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Performance of West African Dwarf (WAD) bucks fed differently processed poultry droppings

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A 56 day experiment was conducted to evaluate the response of West African Dwarf (WAD) bucks fed processed poultry droppings. Nine (9) West African Dwarf (WAD) bucks were assigned to three treatment groups in a completely randomized design (CRD) experiment with 3 bucks per treatment. The diets contained poultry droppings at 0% (T_1), 10% sun dried poultry droppings (SDPD)(T_2) and 10% toasted poultry droppings (TPD)(T_3). The parameters evaluated included: dry matter intake (DMI), changes in body weight, feed conversion ratio (FCR), heart girth change (HGC), body length change (BLC) and height at withers (HWC), hematological and biochemical indices, and carcass characteristics of the bucks. Proximate analyses of the sun-dried poultry droppings, toasted poultry droppings, the treatment diets and the forages (*Panicum maximum* and *Cetrocema spp*.) were conducted. Concentrate dry matter intakes were 184.65g, 150.05g and 183.62g for T_1, T_2 and T_3 respectively. Forage dry matter intakes were 494.04g 569.70g and 555.66g for T_1, T_2, and T_3 respectively. Concentrate dry matter intake was similar ($p>0.05$) in T_1 and T_3 groups, but significantly ($p<0.05$) higher than the T_2 group. The T_2 group consumed significantly ($p<0.05$) more forage than the T_1 and T_3 groups. HGC and HWC were 5.67cm, 2.33cm and 4.67cm, and 5.00cm 4.67cm and 4.00cm respectively. T_1 and T_3 had higher HGC than T_2 group, while the T_2 group recorded higher HWC than the T_1 and T_3 groups. The hemoglobin (Hb) values varied significantly ($p<0.05$) among the treatment means, and they were, 12.30, 11.30 and 12.00g/dl respectively. PCV (%) and WBC(x103/mm^3 varied significantly ($p<0.05$) and the values were 37.00, 34.00 and 36.00 (%), and 39.00, 56.07 and 42.50(x103/mm3 respectively. Neutrophil and lymphocyte were also influenced significantly, the values were, 15.00, 10, and 31.00%, and 83.00, 86.00, and 66.00% respectively. Only serum urea was affected among the biochemical components, and the values were 0.87, 0.90 and 0.97 mg/dl respectively. Dressed weight were 34.62%, 37.75% and 42.60% for T_1, T_2 and T_3 respectively; the T_2 and T_3 groups were similar ($P>0.05$) but T_3 was higher than T_1. The values for shoulder were 10.67%, 10, 74% and 8.05%; the full gut values were 47.20% 38.56% and 28.68% for T_1. T_2 and T_3 respectively. Liver, kidney and heart were 2.90%, 2.22% and 1.93%; 0.55, 0.47% and 0.42%, and 0.72%, 0.57% and 0.58% for T_1, T_2 and T_3 respectively. T_1 showed significantly ($P<0.05$) higher relative weight values for liver and heart than the T_3 group. Inclusion of processed poultry droppings up to 10% in the diets of WAD bucks did not affect their performance negatively. However simple sun drying is recommended based on the results of this study and it is also a cheaper and straight forward processing method for poultry droppings.

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Simulation of methane emissions from stall fed dairy animals under different dietary strategies in Uganda

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The LIFE-SIM models were used to estimate methane emissions from cows maintained under eight different feeding strategies. Feeding strategies with adequate protein requirements led to production of more milk and also increased methane emissions. The amount of methane produced per kilogram of milk was lowest in feeding strategy that involved supplementing animals with fresh maize stover and sweet potato vines after feeding Napier grass. The study revealed that there is a great possibility for development of feed management strategies to mitigate methane emissions from cattle through enhancing animal production and reducing the amount of methane produced per unit of milk.

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