



Evaluation of a rumen-protected methionine product for lactating dairy cows at 2 concentrations of dietary crude protein

Shane M. Fredin, Heather M. Dann, Kurt W. Cotanch, Catherine S. Ballard, Richard Paratte, Kai Yuan and Rick J. Grant

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This study evaluated the effect of a supplemental rumen-protected Met product (Timet; VETAGRO S.p.A.; Reggio Emilia, Italy) on lactation performance and rumen measures of dairy cows fed 2 concentrations of dietary CP. Sixteen multiparous Holstein cows (8 ruminally-cannulated) were used in a replicated 4 × 4 Latin square design with 28-d periods. Cows were fed 1 of 4 diets: (1) a control diet containing (DM basis) 40.8% corn silage, 9.5% hay crop silage, and 49.7% grain mix (CON); (2) the CON diet plus Timet (TMT); (3) the CON diet plus Smartamine (Adisseo USA Inc.; Alpharetta, GA; SMT); and (4) a reduced-CP diet plus Timet (TMT-RCP). The TMT, SMT, and TMT-RCP were balanced to contain the same supply of metabolizable Met and Lys, and contained (DM basis) 16.2, 16.2, 15.9, and 13.7% CP, respectively. All diets contained 30.9% NDF and 26.8% starch. Dry matter intake and milk yield were measured on d 22–28. Milk samples were collected d 26–27 to determine composition. Rumen NH₃-N concentrations were measured on d 26–27 at 4-h intervals. Data were analyzed by ANOVA using the MIXED procedure of SAS. Dry matter intake was unaffected by diet, averaging 26.8 kg/d ($P > 0.10$). Milk yield was unaffected by diet and was 45.6, 46.8, 44.4, and 44.9 kg/d for the CON, TMT, SMT, and TMT-RCP diets, respectively ($P > 0.10$). Milk protein percentage was increased for cows fed SMT (3.33%) compared with the other 3 diets (3.24%; $P = 0.01$), but protein yield was unaffected by diet and was 1.44, 1.49, 1.45, and 1.46 kg/d for the CON, TMT, SMT, and TMT-RCP diets, respectively ($P > 0.10$). Milk lactose percentage was decreased for cows fed SMT (4.55%) compared with the other 3 diets (4.61%; $P = 0.01$). Consistent with reduced CP, MUN (mg/dL) was decreased for cows fed TMT-RCP (11.3) compared with the other 3 diets (13.5; $P \leq 0.01$), and ruminal NH₃-N (mg/dL) was decreased for cows fed TMT-RCP (3.4) compared with the other 3 diets (6.9; $P = 0.001$). In conclusion, milk and protein yields were unaffected by sources of rumen-protected Met products. Supplementation of Timet maintained the lactation performance of cows fed reduced CP diets.

HEADQUARTERS:

Vetagro S.p.A.
Via Porro 2 42124 Reggio Emilia - Italy
info@vetagro.com
infowesteu@vetagro.com
Tel: +39 0522 186 1500
Fax: +39 0522 92 7025
www.vetagro.com

OTHER LOCATIONS:

Vetagro Eastern Europe Kft.
Váci utca 81 1056 Budapest - Hungary
infoeasteu@vetagro.com
Tel: +39 0522 186 1500
Fax: +39 0522 92 7025

Vetagro Yem Ticaret A.Ş.
Levent Mahallesi, Cömert Sokak, No: 1
Yapı Kredi Plaza C blok Kat:17 No:40-41
Ofis:16 34330 Beşiktaş - Istanbul
info@vetagro.com
Tel: +90 212 318 9059
Fax: +90 212 317 4701

Vetagro Inc.
230 South Clark Street, # 320,
Chicago, IL 60604 - USA
infousa@vetagro.com
Tel: +1 773 610 2087
Fax: +1 773 442 0131