

Evaluation of Nutrient Intake, Body Weight Gain and Carcass Characteristics of Growing Washera Lamb Fed Grass Hay as a Basal Diet with Supplementation of Dried Atella and Niger Seed Cake in Different Combinations

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Abstract : Ethiopia has a huge livestock population, including sheep, that has been contributing a considerable portion to the economy of the country and still promising to rally around the economic advancement of the country. However, feed shortage is a limiting factor in the production and productivity of sheep among Ethiopian smallholder farmers. Therefore, the aim of this study was to prove the role of the locally available brewery by-products called dried Atella as a supplement in feed intake, digestibility, live weight gain, carcass yield, and economic benefit in comparison with commercially purchased supplements known as niger seed cake (NSC). This on-station feeding experiment was conducted on the Zenzelma Campus of Bahir Dar University animal farm. The experimental design used for this research was a completely randomized design (CRD) with five replications. The crude protein (CP) content of dried Atella, wheat bran (WB), natural pasture hay (NPH) and NSC were about 25.07%, 16.57%, 4.48% and 38.04%, respectively, while the neutral detergent fibre (NDF), acid detergent fibre (ADF) and acid detergent lignin (ADL) content of dried Atella, WB, NPH and NSC were around 31.75%, 8.31%, 8.14%; 42.05%, 22.64%, 4.04%; 74.21%, 50.81%, 8.66%; 42.31%, 26.95% and 6.9%, respectively. The result depicted that a higher ($P < 0.001$) feed intake, nutrient intake, and digestibility for lambs supplemented with Atella than those supplemented with NSC. Furthermore, daily body weight gain and carcass characteristics were better ($P < 0.05$) for the sheep supplemented with dried Atella than NSC. On the other hand, in terms of profitability, although there was no substantial difference ($P > 0.05$) between T2 (animals fed NPH, NSC and WB) and T3 (animals fed NPH, Atella and WB), slightly better benefit was recorded in T3 groups. However, loss of money was recorded in T1 (animals fed NPH and WB). Hence, from the biological performance of lambs, it was concluded that Atella could be a potential supplementary feed for sheep fattening among smallholder farmers than NSC despite no profitability difference. Nevertheless, further investigation is recommended to examine the consequence of supplementation of NPH with NSC and NPH with Atella on fatty acid profile analysis, the physicochemical composition of meat, and meat composition.

Keywords : Attela, Bahir Dar university, Carcass yield, digestibility, natural pasture hay, Niger seed cake, smallholder farmers, weight gain, Ethiopia

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