

The objective of this experiment was to assess the optimal levels of dietary fiber (DF) incorporated in high concentrate (HC) and low concentrate (LC) diets for limit-fed dairy heifers. Eight Holstein heifers ( $335.6 \pm 7.41$  kg BW) were randomly assigned to 2 levels of concentrate: HC (20% forage) and LC (80% forage) and to a forage type sequence (0% of forage as corn stover (CT), 100% corn silage (CS); 20% CT, 80% CS; 40% CT, 60% CS; 60% CT, 40% CS) within forage level administered according to a split-plot,  $4 \times 4$  Latin square design (21-d periods). All diets provided similar intakes of ME and allowed 800 g/d of ADG. DF (NDF and ADF) and non fiber carbohydrates composition were allowed to vary with the dietary ingredients. HC-fed heifers had higher apparent total tract (TD) digestibility of dry matter (DM;  $72.6$  vs.  $64.9 \pm 0.52\%$ ;  $P \leq 0.01$ ) than LC. Increasing DF level by increasing the amount of CT in the diet resulted in a linear decrease of DMTD (73.3, 71.5, 66.2 and  $63.9 \pm 0.51\%$ , respectively;  $P \leq 0.01$ ). Organic matter TD followed the same pattern as DMTD. LC diets had higher NDF ( $P \leq 0.01$ ) and tended to have lower ADF TD than HC diets ( $P = 0.06$ ). As level of DF increased, NDF and ADF TD had a cubic response with 20% CT diets having the highest values. HC diets decreased fecal output on DM and wet-bases, and DF had a decreasing linear effect on these parameters ( $P \leq 0.01$ ). Urine volume excretion tended to be higher for HC-fed heifers ( $16.2$  vs.  $7.7 \pm 2.51$  kg/d;  $P = 0.06$ ) and increasing level of DF tended to decrease urine output ( $P = 0.10$ ). Total purine derivatives did not differ between treatments or CT level, but uric acid tended to be higher in HC-fed heifers ( $P = 0.06$ ), and tended to decrease linearly ( $P = 0.10$ ) when levels of DF increased. We conclude that CT decreased DM, and OM TD linearly while NDF, and ADF TD were maximized when 20% CT was added to HC and LC diets; HC diets were more digestible and generated less fecal output, but total manure was not different between HC or LC diets.

**Key Words:** high concentrate diet, fiber, limit-feeding, dairy heifer

**568 Nutrient utilization of different levels of dietary fiber in dairy heifers limit-fed high and low concentrate diets.** G. J. Lascano\* and A. J. Heinrichs, *The Pennsylvania State University, University Park.*