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What's happening with eBEEF?

The eBEEF website (www.ebeef.org) was officially launched in June at the 2015 Beef Improvement Federation Symposium and Convention. Since that time we have continued to develop and publish factsheets. As a reminder, these factsheets are meant for the public and we encourage their duplication and usage. We are continually trying to expand our library of videos that deal with frequently asked questions (FAQs), conference videos and tools.

Here is a list, and a short description, of the factsheets that have been developed since the last newsletter:

Beef Cattle Economic Selection Indices

Selection indices provide a single value, usually reported in dollars, for the selection of breeding stock that optimizes selection on a number of traits that define profit in a particular production scenario. Selection indices simplify selection by weighting EPDs by appropriate economic values to estimate the net merit of a selection candidate under a predefined breeding objective or goal.

Genetic Markers of Bovine Respiratory Disease Complex (BRDC) Susceptibility

Complex diseases such as BRDC involve the influence of many genes and are by definition hard to predict. Genomic heritability estimates of BRDC susceptibility in Holstein dairy calves is moderately heritable (0.21). The Single Nucleotide Polymorphism assays are finding genomic regions associated with BRDC susceptibility, suggesting that genetic progress in these traits could be made by including the specific SNP markers that are indicators of BRDC disease risk in national cattle genetic evaluations.

DNA Sample Collection

Producers may wish to collect DNA samples on animals for a variety of reasons including parentage testing, quantitative trait testing, testing for genetic defects, or archival purposes. This factsheet discusses the current methods of DNA sampling.

EPD Basics and Definitions

EPDs represent the genetic components of an animal's phenotype that are expected to be passed on to the next generation. Studies have shown that using EPDs are seven to nine times more effective than selecting based on actual phenotypes. This factsheet will assist readers in understanding how to interpret EPDs and breed averages, and be able to use percentile ranks in order to identify potential sires that fit the desired breeding objective.

What is Gene Editing?

Gene editing is a category of new methods that can be used to precisely edit or change the genetic code. As the name "gene editing" suggests, these technologies enable researchers to add, delete, or replace letters in the genetic code. In the same way that spell check identifies and corrects single letter errors in a word or grammar errors in a sentence, gene editing can be used to identify and change the letters that make up the genetic code (i.e. DNA) within an individual. This factsheet explores the many possible uses of gene editing.

Genetic Correlations and Antagonisms

Knowledge of which traits are antagonistic can be utilized to manage the impact of selection decisions on other correlated traits. However, it is important to remember that although genetic correlations can sometimes create the need to exercise more care in selection to alleviate unintended consequences, these correlations can sometimes be utilized to our benefit. Understanding the magnitude and direction of genetic correlations can assist in selection decisions. Utilizing balanced selection for multiple EPDs in a breeding objective or using an appropriate selection index will ensure that genetic antagonisms don't become a limiting factor for genetic progress.

The Genetics of Horned, Polled and Scurred Cattle

The condition of horned, polled or scurred in cattle has important economic and welfare considerations, but is poorly understood. This factsheet explores the genetic aspects of these conditions, their relationships with each other and how to manage them in your breeding program.

Commercial Replacement Heifer Selection

Heifer selection is an important aspect of commercial beef operations, but unlike bull selection must be done without the aid of Expected Progeny Differences. This factsheet discusses considerations when making heifer selections, including available

genomics tools and the importance of sire selection when replacement heifers are to be retained.

Go to the FAQ section to find answers to some common beef genetics questions. You have the option to click and read the text or watch a video with the answers. Go to: http://www.ebeef.org/faqs.html.

We have developed 30 videos associated with FAQs and 31 videos from various conferences. These videos can be found at: https://www.youtube.com/channel/UCw8zZL_EaBRC6Pa-4V0OYrA/playlists

Additional information continues to be added to the website so please come back often and see what's new!

Yours sincerely,
The eBEEF team