Influence of Dietary Carbohydrate Fractions on Growth and Development of Post-Weaning Dairy Heifers

Objective: To determine the effects of different carbohydrate fractions, namely neutral detergent fiber (NDF) and non-fiber carbohydrates (NFC), on weight gain, skeletal growth, and rumen fermentation parameters of post-weaning dairy heifers (3 to 8 months of age) when transitioning to higher-forage growing diets. Dietary treatments that were used in this study include: 1) high NDF diet (HNDF); 2) high NFC diet (HNFC) and 3) high NDF diet with added fat to equal metabolizable energy provided by HNFC (HNDF+). Treatment dietary formulations were fed for 112 days, and dietary proportions of forage:grain were increased from 35:65 to 60:40 on day 57 of the trial. Data collected from this experiment will help determine the appropriate dietary carbohydrate proportions to feed dairy heifers post-weaning to optimize rumen fermentation and improve growth and feed efficiency when forage proportions are increased in the diet.

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Impact of Providing Shade on the Growth Performance of Grazing Dairy Heifers

Abstract: Shade is recommended and often considered important for the wellbeing and productivity of animals. However, limited information is available on the growth performance of grazing dairy heifers when they are provided shade. The objective of this study was to determine the effects of shade on the growth performance of grazing Holstein dairy heifers throughout the summer months. Thirty-two heifers were randomly assigned to 1 of 4 groups according to BW (163.8 ± 7.27 kg, 150.6 ± 8.5 d of age). The groups were assigned to 1 of 2 treatments: no shade (NOSHADE) or 2.3 m² shade per heifer (SHADE). Body weight, hip height (HH), withers height (WH), hip width (HW), body condition score (BCS), heart girth (HG), and rectal temperature (RT) were collected every 4 week from May until September 2013. Blood samples were also collected for plasma urea nitrogen (PUN) analysis. Temperature and relative humidity were recorded hourly both in the pasture and under the shade structures using HOBO data loggers, and temperature-humidity indices (THI) were calculated. There were no significant differences (P = 0.60) in ADG (0.84 and 0.89 kg/d for NOSHADE and SHADE, respectively) or BW at the end of the study with NOSHADE heifers averaging 220.6 kg and SHADE heifers averaging 224.3 kg (P = 0.35). Hip heights were similar between treatments (P = 0.32), but WH (116.7 and 118.7 cm, respectively, for NOSHADE and SHADE) were greater (P = 0.001) for SHADE at the end of the study. Heart girth, HW, and BCS were similar between treatments. Providing shade did not significantly improve the growth performance of Holstein dairy heifers in this study.


Using Goats and Prescribed Grazing to Control Non-native Woody Species in the Forest Understory

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