

Sustainability Indexes FAQ



1. Ordering

Q: How can I receive sustainability-related information?

A: Sustainability-related deliverables are included as part of the Igenity Beef profile and do not require a separate test order.

2. Results

Q: What sustainability-related results are included with Igenity Beef?

A: Customers will receive:

- Sustainability Index
- Sustainability Extra Dollars
- Methane Emission Intensity Index

Q: What is the Sustainability Index?

A: The Sustainability Index is a genomic selection tool designed to identify cattle with stronger potential for long-term production efficiency.

Q: How do I interpret the Sustainability Index?

A: The Sustainability Index uses a 1–10 scale where higher scores indicate greater long-term production efficiency potential relative to the population.

Q: What is Sustainability Extra Dollars?

A: Sustainability Extra Dollars expresses biological efficiency in economic terms, helping producers understand the potential commercial value of sustainability-oriented genetics.

Q: How do I interpret Sustainability Extra Dollars?

A: Sustainability Extra Dollars is an index value expressed in dollars per head. It estimates the expected added value of an animal's progeny associated with genetics tied to long-term production efficiency, productivity, and herd durability.

Q: What is the Methane Emission Intensity Index?

A: Methane Emission Intensity Index is a genomic indicator associated with methane intensity during the finishing period. It estimates methane intensity relative to pounds of beef produced under standardized production assumptions.

Q: How do I interpret Methane Emission Intensity Index scores?

A: Methane Emission Intensity Index is centered around a population average of approximately 100. Higher scores indicate lower methane intensity per pound of beef produced.

Q: Does a higher value always mean better?

A: Generally, higher Sustainability Index and Methane Emission Intensity Index scores are more favorable. However, the indexes balance multiple biological traits together, so animals may achieve similar scores through different strengths.

Q: Can animals with some lower trait scores still rank well?

A: Yes. The Sustainability Index is designed as a balanced multi-trait index. Animals may excel in some areas while being moderate in others.

3. Development

Q: How was the Sustainability Index developed?

A: This index was designed to balance profitability with long-term efficiency and herd durability. The weighting prioritizes traits with the largest economic impact on beef production — including growth and carcass value — while still protecting the traits that keep cows productive over time, such as fertility and longevity.

Q: How are traits weighted?

A: Trait weightings:

- 23% Residual Feed Intake (RFI)
- 13% Average Daily Gain (ADG)
- 25% Hot Carcass Weight (HCW)
- 8% Marbling (MARB)
- 19% Heifer Pregnancy (HPG)
- 12% Stayability (STAY)

Q: Why is feed efficiency important?

A: Feed is one of the largest input costs in beef production and one of the largest contributors to resource use. More feed-efficient cattle can produce the same amount of beef using fewer inputs.

Q: Why are fertility and longevity included?

A: Fertility and longevity are drivers of long-term efficiency. Cows that remain productive longer and consistently produce calves help spread resource use and development costs across more years of production.

Q: Why does carcass value matter?

A: Sustainability is not only about reducing inputs — it involves maximizing the amount and value of beef produced from each animal. Traits related to carcass value help improve production output and marketability.

Q: Does the Sustainability Index account for cow efficiency on pasture?

A: Not directly. The Sustainability Index was developed from genomic predictions already available in the Igenity Beef evaluation, and today, genomic predictions for mature cow forage efficiency are still an emerging area of research. Instead, the index uses available genomic predictions for traits related to biological efficiency, productivity, and longevity to identify cattle with genetics that support more sustainable beef production.

Q: How was the Sustainability Extra Dollars Index developed?

A: Sustainability Extra Dollars was developed by translating the economic contribution of the traits included in the Sustainability Index under standardized production assumptions into a single dollar-based value.

Q: Why do some traits contribute more to Sustainability Extra Dollars than others?

A: Different traits affect profitability in different ways and over different periods of an animal's life. For example, fertility and longevity can impact lifetime productivity for many years, while feed efficiency primarily impacts costs during the feeding period. Sustainability Extra Dollars reflects the combined economic impact of all contributing traits under typical commercial production assumptions.

Q: Can two animals have similar Sustainability Index scores but different Sustainability Extra Dollar values?

A: Yes. Two animals may have similar overall Sustainability Index scores while reaching those scores through different combinations of traits. Sustainability Extra Dollars helps estimate the economic impact of those differences under standardized commercial assumptions.

Q: Does a lower economic value for one trait mean it is less important?

A: Not necessarily. Different traits impact profitability through different biological pathways and timeframes. Some traits affect lifetime productivity, while others primarily influence a single production phase. The Sustainability Index was designed to balance these traits together rather than over-emphasizing any one trait alone.

Q: How was the Methane Emission Intensity Index developed?

