

METABOLIC STATUS OF LATE GESTATION BEEF COWS AND NEONATAL CALVES

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ABSTRACT

Two studies were conducted to investigate the changes in beef cattle metabolic status over time. In the first study, the effects of grazing stockpiled tall fescue (STF) versus feeding tall fescue hay during late gestation on nutrient availability for fetal development were investigated over 2 yr. Blood urea nitrogen and plasma glucose were greater in cows grazing STF during late gestation. In yr 1, NEFA was greater on d 56 of study and in yr 2 was greater on d 35, 77, and 99 of study in STF cows. Cows grazing STF tended to have greater thyroxine on d 77 in yr 1. Serum triiodothyronine was less on d 0 but greater on d 99 in cows grazing STF. Cortisol concentrations were greater in STF cows on d 77. Calf birth weight was positively correlated with prepartum maternal BUN and NEFA prior to calving. Results indicate that cows grazing STF had altered metabolic status, which may impact fetal development and calf performance. The objective of the second study was to investigate changes in neonatal calf circulating metabolites and blood chemistry, to determine relationships of metabolites among sampling times, and to determine the relationship between calf vigor and blood chemistry. Circulating plasma glucose, serum BUN, NEFA, and a complete chemistry profile demonstrated changes during the first 72 h postnatally. Sampling times were related at limited hours. Time to stand was correlated with serum BUN, NEFA, and albumin at select sampling hours. In conclusion, neonatal calf metabolic status changes during the first 72 h therefore a consistent blood sampling time is necessary and may be related to vigor after colostrum intake.