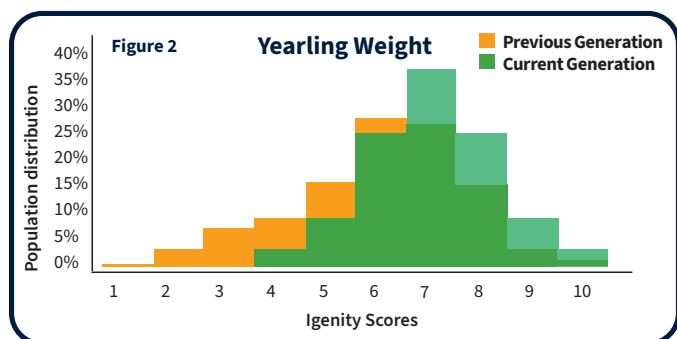


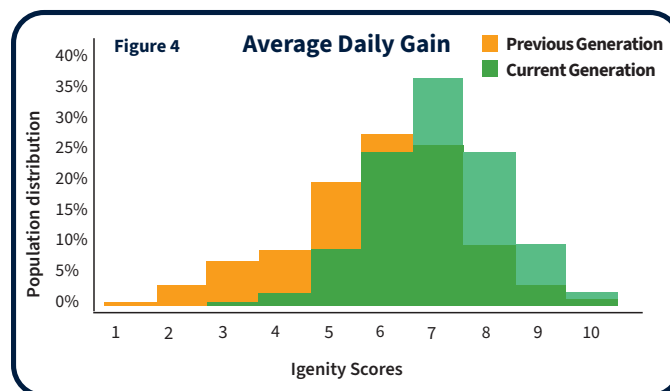
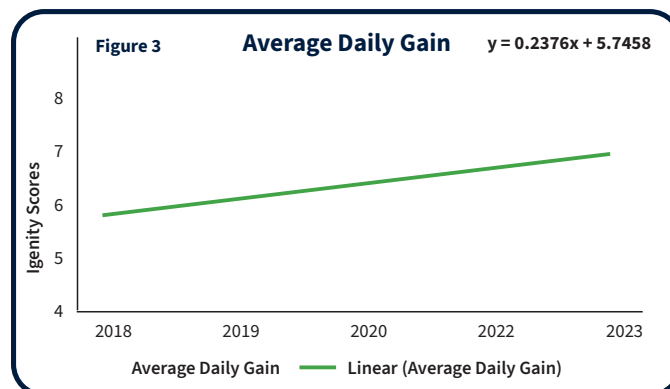
Figure 2 illustrates the increased potential and higher degree of genetic consistency that the current generation has over the prior generation.



These improvements increased yearling weight performance by 3.3 lbs. per animal across the study period. Greater body weight at key growth stages demonstrates the additional value of each animal.

Average Daily Gain

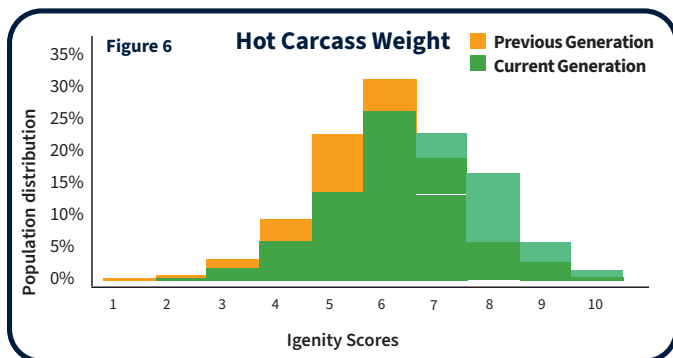
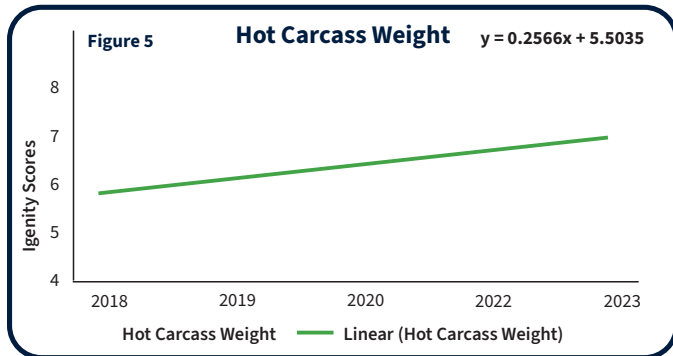
A review of the Igenity scores for average daily gain revealed year-over-year progress (Figure 3) and improved genetics across generations (Figure 4).



