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Response of Sheep to Supplementations with *Leucanea Leucocephala* Leaves on Weight Gain and Carcass Components

ABERRA MELESSE¹, ASSEFA TADESSE², MARKUS RODEHUTSCORD³

¹Hawassa University, Animal and Range Sciences, Ethiopia

²Hawassa University (CLIFOOD-DAAD funded project), School of Animal and Range Sciences, Ethiopia

³University of Hohenheim, Dept. of Animal Nutrition, Germany

Abstract

Through *in vitro* studies, *Leucanea leucocephala* leaf (LLL) was identified as potential candidate in mitigating enteric methane (CH₄). Nevertheless, its efficiency as suitable animal feed source has not been yet determined in farm animals. This study was thus conducted to assess the suitability of supplementing LLL on body weight gain and carcass components in local sheep. Thirty yearling local sheep with initial body weight of 20.0±1.31 kg were first blocked by live weight into five groups and then individuals from each group were randomly allocated into five treatment diets with six sheep each. All sheep received a basal diet of natural grass hay ad libitum and 357 g/head/day concentrate mix. The treatment diets contain a control diet without supplementation (T1) and diets supplemented with LLL (g/head/day) at a rate of 50 (T2), 100 (T3) and 150 (T4) and 200 (T5). The experiment lasted 91 days exclusive of the adaptation period. The results revealed that the average daily weight gain did not differ ($p > 0.05$) among sheep fed with various levels of LLL supplementations. However, sheep fed with T3 diet had higher ($p < 0.05$) slaughter weight (25.8 kg) than those of T1 (22.9 kg) diet. Although insignificant, the average hot carcass weight was highest in sheep fed with T2 (10.6 kg) and T3 (10.2 kg) diets. The dressing percentage values ranged from 39.4 in T3 to 42.0% in T1 and were not affected by LLL supplementations. The highest foreleg carcass weight (1.97 kg) was obtained from sheep fed with T2 diet being significantly higher than those of T1 (1.80). Sheep fed with T3 diet had the highest hind leg (2.36 kg) and thorax (2.75 kg) values. The lumbar weight was highest in sheep reared in T2 and T5 diets while the lowest in T1. The highest rib-eye area (cm²) was observed in sheep fed with T2 (14.7) followed by T3 (14.5) diets while the lowest in those of T1 (13.0). In conclusion, LLL supplementation improved carcass components of sheep compared with the control diet indicating its potential as alternative protein supplement to poor quality forages with possible reduction in enteric CH₄ production.

Keywords: Carcass components, enteric methane, *Leucanea leucocephala* leaf, local sheep, weight gain