

MILK YIELD, MILK COMPOSITION AND SOME BLOOD METABOLITES OF LACTATING BUFFALOES FED RATIONS CONTAINING SORGHUM AND MAIZE SILAGE OR ALFALFA FORAGE

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ABSTRACT

The present study was carried out at the Experimental Farm of Animal Production Department, Faculty of Agriculture, South Valley University, Qena. Six lactating buffaloes averaged 600 ± 15 kg live body weight at their 3rd to 5th lactation season and after reaching the peak of milk production were used in this study. The aims of this study were to investigate the performance of lactating buffaloes as affected by feeding maize and sorghum silage in comparison with those fed fresh alfalfa on milk yield, composition and some blood constituents. The experimental design that used was switch back design in three periods of one month each. The first 23 days of each period were for diets adaptation, while the last 7 days were for data and samples collection. Animals were individually fed on the following experimental treatments. The first treatment (T1) contained 48.0 % concentrate feed mixture (CFM), 24.0 % fresh alfalfa and 28.0 % rice straw. The second treatment (T2) contained 48.0 % concentrate mixture, 38.0 % maize silage and 14.0% rice straw, while the third treatment (T3) contained 46.0 % concentrate feed mixture, 40.0 % sorghum silage and 14.0 % rice straw. The feed efficiency was calculated as kg 7% fat corrected milk (FCM) / kg total dry matter intake (TDMI). Profit (L.E) above feeding cost was calculated. The results revealed that there is a significant difference ($P < 0.05$) in the nutritive value in term of TDN and DCP among the three different treatments. The nutritive values (%) were 58.25, 65.55 and 63.61 for TDN and 7.01, 6.09 and 5.80 for DCP in T1, T2 and T3, respectively. Average total daily DM intake / buffalo (TDMI) was insignificantly different among treatments. Average daily milk yield and 7% fat corrected milk (7%FCM) were significantly ($p < 0.05$) higher in T2 and T3 as compared to T1. The efficiency of 7% FCM production per kg TDMI was significantly increased ($p < 0.05$) by 14.43 % for buffaloes fed T2 and T3 compared to buffaloes T1. The profit above total costs were 7.88, 11.09 and 13.06 L.E /h/day for T1, T2 and T3, respectively. Moreover, the results showed that there was a significant difference among the experimental treatments in some blood components (glucose, total protein, total lipids, triiodothyronine and thyroxin). There were insignificant difference among treatments in serum albumin, globulin, and cholesterol concentrations. The average concentration of glucose, total lipids and thyroid hormone was lower ($P < 0.05$) in T1 as compared to T2 and T3, while the opposite trend was observed in total protein. It could be concluded that preserving amount of maize and sorghum plants as silage can be successfully used for feeding ruminants without any adverse effect on productive performance and physiological responses. Therefore, offering facilities are need to make silage from fresh corn and sorghum plants to the farmers is very important and will help to apply this technology and encourage the farmers to use these products for feeding to reduce feed cost and save considerable of expensive concentrates silage specially in summer for lactating buffaloes. epically under upper Egypt conditions.

Keywords: milk yield, lactating buffaloes, sorghum and maize, Blood metabolites, silage