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W124 Evaluating plasma methionine in response to feeding three rumen-protected methionine products.

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Rumen protected amino acids offer the opportunity for precise feeding of limiting amino acids to ruminants. Plasma methionine (Met) is a strong indicator of bioavailability of rumen protected Met products and is directly influenced by intestinal absorption of Met. This study examined the comparability of a new rumen protected Met product, KESSENT[®] M, to 2 currently marketed products. Ten multiparous Holstein cows, 280 ± 73 DIM, were used in a replicated 3×3 Latin square design, with 7-d experimental periods. Treatments consisted of a control diet plus 12 g/d of either KESSENT M (Kemin Animal Nutrition and Health, Herentals, Belgium), Smartamine M (Adisseo Inc., Antony, France), or Mepron (Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany). Cows were fed ad libitum with 33% of their daily feed allotment provided every 8 h. Milking occurred at 4:30 a.m. and 3:30 p.m. daily with milk samples collected on d 5–7 of each period. During d 5–7 of each experimental period, blood samples were collected from jugular catheters at 2, 4, 6, and 8 h after the morning feeding. At the end of the experiment, samples were sent to Missouri Agriculture Experiment Station Chemical Laboratories for amino acid analysis by cation-exchange chromatography with an amino acid analyzer. There was no significant effect of treatment on DMI or production parameters. Plasma Met as a % of total amino acids minus Met was 1.5085, 1.5267, and 1.3622% for KESSENT M, Smartamine M, and Mepron, respectively. KESSENT M and Smartamine M were not found to be significantly different ($P = 0.3420$); however, KESSENT M and Mepron were significantly different ($P < 0.0001$), with KESSENT M yielding greater plasma Met Levels. There was a significant effect of time of sampling on plasma Met as a percentage of amino acids minus Met ($P = 0.002$), due to higher Met at 2 h (1.508%) than 4, 6, and 8 h (1.439, 1.447, and 1.469% respectively). Similarities in plasma Met levels between KESSENT M and Smartamine M treatments would suggest comparative bioavailabilities and bioavailability greater than that of Mepron.

KEYWORDS:

rumen-protected methionine, dairy cow