

Supplementation of *Leucaena leucocephala* on Rice Straw Ammoniated Complete Feed on Fiber Digestibility and *in vitro* Rumen Fermentation Characteristics

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Abstract : Background and Aim: The leaves of the *Leucaena leucocephala* tree have potential as a nitrogen source for ruminants. *Leucaena* leaf meal as protein supplement has been shown to improve the feed quality of ruminants. The effects of different levels of *Leucaena leucocephala* supplementation as substitute of concentrate on fiber digestibility and *in vitro* rumen fermentation characteristics were investigated. This research was conducted *in vitro*. The study used a randomized block design consisting of 3 treatments and 5 replications. The treatments were A. 40% rice straw ammoniated + 60% concentrate, B. 40% rice straw ammoniated + 50% concentrate + 10% *Leucaena leucocephala*, C. 40% rice straw ammoniated + 40% concentrate + 20% *Leucaena leucocephala*, Result: The results showed that the addition of *Leucaena leucocephala* increased the digestibility of Neutral detergent Fiber NDF and Acid Detergent Fiber (ADF) ($p < 0.05$). In this study, rumen NH₃, propionate, amount of escape protein and total Volatyl Fatty Acid (VFA) were found increased significantly at treatment B. No significant difference was observed in acetate and butyrate production. The populations of total protozoa and methane production had significantly decreased ($P < .05$) in supplemented group. Conclusion: Supplementation of *leucaena leucocephala* on completed feed based on ammoniated rice straw *in vitro* can increase fiber digestibility, VFA production and decreased protozoa population and methane production. Supplementation of 10% and 20% *L. leucocephala* were suitable to be used for further studies, therefore *in vivo* experiment is required to study the effects on animal production.

Keywords : digestibility, *Leucaena leucocephala*, complete feed, rice straw ammoniated

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