

Evaluation of mulberry (*Morus alba*) as potential feed supplement for ruminants: the effect of plant maturity on in situ disappearance and in vitro intestinal digestibility of plant fractions

ABSTRACT

The in situ nylon bag degradation and in vitro intestinal digestibility of dry matter (DM), and crude protein (CP) of mulberry (*Morus alba*) plant fractions was studied at four harvest stages, 3 (W3), 5 (W5), 7 (W7) and 9 (W9) weeks. Degradability of DM and CP of the whole plant and stem fractions declined significantly ($p < 0.01$) with advancing plant maturity in the order $W3 > W5$ and $W7 > W9$ and $W3 > W5 > W7 > W9$, respectively. The degradation of DM and CP of the leaf fraction was also influenced by plant maturity but no trend was observed. The degradation of DM and CP of the whole plant and leaves increased rapidly during the first 48 and 24 h of incubation, respectively, when maximum degradation was reached. In vitro intestinal digestibility of CP was more influenced by the residence time in the rumen than by plant maturity. This study showed that mulberry is suitable as a supplement, particularly to low-quality roughages, in providing a source of rapidly available nitrogen to the rumen microbes, hence improving the roughage degradability and intake.

Keyword: Low-quality roughages; Maturity; Mulberry; Nutrient degradation; Nylon bag