Haematology and Serum analysis of West African Dwarf (WAD) rams fed silage combinations of Maize Forage and Mucuna pruriens L. foliage

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Abstract

Forage is of good quality when it can meet the nutrient requirements of ruminants all year round without deleterious effects on the health status of animals. Ruminants in the tropics are mostly sustained on native pastures, which are not available in the dry season. Scarcity of native pasture during the dry season predisposes flocks to weight loss and high mortality. Ensiling to preserve forage resources such as maize forage and Mucuna pruriens can circumvent this problem all year round. However, information on the haematology and serum biochemical status of WAD rams fed silage combinations maize forage and Mucuna pruriens foliage has not been adequately documented. Therefore, the haematology and serum biochemical analysis of West African dwarf (WAD) rams fed silage combinations of Maize Forage (MF) and Mucuna pruriens foliage (MPF) was assessed. Downy mildew and streak resistant (DMR-SR) yellow variety maize was planted and harvested as MF at six weeks of growth and ensiled with MPF at four levels: 1:0, 3:1, 1:1 and 1:3 for 21 days. The silages were then fed to 20 WAD rams (12.00±0.25 kg) in a completely randomised design for 105 days. Haemoglobin (g/dL), neutrophils (%), glucose, High Density Lipoproteins (HDL, mg/dL) and Low Density Lipoproteins (LDL, mg/dL) of blood (5 mL) collected from the rams before and after 105 days feeding trial were determined using standard procedures. Data obtained were analysed using descriptive statistics and ANOVA at α Higher haemoglobin, neutrophils and 0.05. HDL were recorded for T2 (9.49±0.91, 41.2±3.8%, 54.70±7.20) and least in rams on T4 (6.11±0.20, 35.2±3.1%, 30.50±5.30), respectively. The LDL was highest in rams on T4 (3.25±0.60) and least in rams on T1 (1.20±0.30). Glucose level was significantly higher in T1 (73.00 mg/dL) compared with T2 (63.48 mg/dL), T3 (58.24 mg/dL) and T4 (52.28 mg/dL), respectively. Ensiling maize forage with Mucuna pruriens foliage at 3:1 improved performance, enhanced silage preference and increased dressing percentage in West African dwarf rams without any deleterious effect on blood profile.

Key words: Mucuna pruriens foliage; Maize forage; Silage combinations; Blood profile; WAD rams