

Abstract Submission Form

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Preferred presentation

Poster

Preferred session

Session 9: WG DNA – Genomic's impact on Livestock Sustainability

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Title of your paper

Igenity® BeefxDairy: A genomic tool for identifying genetic merit of Beef on Dairy cross calves

Insert ABSTRACT text

An increasing number of dairy farms are interested in managing their replacement heifer inventories. They utilize genomic testing and sexed semen to create enough replacement heifers for their dairy herd replacement needs. From a dairy system sustainability perspective, this facilitates the opportunity to utilize beef semen and increase profitability on cows not destined to create replacement heifers. In general, these beef on dairy calves have advantages over straightbred dairy calves; however, there is interest in specific animal performance insights in this growing class of beef on dairy cattle. With the large influx of beef-influenced dairy cattle into the feeder space, it is becoming more imperative to better understand the genetic differences among those calves. This need has led Neogen to develop a commercial genomic testing tool to help rank beef influenced dairy calves for terminal traits of interest. This facilitates an opportunity to choose how to manage the animals through the growth and finishing stages of production.

In a study population of 1,002 feedlot cattle, we investigated the genomic breed composition as well as the relationship between genomic prediction of performance and actual phenotypic harvest and performance data. Samples taken on 438 steers and 564 heifers were approximately 55% beef influence and 45% dairy. Statistical analysis (R software) demonstrated positive correlations between Igenity® scores and phenotypic performance of 0.29, 0.23, and 0.22 for marbling (MARB), average daily gain (ADG),

and hot carcass weight (HCW), respectively. Furthermore, when ranking cattle according to Neogen's Terminal Index and comparing the top quartile (average = 6.71) to the bottom quartile (average = 5.22) of animals, phenotypic performance was significantly different for ADG (1.32 kg/d vs. 1.24kg/d, $P < 0.001$, respectively), HCW (390.6 kg vs. 372.2 kg, $P < 0.001$), and USDA yield grade (2.59 vs. 2.43, $P < 0.05$). Based on August 2022 grid pricing, this resulted in a ~US\$78 difference in individual carcass revenue, per head between Terminal Index top quartile and bottom quartile.

Igenity® BeefxDairy demonstrates a viable opportunity to manage animals relative to their genetic potential during the feeding period, representing appropriate investment of precious feedstuffs and improving the production footprint of beef production out of dairy cows.

Enter keywords

genetic profiling, breed verification, calf management