Tropentag, September 20-22, 2023, hybrid conference

"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Evaluation of alternative feed resource in intake, milk yield and milk quality of lactating West African dwarf goats

Gladys Ibhaze, Gbenga Ogunjemite, Oluwaseun Adebayo

Federal University of Technology, Animal Production and Health, Nigeria

Abstract

Dry season feeding is a major challenge to ruminant farmers and animals as this results in low productivity, death of the animals and economic loss to the farmer. Hence, the need to search for alternative sustainable feed resources in circumventing this occurrence. Sixteen West African Dwarf (WAD) does were fed cassava peel-*Gmelina arborea* leaves silage to evaluate their intake, milk yield and milk constituents. Four experimental diets were anaerobically made from varying proportions of cassava peel (CSP) and *Gmelina arborea* (GML) leaves as shown; 100GML, 90GML+10CSP, 70GML+30CSP and 50GML+50CSP. The does were divided into four (4) groups of four animals per group as each animal served as a replicate for each treatment in a completely randomised design (CRD). The experiment lasted for 56 days. Data on voluntary feed intake was collected daily while the milk yield was obtained once a week. Results showed significant ($p < 0.05$) differences in intake, feed conversion ratio, and milk yield. Goats fed 50GML+ 50 CSP silage had the highest (520.96 g day^{-1}) intake and the least (289.23 g day^{-1}) was observed in goats fed 100GML. Highest (2.28) FCR was observed in goats fed 100GML while the least 2.07 g day^{-1}) was observed in goats fed 50GML+ 50 CSP silage. The milk yield was highest (323.51 g day^{-1}) in goats fed 50GML+ 50 CSP silage while the least (192.89 g day^{-1}) was observed in goats fed 100GML. Milk constituents did not vary significantly ($p > 0.05$) as values ranged from 3.57–3.86 % for protein while fat, lactose, ash, total solids, solids-not –fat varied from 4.02–4.32 %, 4.11–4.59 %, 0.71–0.89 %, 12.95–13.18 % and 8.74–8.98 % respectively. Milk energy did not differ ($p > 0.05$) among treatment groups as the values ranged from 3.16–3.24 (MJ kg^{-1}). Negative but significant ($p < 0.05$) correlation coefficients existed between mean milk yield and milk components. Values ranged from r=0.29* between mean milk yield and total solid to r=0.51* for lactose. Positive and significant ($p < 0.05$) relationship were observed between protein and total solid (0.71*) and between fat and total solid (0.59*). Conclusively, feeding cassava peel-*Gmelina arborea* leaves silage at equal proportions (50:50) as off season feed could best sustain and support milk production in WAD goats.

Keywords: Cassava peel, *Gmelina arborea*, lactating, milk constituents, milk yield, WAD goats

Contact Address: Gladys Ibhaze, Federal University of Technology, Animal Production and Health, Akure, Nigeria, e-mail: begladalways@yahoo.com