Effects of Slow Release Urea Supplementation of Sheep Protein Source Feed Protected with Condensed Tannin from Leucaena on Protein Degradation in Rumen and Post-rumen In Vitro

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Abstract	The objectives of the research were to supply nitrogen for protein synthesis of ruminal microbe from slow release urea and to supply post-rumen protein from soybean meal protected with condensed tannin (CT) from crude Leucaena leaves extract. In Experiment 1, slow release urea (SRU) was made by extrusion of cassava waste-urea, tapioca meal-urea and cassava meal-urea. Evaluation of SRU properties was based on residual nitrogen concentration and ruminal fermentation products (total volatile fatty acid and ammonia-nitrogen) in vitro. In Experiment 2, soybean meal protected with CT from crude Leucaena leaves extract as much as 1,68 g tannin/100 g DM soybean meal. SRU that was selected from Experiment 1 was used as the supplement in sheep ration whose protein source was protected with CT. SRU supplement in basal rations was 0, 6.36, 12.75, 19.11% DM. In vitro result in Experiment 1, showed that SRU of cassava waste, tapioca meal and cassava meal were different (P<0,01) on residual nitrogen content, total VFA, ammonia-N, and fermentation time. The optimum SRU obtained from cassava waste by inhibiting nitrogen hydrolysis up to 14 h. In Experiment 2, SRU supplementation of cassava waste on basal ration whose protein source was protected with CT increased dry matter (DM) degradability (P<0,01), total VFA (P<0,01), ammonia-N (P<0,01), and did not affect crude protein (CP) ruminal degradation. Post-ruminal degradability of DM and CP increased (P<0.01) in line with the increasing supplement, and reached the optimum level at 12,75 ÃƒÂ¢Ã¢Â‚Â¬Ã¢Â€Âœ 19,11% DM. In conclusion, cassava waste was a potent SRU through extrusion process and could be harnessed as SRU supplement in ration with protein source protected with condensed tannin to improve ruminal microbe protein synthesis.
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