A: Methane Emission Intensity Index combines information about biological efficiency, feed intake, and animal performance to estimate methane emissions relative to productivity. To ensure the estimates are consistent and scientifically grounded, they are based on the IPCC Tier 2 framework which is commonly used in greenhouse gas modeling frameworks.

Q: What is the IPCC Tier 2 framework?

A: The Intergovernmental Panel on Climate Change (IPCC) Tier 2 framework is an internationally recognized greenhouse gas standardized modeling approach that incorporates animal performance and feed-related assumptions to estimate methane emissions intensity.

Q: Does Methane Emission Intensity Index directly measure methane emissions from cattle?

A: No. Methane Emission Intensity Index is not a direct methane measurement. It is a modeled methane intensity estimate based on biological traits associated with production efficiency.

4. General Questions

Q: What does sustainability mean in beef production?

A: There is no universally accepted definition of sustainability. For commercial beef cattle production, sustainability is strongly connected to long-term efficiency, profitability, fertility, productivity, and resource utilization.

Q: How do these indexes help improve profitability?

A: Many traits contributing to the indexes are tied to economically important production outcomes including feed efficiency, growth, fertility, longevity, and carcass value.

Q: How heritable are methane emissions?

A: Research suggests methane-related traits have a moderate genetic component, although methane production is also influenced by nutrition, management, and environment.

Q: Does DNA directly measure methane emissions?

A: Methane Emission Intensity Index is not a direct methane measurement. It is a genomic prediction tool associated with methane intensity under standardized production assumptions.

Q: Does Neogen believe cattle are bad for the environment?

A: Cattle play an important role in agricultural systems by converting forage, grass, crop residue, and other human inedible products into high-quality protein. These tools are designed to support improvement in efficiency and productivity within beef production systems.

Q: Does this mean some cattle produce no methane?

A: No. Cattle produce methane as part of rumen function. Methane Emission Intensity Index reflects relative methane intensity, not zero methane production.

5. How to Use the Results

Q: How should I use the Sustainability Index in selection decisions?

A: The Sustainability Index is best used as a balanced ranking and selection tool alongside existing breeding and management goals.

Q: Should the Sustainability Index replace traditional selection criteria?

A: These tools are designed to complement existing selection programs, not replace sound management, health, nutrition, or breeding decisions.

Q: How can seedstock producers use these results?

A: Seedstock producers can use these tools to help differentiate breeding programs focused on efficiency, fertility, longevity, and long-term productivity.

Q: How can commercial cow-calf producers use these results?

A: Commercial producers can use these scores to help select cattle with stronger long-term efficiency, reproductive durability, and productivity potential.

Q: How can feedlots use these deliverables?

A: Feedlots may use these tools to support procurement decisions related to feed efficiency, growth performance, carcass value, and methane intensity conversations.

Q: Can these scores help with sustainability program discussions?

A: Yes. These deliverables provide standardized, genetics-based efficiency indicators that may support conversations with supply chain partners and sustainability-focused programs.

Q: Does selecting for sustainability mean sacrificing performance?

A: No. The Sustainability Index was intentionally designed to balance efficiency, profitability, carcass value, fertility, and longevity rather than overemphasizing any single trait.

Q: Does Sustainability Extra Dollars guarantee profitability?

A: No. Sustainability Extra Dollars is intended as a comparative economic tool based on standardized assumptions. Actual profitability will still depend on management, nutrition, environment, feed costs, and market conditions.

6. Data Privacy and Future Opportunities

Q: Will customer data be shared with third parties?

A: Customer genomic data and results are treated as confidential and are not publicly shared or used to identify individual operations without customer permission.

Q: Are these indexes tied to any regulatory reporting programs?

A: No. These indexes are intended as selection and decision-support tools, not regulatory reporting tools.

Q: Could these tools support future sustainability programs?

A: Sustainability programs continue to evolve across the beef industry. These indexes may help support future value-added conversations, premium opportunities, or incentive-based programs.

Q: Are producers guaranteed to receive premiums for these scores?

A: Today, most sustainability-related premiums are tied to broader supply-chain programs or verification systems rather than genomic scores alone.



Additional Resources

<https://www.beefresearch.org/programs/beef-sustainability>

<https://www.ars.usda.gov/natural-resources-and-sustainable-agricultural-systems/sustainable-agricultural-systems-research/>

<https://www.usrsb.org/>

<https://clear.ucdavis.edu/>

The sustainability-related information provided with Igenity Beef, namely the Sustainability Index, Sustainability Extra Dollars, and Methane Emission Intensity Index, is intended for cattle producers to use at their discretion. Neogen does not share data with outside parties unless there is written consent from the data owner. Individual animal performance results from a combination of genetics, management, and environmental factors; therefore, Neogen does not guarantee animal performance in relation to sustainability-related information.

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



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