In a 4 x 4 Latin square arrangement of treatments with 28 d periods. Performance of cows on all treatments was lower than expected due to low intake of dry matter (DM) which was probably due to the high fibrosity of the basal diet. This resulted in very high daily chewing times on all diets which was associated with high rumen pH values. Intake of DM and its components were not influenced by any treatment. Milk protein % tended (P<0.07) to be higher when cows were supplemented with RP lysine and RP methionine. However production of milk and its components were not affected. Cows tended (P<0.08) to produce more milk and tended (P<0.06) to produce more milk lactose when abomasally infused with isolate alone. However when cows were supplemented with all three AA, milk yield and composition did not differ from the control diet. Evaluation of results suggested that unsupplemented cows were actually co-limiting in intestinally absorbable supplies of lysine, methionine and leucine and that intestinally available leucine may have limited performance on all diets. Results demonstrate that isolate has the ability to stimulate milk lactose synthesis although this may be compromised by deficiency of another AA.

**P444**


Six lactating Holstein cows fitted with ruminal and duodenal cannulas were used to determine the effect of ruminally protected Lys (RP-Lys) and Met (RP-Met) on microbial yield, amino acid flow to duodenum, and milk production and composition. The experimental design was a 3x3 Latin square. Cows averaged 69 DIM at the beginning of the experiment. Two basal diets were formulated to provide either 88 and 90% required lysine and methionine (Neg) or 112 and 103% (Pos), using corn distillers grains or blood meal, fish meal, and meat bone meal as by-pass amino acid sources, respectively. The RP-Lys and RP-Met were added as a top-dress to the Neg diet to provide 8 g/d methionine and 27 g/d lysine. Yb was used as a particular flow marker and the concentration of purines in the duodenal digesta was determined for estimation of microbial N. Milk protein, microbial synthesis in the rumen, and total EAA flow to duodenum were significantly improved by supplementation of RP-Lys+Met.

**P445**


Four Holstein cows fitted with ruminal, duodenal, and ileal cannulas were used to determine the intestinal protein and AA digestibility and absorbability of animal-marine protein blend (AMPB1) in two experiments. The degradability of protein and AA of AMPB in the rumen and intestine were evaluated by in situ and mobile nylon bag techniques. The experimental design was a 2 x 3 Latin square and cows in the first experiment were in their dry period and cows in the second experiment averaged 80 DIM. One basal grain mix was formulated using soybean meal, barley, and corn. Cows were fed equal portions of a TMR containing 19% of grass silage, 13% of alfalfa hay, and 61% grain mix at 6 hour intervals for 5 days. Animal-marine protein blend as 4% of dietary DM was also dosed into rumen through a fistula at the time of feeding. Ytterbium labelled silage was used as a particular flow marker. The protein degradability of rumen degraded AMPB was also determined by the three-step in vitro procedure (J. Anim. Sci. 79:1459). The results indicated that absorbability of AA in the small intestine was numerically greater when cows were offered supplemental AMPB. Protein digestibility of rumen undegraded AMPB by the three-step in vitro procedure across experiments was highly correlated with its estimation using the mobile nylon bag technique (r = 0.98, P < 0.05).