

THE NUTRITIVE VALUE OF HAY AND PODS OF BARREL MEDIC
(Medicago truncatula) FOR SHEEP

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Barrel medic (Medicago truncatula) is an important pasture plant for sheep in the 250 to 400 mm rainfall area of N.S.W. because it provides both high quality forage during its vegetative stage and a survival diet in the form of seed pods when the plant has dried off. A study has been made of digestion in the stomach and intestines of sheep offered the medic either as hay produced from plants harvested at early flowering, or as pods harvested in late summer.

Hay: The composition of hay and the extent of digestion of its chemical components in various parts of the tract were similar to those of lucerne, another medic (Lindsay and Hogan 1972). At the vegetative growth stage the two medics appear to have similar nutritive value.

Pods: Pods comprised approximately 30% seed and 70% husk, and their organic matter contained 3.8% nitrogen, 5.2% long-chain fatty acids (LCFA) and 77.5% acid-detergent fibre including 19.9% lignin. Digestibility in the whole tract was 63.3% for nitrogen, 79.3% for LCFA, 9.7% for fibre and 24.2% for organic matter. A net loss of 40% of dietary nitrogen occurred in the stomach and this was associated with mean levels of rumen ammonia of 52 mg N/100 ml. Approximately 38% of the non-ammonia nitrogen that left the abomasum was apparently digested in the small intestine, and provided about 5 g released amino acids / 100 g organic matter intake. LCFA, present in the diet mainly in polyunsaturated forms, were extensively hydrogenated in the stomach. The total weight of LCFA that left the stomach was approximately equivalent to intake and a net loss of 72% of LCFA was observed in the small intestine. Hence absorbed LCFA were equivalent to 3.7 g/100 g organic matter intake.

Although the pods provided only small amounts of amino acids and LCFA, these nutrients were equivalent respectively to about 20 and 15 g/100 g digestible organic matter. These values indicate that the digested organic matter was a relatively concentrated source of energy and that the balance between amino acids and energy was adequate for most forms of animal production. However, the low digestibility of the fibre fraction clearly limited the nutritional value of the pods.

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