

GIRAFFE (*GIRAFFA CAMELOPARDALIS*) RESPONSE TO DIETARY FIBER FORM AND CARBOHYDRATE PROFILE: IMPLICATIONS FOR ANIMAL HEALTH

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Abstract

Effects of dietary physical form and carbohydrate profile were evaluated in a modified reversal study using six nonlactating adult female giraffe (*Giraffa camelopardalis reticulata*) in seven 21-day periods. Supplements, equivalent in crude protein, vitamins and minerals, were: an experimental coarse browser supplement (EF); and a mixture of 75% Mazuri Browser Breeder and 25% Omelene 200 (GF; Purina Mills, LCC, St. Louis, Missouri 63166 USA). 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. When consuming EF vs. GF, animals had lowered blood glucose (82.3 vs. 99.0 mg/dl, $P = 0.028$) and blood urea nitrogen (BUN, 16.6 vs. 20.6 mg/dl, $P = 0.166$), increased total as-fed intake (1.43 vs. 1.34% body weight/day, $P = 0.128$), and a 2.29 times increase in time spent consuming supplement (277 vs. 121 min/48 hr, $P = 0.064$). Diet-related differences were small but measurable. On EF, glucose approached the range reported for domestic ruminants. Decreased BUN may reflect increased microbial capture and animal use of dietary protein, or decreased degradation of dietary or body protein. Increased eating time may increase salivary rumen buffering. Extended investigations with a larger population are warranted.

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