

Abstract #M404

Section: [Ruminant Nutrition](#)

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Effects of rumen-protected methionine or choline supplementation on vaginal discharge and uterine cytology of Holstein cows.

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Fertility in dairy cows has been declining in recent years. Supplementation with methionine has been shown to improve reproductive health. Seventy-one pregnant Holstein cows entering their 2nd or greater lactation were fed the same basal diet and randomly assigned to 4 treatments from 21 d before calving to 30 DIM. From –21 d to calving cows were fed a close-up diet. From calving to 30 DIM cows were fed a fresh cow diet, and from 30 to 72 DIM a high cow diet. Treatments were: CON (n = 16, fed the basal diets with a Lys:Met = 3.5:1), MET (n = 20, fed the basal diets + Smartamine M to a Lys:Met = 2.9:1), CHO (n = 16, fed the basal diets + 60 g/d Reashure), and MIX (n = 19; fed the basal diets plus Smartamine M to a Lys:Met = 2.9:1 and 60 g/d Reashure). Starting at d 31 cows were randomly re-assigned to 2 treatments: (CON; n = 36, fed the basal diet with a Lys:Met = 3.4:1) or (SM; n = 36, fed the basal diet + Smartamine M to a Lys:Met = 2.9:1). Cows were evaluated at 4, 7, 10, 13, 15, 17, and 30 d after calving for the presence of secretion by inserting the Metrichick device into the cow's vagina. Sample appearance was scored from 0 to 3 and smell was scored 0 or 3 according to Sheldon et al. (2006), and combined in a final score (S). On 15, 30, and 72 d after calving, the uterine endometrium of all cows was sampled using an endocervical brush (cyto-brush) and streaked onto slides. Each slide was examined and counted by the same person for the presence of endometrial polymorphonuclear (PMN) cells. Statistical analysis was performed using the MIXED procedure of SAS. There was no treatment effect ($P = 0.16$) for S up to 17 DIM. Cows receiving MIX had a lower (0.38 ± 0.3 , $P = 0.03$) S at 30 DIM than CON (1.15 ± 0.3), MET (1.08 ± 0.4), or CHO (2.11 ± 0.4). There were no treatment differences ($P = 0.93$) for the percentage of PMN cells at 15 or 30 DIM. At 72 DIM, cows in SM had lower ($5.33 \pm 3.6\%$, $P = 0.01$) PMN cells than CON ($10.17 \pm 3.6\%$). In conclusion, supplementing cows with Smartamine M after 30 DIM seems to have beneficial effect on cows' uterine health.

Key Words: methionine, endometritis, PMN