

# Agricultural and Food Science - abstract



**Vol. 11 (2002), No. 2, p. 79-91**

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**Concentration and estimated flow of soluble non-ammonia nitrogen entering the omasum of dairy cows as influenced by different protein supplements**

**Keywords** soluble non-ammonia nitrogen, protein supplements, omasum, dairy cows, peptides,

## Abstract

Four ruminally fistulated Finnish Ayrshire cows were used to study the effects of different protein supplements on concentration and flow of soluble non-ammonia N (SNAN) in the omasum. The treatments in a 4 × 4 Latin square design were a basal diet of grass silage and barley and the basal diet supplemented with fishmeal, soybean meal and maize gluten meal. Protein supplements significantly increased concentrations of peptide N (P=0.009) and total SNAN (P=0.03) fractions in omasal digesta. Peptide constituted the largest fraction of SNAN entering the omasum indicating that hydrolysis of peptides to amino acids is the most limiting step in rumen proteolysis. The microbial contribution to SNAN was on an average 15% indicating that a large proportion of SNAN flow leaving the rumen was of microbial origin. The estimated SNAN flow per kg dry matter intake from the basal diet and protein supplemented diets indicated that approximately 49, 22 and 37 g kg<sup>-1</sup> of fishmeal, soybean meal and maize gluten meal protein, respectively, escaped from ruminal degradation as SNAN.

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Update 24.7.2002.