Digestibility of limit fed high and low concentrate diets with corn silage as the sole forage for dairy heifers with Saccharomyces cerevisiae. G. J. Lascano* and A. J. Heinrichs, The Pennsylvania State University, University Park.

Restricted feeding and high concentrate (HC) diets are potential methods for growing dairy heifers. Ruminal manipulation with additives such as Saccharomyces cerevisiae yeast culture (YC) could alter digestibility when added to these diets. A study was designed to study effects of YC on dry matter digestibility (DMD) and N digestibility (ND). An additional objective was to evaluate effects of YC on DMD and ND added to limit-fed HC diets. A split plot design with heifer age as the whole plot and treatment as sub-plot was administered in a 4 period (21 d) 4 x 4 latin square. Eight Holstein heifers (288 ± 4 and 410 ± 2 d of age and 234 ± 15 and 409 ± 20 kg BW) were allocated to 4 treatments consisting of HC TMR (40% CS, 60% grain; 12.6% CP, 25% NDF), and a low concentrate (LC) TMR (80% CS, 20% grain; 12.3% CP, 35% NDF) without YC addition and the same treatments with YC top dressed (1 g/kg intake as fed basis). Diets were fed once/d to provide 0.22 Mcal ME intake/kg EBW^{0.75}. Periods consisted of 17 d adaptation and 4 d total fecal and urine collection. Urine was collected using non-invasive urinary devices attached to heifers (pH adjusted to minimize NH3 volatilization); feces were collected hourly and stored in airtight containers. DMD was different between HC and LC (75.67 vs.72.96 ± 0.7%; *P < 0.01), and
YC addition increased DMD in both diets \((74.97 \text{ vs. } 73.65 \pm 0.7\%\); \(P < 0.05)\). No differences were found among the 2 ages \((P > 0.3)\). N intake \((128.13 \pm 1.85 \text{ g/d})\) and apparent ND were similar in all treatments. HC diets decreased fecal output on DM \((1.49 \text{ vs. } 1.77 \pm 0.06; P < 0.01)\) and wet \((10.48 \text{ vs. } 7.28 \pm 0.36 \text{ kg}; P < 0.01)\) bases, and YC had a significant effect in both parameters \((P < 0.05)\). Urine volume excretion was not different; therefore total manure output was lower for HC diets. We conclude that YC increased DMD in HC and LC diets; HC diets were more digestible and generated less fecal output, with YC enhancing this effect.

**Key Words:** Yeast culture, Forage:concentrate, *In vivo* digestibility.