One of the biggest challenges facing the cattle industry in North America (the United States, Mexico, and Canada) is cattle supply. Perhaps one of the most notable shifts in the beef industry has been the increased feeding of Holstein steers to increase cattle supply. Therefore, the 2015 Beef Cattle Nutrition Symposium of the 2015 Joint Annual Meeting of the American Society of Animal Science and the American Dairy Science Association in Orlando, FL, titled “Feeding Holstein Steers” was organized to provide an update in research developments and industry trends related to managing and feeding Holstein steers.

The symposium featured 6 speakers, including Luis Burciaga-Robles (Feedlot Health Management Services, Okotoks, Alberta, Canada), Glenn Duff (New Mexico State, Las Cruces), Michael Ballou (Texas Tech University, Lubbock), Richard Zinn (University of California, Davis), T. G. Nagaraja (Kansas State University, Manhattan), and Trent McEvers (West Texas A&M University, Canyon). Speakers addressed 1 of 2 feed yard management segments: the growing period or the finishing period. These 2 periods of growth were separated given that there is a growing body of evidence that the management of calves has a large impact on how they finish.

Dr. Luis Burciaga opened the symposium with a discussion of feeding Holstein calves from birth to 205 kg (Burciaga-Robles, 2015). He emphasized the different feeding regimens between Holstein calves and more traditional beef calves and the need for a multidisciplinary approach focusing on rates and composition of growth, type of feeds, and economic impact of the various feeding regimens. In addition, he discussed the need for greater understanding (i.e., research) of various feeding regimens on the general health of growing Holstein calves, including the immune status and response of the calves that may affect lifetime growth rates and carcass composition.

This talk was followed by an in-depth discussion by Dr. Glenn Duff on the morphological, microbiological and biochemical development of ruminant gastrointestinal tract development (Yeoman and Duff, 2015). Microbial colonization of the gut begins at birth until a mature climax community forms between 80 and 360 d of age and is dependent on diet and microbiota. For example, preweaning feeding of Lactobacillus acidophilus and Propionibacterium freudenreichii increased gastrointestinal villus height, crypt depth, and total height, whereas postweaning feeding increased average ruminal papillae width in Holstein calves. He concluded that alterations of rumen microbiota that hasten rumen development may potentially improve animal health and performance.

Dr. Michael Ballou completed the calf management section of the symposium with a presentation that focused on the contribution of genetic, environmental, and management factors that contribute to morbidity and mortality in Holstein calves (Ballou et al., 2015). Although Holsteins have the genetic capability to produce carcasses with quality comparable to that of common beef breeds, there are unique challenges to feeding Holstein calves, including a greater inflammatory response to challenge models. For example, in response to ex vivo fibroblast and in vivo lipopolysaccharide models, the inflammatory response was 3 times greater in Holstein compared with Angus calves.

BEEF CATTLE NUTRITION SYMPOSIUM: Feeding Holstein steers

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