At the end of the study period, cattle gained 0.02 more pounds per day than cattle at the start, leading to reduced time to market.

Hot Carcass Weight

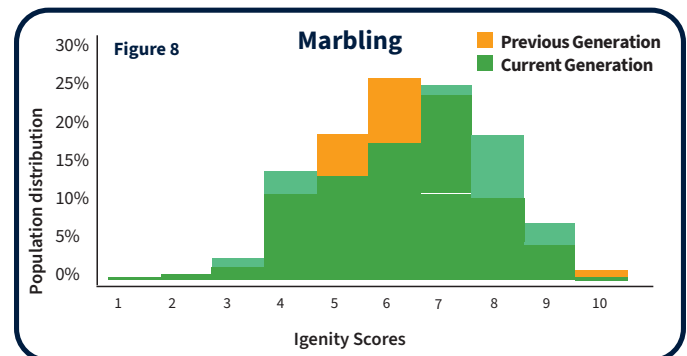
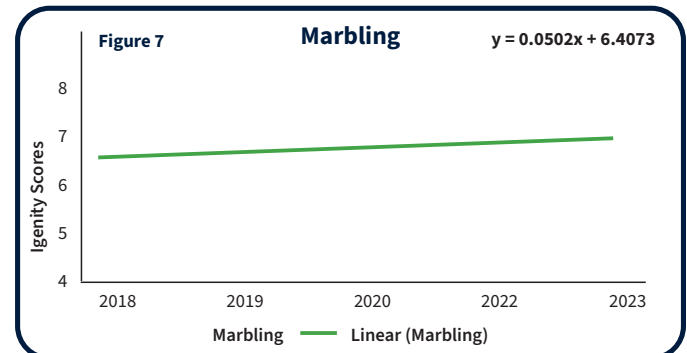
Selection and breeding strategies led to increased genetic potential for hot carcass weight (Figure 5), with a higher proportion of the current generation with an Igenity score greater than 6 compared with the previous generation (Figure 6).



A 13.7-lb. increase in hot carcass weight was realized throughout the study period, demonstrating genomic selection's positive impact on meat yield and carcass value.

Marbling

Genetic trends for marbling showed modest improvement over time (Figure 7) leading to a positive shift in potential for the current generation (Figure 8).



Usually, when the potential for hot carcass weight increases, the potential for marbling decreases. Seeing positive trends for both is indicative of genomic data's ability to facilitate well-balanced progress for multiple traits.

Strategic Selection and Breeding Increases Value

By using Igenity Beef, this operation was able to drive continuous progress using a data-driven, scientifically supported approach. The ability to monitor trends and population distributions allowed for adjustments in selection objectives, ensuring alignment with economic goals and market conditions. Precise breeding strategies fueled by genomics led to cumulative genetic gains and long-term operational success.

These results highlight the transformative power of genomic technology in modern beef production. Genomics is a fundamental asset for commercial cattle operations to make faster, more accurate heifer selection and breeding decisions. Igenity Beef, backed by the Igenity team, enables cattle producers to drive efficiency and profitability, leading to sustainable improvements in the beef industry.

Learn more at neogen.com or contact us | 877-443-6489 | 402-435-0665 | dnahelp@neogen.com



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