

Positioning for the Future of Beef Production: Bringing it All Together

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BIF 50th Year Celebration

50 years is a milestone in time that provides an opportunity to reflect on accomplishments.

When the work you put in is realized
Let yourself feel the pride BUT
Always stay humble and kind

Tim McGraw
Humble and Kind

BIF 50th Year Celebration

It is also an opportunity to reset the clock.

Using concepts and ideas from the previous speakers I will visit the process of selection and discuss opportunities moving forward as we enter
Year 1 of the next 50 years.

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Create a breeding objective
Collect data for traits defined in the objective
Utilize the data to predict genetic merit
Rank and select the requisite number of replacements
Measure success

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The Goal

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What goal **was used to motivate** the selection we performed over the past 50 year?

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Genetic trends for traits for which EPDs have been published show that there has been change created by selection.

McCully: *"The beef industry is more economically viable and sustainable today as a result of **cattlemen intentionally improving eating satisfaction and growing demand through a focus on quality.**"*

The Goal

What goal **was used to motivate** the selection we performed over the past 50 year?

What goal **should motivate** the selection we perform over the next 50 year?

The temptation is to continue on perhaps simply striving to improve on what we currently do.

Let's not just do that.

The Goal

Sara Place: *"Sustainability is about balancing economic, social, and environmental concerns and having a long-term focus (i.e., meeting the needs of the present without sacrificing the ability of future generations to meet their own needs..."*

If I were to define the goal for the beef industry's breeding program it would be **to support sustainable production of beef.**

Selection Program

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The Breeding Objective

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The Breeding Objective

If we were to critically assess the current selection program, we would likely find areas of weakness in addressing important needs of the industry.

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The Breeding Objective

At BIF 2000, Bruce Golden and company presented a long list of traits that could be measured in beef cattle and most importantly, divided those traits into either being:

Economically Relevant Traits (ERTs)

Indicator traits for ERTs.

This list needs to be revisited and refreshed.

BIF is the perfect venue to have this discussion.

The Breeding Objective

Global versus Local Breeding Objectives:

The beef industry is not one synchronized enterprise but rather is comprised of a multitude of independent businesses.

This does not distract from a comprehensive breeding objective but rather places emphasis on how economic values of those traits when being selected within individual programs.

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Data: Phenotypic

Much of the selection occurring over the past 50 years focused on traits for which data collection was relatively easy.

A more comprehensive breeding objective requires reaching for “higher hanging fruit” which by its very nature will be more difficult and likely more expensive to collect.

Data: Phenotypic

BIF is the perfect venue to have this discussion.

We recognize that genetics is driven by the seedstock segment.

Broadening the scope of a breeding objective will require incentives “or subsidies” to do so.

There can be significant differences in the investment needed for including new traits. Priorities will need to set as investment funding within the industry is limited.

Data: Phenotypic

One certainty going forward is that the capability to gather phenotypic data will continue to evolve as it has in the past.

There are also valuable databases in being collected that do not contribute to the national breeding program.

Data: Phenotypic

Another issue for discussion is whether the trait, as measured and evaluated, is consistent with industry needs.

As a positive example, McCully:

“The rise in quality grades across the industry has been very intentional, and the factors behind this improvement have been well-documented (Dykstra, 2016). Improvements in cattle genetics and management, supportive feeding economics and grading technology enhancements have all contributed to the trend, but ultimately the industry has responded to the market signals calling for more high-quality beef.”

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“A better approach to evaluating efficiency would be to control for endpoint using a metric such as Empty Body Fat (EBF).”

Data: Phenotypic

Question:

Are there trends in the industry that might negatively impact the value of the phenotypes currently being collected and hence requiring us to modifying of those protocols or trait definitions?

BIF is the perfect venue to have this discussion.

Data: Genomic

Current adoption is impacting genetic evaluations for traits with EPDs.

DNA technology also provides a way to obtain genetic evaluations on animals for “novel” traits.

Are we adequately prepared to appropriately assign the economic value to these traits in our trait indices?

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Measuring Success

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Alternatives?

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Greenhouse gas example:

Research into greenhouse gas emissions in cattle is ongoing (e.g., study of the microbiome) and this research will ultimately develop metrics for assessing emissions.

Measuring Success

Genetic trends: Monitoring change in EPDs over time.

Alternatives? Sara Place:

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Measuring Success

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Alternatives? Sara Place:

“Cattle herd size relative to beef produced is a critical component that determines the total resource use of beef production within the United States and globally..... Emissions from U.S. beef production have declined because the U.S. cattle herd has declined, and more beef has been produced per live animal”

Move toward success measures that reflect total impact.

Summary

Garrick:

“After 50 years of this organisation, we need to ensure that the annual symposium and conference continues to motivate new generations of those leading breeders, and to lobby funds to allow us to move forward and continuously reconsider trait opportunities.”

Summary

It is suggested that we:

1. Establish a statement of our goal for beef production.
2. Establish a breeding objective that ensures economic viability and focuses on needs of the industry in responding to the social climate.
3. Develop our ability to collect data on a broader portfolio of traits.
4. Find mechanisms to incentivize the entire process.
5. Be more imaginative in how we measure and report success.

BIF is the perfect venue to develop this program starting in year 1 of the next 50 years.