

Effect of cassava (*Manihot esculenta*) root meal supplemented with Nile Perch (*Lates niloticus*) fish waste on the rumen environment

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Abstract. The supplementary effect of cassava (*Manihot esculenta*) root meal (CRM) and Nile Perch (*Lates niloticus*) fish waste (FW) on the rumen environment was compared to that hominy meal (HM) and cotton seed cake (CSC). The feed's degradability characteristics and chemical contents, rumen pH and rumen ammonia nitrogen (NH₃-N) levels in cows fed on four ration combinations (HM + CSC, CRM +CSC; HM + FW and CRM +FW) denoted as T₁, T₂, T₃, T₄, respectively) were determined. Results showed that DM degradability at 48h for CRM was higher (P<0.05) than that of HM (920 vs 835 g/kg). HM had higher (P<0.05) CP content than CRM (946 vs 837 g/kg) respectively. Both DM and CP contents of CSC were higher (P< 0.05) than those of FW (739 and 887 vs 367 and 598 g/kg) respectively. The degradability of DM for the TR₁ and TR₂ rations was higher (P< 0.05) than that of TR₃ and TR₄ (801 and

799 vs 727 and 616 g/kg DM respectively. TR₂ had higher (P< 0.05) rates of DM degradability than the rest of the rations. The ruminal pH and NH₃-N values differed (P< 0.05) between treatments. Treatments containing FW (TR₃ and TR₄) had higher (P< 0.05) NH₃-N than those containing CSC (TR₁ and TR₂) (284.7 and 203.7 vs 135.8, and 183.9 mg/l). It is concluded that CRM when fed in combination with FW gave higher DMD values and provided a better fermentation environment than HM and CSC. It is further concluded that CRM and FW could be good substitutes for HM and CSC as sources of energy and nitrogen for dairy cattle and other ruminant animals.