proceedings

Abstract

Nutritional Programming of Beef Heifers †

Tryon Wickersham *, Colton Oney and Jason Sawyer

Texas A&M University, College Station, TX 77843, USA; tryon@tamu.edu (T.W.); olton.oney@tamu.edu (C.O.); j-sawyer@tamu.edu (J.S.)

* Correspondence: tryon@tamu.edu

† Presented at the third International Tropical Agriculture Conference (TROPAG 2019), Brisbane, Australia, 11–13 November 2019.

Published: 20 January 2020

Abstract: Sustainability of beef cattle production is, in part, dependent on a supply of females selected and adapted to meet the production environment of a given operation. Ideally, replacement females would have no maintenance requirements, wean infinity calves, and each calf would perfectly match beef value chain expectations. However, bovine physiology has limitations (e.g., generally one calf per year and maintenance requirements are significant) and beef cattle operations have access to divergent quantities and qualities of nutrients with greater variability in those regions subject to drought. Therefore, developing heifers to meet performance expectations as efficiently as possible, under the constraints of an individual operation becomes an essential component of sustainable beef production. Heifer development generally is discussed as the period from weaning to breeding, with successful breeding defined as the endpoint, a critical outcome. However, nutrition at each stage of a heifer's life from conception to her subsequent rebreeding for a second calf plays a role in her long-term productivity and operational success. For example, the role of maternal nutrition is receiving increasing attention for its effects across the entire lifespan of the offspring. Therefore, describing the effects of nutritional programming at each stage of life and the plasticity of nutritional requirements will improve our ability to produce females capable of meeting production goals.

Keywords: heifers; nutrition; development