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Mineral Utilisation by West African Dwarf Goat-does Fed Urea-treated Ensiled Cocoa Pod Husk Meal-diets

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Abstract

The nutritional potentials inherent in cocoa pod husk (CPH) were not being satisfactorily harnessed in goat nutrition especially in Nigeria, due to its high fibre and theobromine concentration. Consequently, dried composite CPH were milled, soaked in 5 % urea solution for 7 days and ensiled for 28 days under anaerobic condition to upgrade its nutritive contents to make urea-treated ensiled cocoa pod husk meal (UTCPHM). Thereafter, the UTCPHM were incorporated in the diets of West African Dwarf (WAD) goat-does at replacement levels of 0 (A), 10 (B), 15 (C), 20 (D), 25 (E) and 30 (F) with cassava peels in a concentrate diets. The diets were fed to 30 goat-does (5 does per treatment) in completely randomised design for 90 days to evaluate their response. Samples of feed, faeces and urine were assayed for proximate, fibre fractions, anti-nutrients and minerals composition. Nutrient intake, mineral intake and feed to gain ratio were determined. Results revealed that; the treatment had significant ($p < 0.05$) influence on all the parameters observed except dry matter content of the diets. The treatment improved the calcium content by (24.39 % Ca) and phosphorus (81.81 % P) over the raw CPH meal. Crude protein (CP) of the diets ranged (10.52 % - 12.84 %), CF (17.28 % - 17.37 %), Ca (0.54 % - 0.71 %), P (0.26–0.35 %), K (0.85–0.99 %) and theobromine concentration (1.47 %) was highest in 30 % UTCPHM diet. The lignin content of the diets decreased across treatments; and ranged from 22.48 % (F) to 25.14 % (A). However, CPI (63.53 g/day), feed to gain ratio (13.73 g/day) was best in goat-does fed diet F. Thus, inclusion of UTCPHM in goat-does diets up to 30 % had enough mineral compositions that would support the metabolic activities of the goats for proper growth and development.

Keywords: Calcium bio-availability, crude protein, ensiled cocoa pod husk, ruminant farmers

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