Influence of condensed tannins on gut morphology in sheep fed *Lotus pedunculatus*

J. P. Walton¹, G. C. Waghorn², J. C. Plaizier¹, M. Birtles³, and B. W. McBride¹,⁴

¹Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada N1G 2W1; ²AgResearch Grasslands, Palmerston North, New Zealand; ³Department of Anatomy and Physiology, Massey University, Palmerston North, New Zealand.


Feeding forages containing condensed tannins (CT) can reduce intestinal absorption of amino acids (AA) and peptides. This experiment tested the hypothesis that CT in *Lotus pedunculatus* altered small intestinal mucosal morphology reducing absorptive capacity of the gut. Thirteen young Romney wethers were fed ad libitum either *Lotus pedunculatus* (cv. Grasslands Maku, N = 7) containing 5.5% CT in the dry matter (DM) or white clover-perennial ryegrass pasture (N = 6), which did not contain CT, for 4 wk. The wethers were euthanized at the end of the feeding trial and samples were collected for histological examination from the proximal and distal duodenum, proximal, mid-, and distal jejunum and ileum, and ventral rumen. There was no effect of feeding *L. pedunculatus* containing 5.5% CT (P > 0.05) on rumen or gut morphological parameters in sheep. The cause of reduced AA absorption in the presence of CT is not known, but this study suggests it is not due to changes in intestinal morphology.

Key words: Lotus pedunculatus, condensed tannins, gut morphology, sheep