

Lessons Learned

CBIN's Collaboration to Advance Genetic Improvement Across the Beef Industry

The development of the Canadian Beef Improvement Network (CBIN) has led to unparalleled collaboration from industry leaders across the beef sector. This has created a considerable opportunity to advance genetic improvement across the sector. The objectives of this project were to:

1. Develop the first across-breed genetic evaluations combining seedstock and commercial data for the Canadian beef sector.
2. Investigate the impact of data sharing across the seedstock and commercial sectors on genetic evaluations.
3. Increase the awareness of genetic improvement resources through the creation of an online hub, the CBIN Dashboard (**Figure 1**).

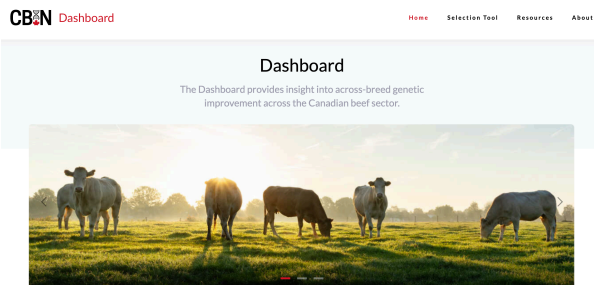


Figure 1. Homepage of the CBIN Dashboard.

What Did We Do?

- Standardized pedigree and performance data on 15 seedstock or commercial pilot herds.
- Calculated genetic evaluations for 7 traits (calving ease, weaning gain, yearling gain, rib eye area, back fat, marbling, and scrotal circumference), within and across-breeds, when commercial data was either included or excluded.
- Evaluated the impact of including commercial data on purebred genetic evaluations.
- Developed the CBIN Dashboard, providing new tools and a central hub for genetic improvement resources in the Canadian beef sector.

What Did We Learn?

1. **Incorporating commercial data benefits genetic evaluations of purebred cattle.** Including commercial data increases accuracy and reduces bias of genetic evaluations (**Figures 2 and 3**), allowing producers more confidence in selection decisions and the potential to accelerate rates of genetic improvement across the sector.

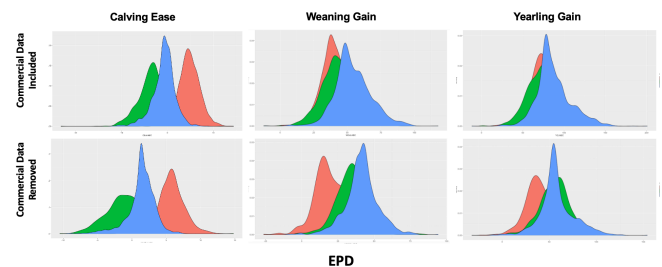


Figure 2. Distribution of EPDs when commercial data is included or removed for Angus (red), Charolais (green) and Simmental (blue) animals present in both datasets.

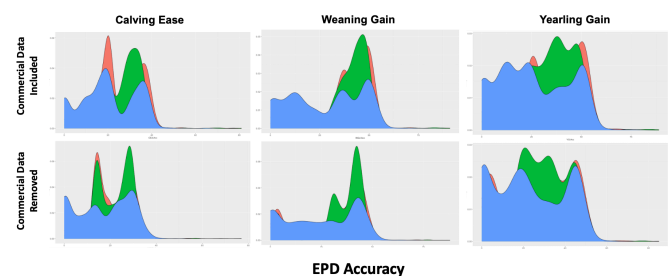


Figure 3. Distribution of EPD accuracy when commercial data is included or removed for Angus (red), Charolais (green) and Simmental (blue) animals present in both datasets.

2. **Lack of data standardization remains a major obstacle to collaboration for the purposes of genetic improvement.** Considerable resources were required to retrieve, clean, and standardize pilot data before it was suitable for genetic evaluations. The development of common data standards would aid future phases of CBIN.

3. **Collaboration is key to the promotion of genetic improvement in the sector.** The expertise and experience of the industry organizations provided valuable insight throughout the development of the dashboard. Furthermore, a collective approach with consistent messaging will be key to increasing adoption of the tools and resources.

4. **The value of the CBIN Dashboard will grow through deeper collaborations.** This pilot has illustrated that deeper collaboration across the beef sector is to everyone’s benefit. However, genetic selection is a long-term solution that requires coordinated effort for incremental but cumulative progress. The current pilot project included a limited number of herds and breeds, with data representing only a few generations of selection, which did not unlock the full power of the CBIN dashboard. The value of the project to the sector will only increase as more phenotypic data, herds, and breeds are included in future phases.

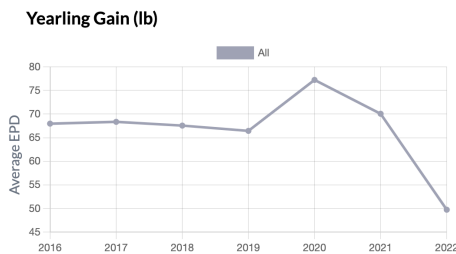


Figure 4. Genetic trend for yearling gain across all breeds, providing an example of the interactive graphs available on the CBIN Dashboard.

Next Steps

The next steps will be to collaborate with BCRC and project partners to share the results, grow awareness of the tool, and build interest in future phases of the project.

Acknowledgements



This Pilot Project was made possible through the support of the Beef Cattle Research Council for the project (KTT.04.20) entitled: “Leveraging the Canadian Beef Improvement Network’s (CBIN’s) Collaboration and Resources to Advance Genetic Improvement Across the Canadian Beef Industry”.

Project Partners

