

ABSTRACTS

#1 EFFECT OF NITROGEN SUPPLEMENTATION ON IN VITRO DIGESTION KINETICS OF PERENNIAL GRASSES. D. J. R. Cherney and J. H. Cherney, Departments of Animal Science and Soil, Crop, and Atmospheric Sciences, Cornell University, Ithaca, NY 14853 (607-255-0604)

Objectives were to assess the influence of N fertilization of reed canarygrass and timothy on fiber digestion kinetics. Rate and extent of digestion were higher for grass fertilized with 214 kg of N/ha ($k=.06$, extent=73%) than for unfertilized grass ($k=.04$, extent=67%) when no supplemental N was added to in vitro incubations. When urea (.5g/L of buffer) was added to the incubations, there was no difference in extent of fiber digestion between fertilized and unfertilized grass, indicating that N limited fiber digestion of unfertilized grass in vitro (CP=9.5%). Rate of fiber digest of N/ha compared to unfertilized grass. In another study, trypticase (4g/L of buffer) added to in vitro incubations increased extent of digestion of grasses by 2% compared to no N supplementation, while added urea increased fiber digestion of unfertilized grass by 10%. After 3h, urea treatment resulted in ammonia concentrations 8-fold higher, and trypticase treatment ammonia concentrations 2-fold higher, than in untreated samples. It appears that trypticase did not meet N requirements of ruminal microorganisms for maximum fiber digestion during the first 24h of digestion. Podium.

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