EFFECT OF FEEDING UREA-IMPREGNATED NANO-ZEOLITE IN RATIONS ON THE PERFORMANCE OF LOCAL SHEEP

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Abstract

Background - Sheep, as small ruminants, adapt quickly to a variety of environments. Farmers face challenges in improving production efficiency and performance quality, with feed management playing a key role. The right feed composition can improve growth and meat quality, which accounts for 70% of production costs. Innovations such as alternative feeds and additives, such as urea and nano-zeolite, help reduce costs. Nano-zeolite increases the availability and absorption of nutrients, thereby improving growth.

Purpose - This study aims to examine the effect of urea-impregnated nanozeolite in rations on performance of local sheep.

methodology - A total of 24 male local sheep were used and allocated into a completely randomized design with two variables. Treatments consisted of control feed without supplementation (R1), concentrate feed supplemented with urea (R2), concentrate feed supplemented with active nano-zeolite (R3), concentrate feed supplemented with inactive nano-zeolite (R4), concentrate ration supplemented with urea-impregnated active nano-zeolite (R5), and concentrate ration supplemented with inactive nanozeolite impregnated with urea (R6). Measurements were made of performance parameters including feed intake, body weight gain, and feed conversion ratio.

Findings - The research that feed treatment, including the use of active and non-active nano-zeolite, significantly (P>0.05) influenced feed intake, body weight gain (PBB), and feed conversion in local sheep. Treatments R3 and R4 resulted in higher feed intake compared to other treatments, which was influenced by the level of feed palatability. In addition, treatment R3 showed significantly higher PBB than R2, while feed conversion in R3 and R5 was more efficient than R2. Recommendation, feed optimization using active or non-active nano-zeolite is recommended to enhance consumption and conversion efficiency by improving palatability and growth performance. Research is needed to develop sustainable, cost-effective feed formulations using local alternatives. Regular evaluation of feed palatability is crucial to support optimal consumption. Additionally, advancing active nano-zeolite technology can boost nutrient efficiency and livestock production.

Originality - Assessment of performance carcass production of local sheep fed diets containing urea-impregnated nanozeolite.

Keywords: Sheep, Feed, Nano-zeolit, Urea, Performance