

AN UPDATE ON GIRAFFE (*Giraffa camelopardalis*) RESPONSE TO DIETARY FIBER FORM AND CARBOHYDRATE PROFILE: IMPLICATIONS FOR ANIMAL HEALTH

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Abstract

An experimental coarse browser supplement (EF) and a mixture of 75% Mazuri Browser Breeder and 25% Omelene 200 (GF) were used to evaluate the effects of dietary physical form and carbohydrate profile on six non-lactating adult female giraffe (*Giraffa camelopardalis reticulata*) in a modified reversal study using seven 21 day periods. Individually housed giraffe were fed *ad libitum* alfalfa hay, water, and supplement (EF or GF) each period. Blood collected via jugular venipuncture (day 21) was analyzed for complete blood count and chemistry profile. Observed behavior was recorded every 60 sec (days 13 through 15). Intake of individual feeds was measured days 15 through 21. The statistical model for data analysis included animal, period, and diet. Significance was set at 0.10. Dry matter intake did not differ between treatments, but varied greatly among animals. When consuming EF vs. GF, animals consumed less starch and more neutral detergent-soluble fiber, had lowered blood glucose and blood urea nitrogen, greater neutral detergent fiber organic matter digestibility, and a 2.29 times increase in time spent consuming supplement. Increased eating time may increase salivary rumen buffering. Weight gain and decreased blood levels of non-esterified fatty acids occurred in 5 of 6 animals when consuming EF. The overall picture suggests a possible shift in ruminal fermentation toward a high acetate:low propionate profile as documented in wild giraffe. Extended investigations with a larger population are warranted. We thank Busch Entertainment Corporation and the Busch Gardens management and staff for their support and assistance.