EFFECT OF DIFFERENT LEVELS OF CRUDE FIBER AND FRACTIONS IN BUFFALO RATION ON MILK YIELD AND COMPOSITION

BY

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ABSTRACT

Soliman Weld Abd El-Kader Ibrahiem. Effect of different levels of crude fiber and fractions in buffalo ration on milk yield and composition. Unpublished Ph.D thesis, Departement of animal nutrition, Animal Production Research Institute, Agric. Rec. center, Dokki , Giza, Egypt, 2005 .

Thirty lactating buffaloes in their last month before expected parturition were used in the feeding trial to study the effect of different levels of crude fiber and their fractions in buffalo rations on milk yield and composition. Animals were grouped into 5 feeding treatments, according to their weight and milk yield. The control animals were fed rations containing 60% concentrate feed mixture (CFM) 40% roughage, the experimental rations were similar in the roughage portion;(rice straw +silage + berseem hay) and five levels of dried sugar beet pulp (DSBP) were used to replace 0, 10, 15, 20 and 25% of pelted (CFM); The treatments were (R1) control, 0% SBP, the ration contains (CF, 22.3%; NDF, 45.61% and ADF, 26.77%), (R2) 10% SBP was included in pelleted (CFM), the ration contains (CF, 25.24%; NDF, 49.72% and ADF, 28.65%), (R3) 15% SBP was included in pelted (CFM), the ration contains (CF, 28.75%; NDF, 54.38% and ADF, 32.64%) , (R4) 20% SBP was included in pelted (CFM), the ration contains (CF, 31.25%; NDF, 59.63% and ADF, 34.93%) and (R5) 25% SBP was included in pelted (CFM), the ration contains (CF, 33.76%; NDF, 64.89% and ADF, 36.82%). The treatments extended for 180 days after parturition. Inclusion of dried sugar beet pulp increased NDF content from 45.61 in R1 to 49.72, 54.38, 59.63 and 64.89 for R2, R3, R4 and R5 respectively. Replacing the (CFM) with SBP, resulted an increase in ration NDF content significantly, increased DMI, concentrate DMI, roughage DMI and DMI/$W^{0.75}$ compared to the control group (R1). Similar results were obtained for TDN, SV and DCP intakes. Milk yield increased significantly with substituting gradual levels of SBP that was reflected on CF, NDF and ADF content ($P>0.05$). Also, the same results were recorded with 4% FCM yield. No significant differences were

observed in body weight changes. Milk fat, lactose , TS and SNF content were higher for groups received SBP particularly R4 than the control group, but milk CP and ash contents were not significantly affected by replacing the (CFM) with DSBP. On the other hand milk nutrients yields were higher for groups R2, R3, R4 and R5 ($P<0.01$) than R1, R2 and R4 showed higher DM, SV and DCP consumed per 1 kg 4% FCM than the control group (R1), while concentrate DM, SV and DCP consumed per 1 kg 4% FCM were gradually decreased with increase DSBP inclusion in animal ration. On the other hand roughage DM, SV and DCP consumed per 1 kg 4% FCM were gradually increased with increase DSBP inclusion in animal ration. Replacement CFM by 20% by DSBP in ration of lactating buffaloes led to decrease cost of kg milk production by about 10.9 % of the total cost of kg milk cost. Blood serum TP concentration was higher for groups R2, R3, R4 and R5 than R1. Significant differences were observed in albumin, globulin, A:G ratio, urea, GPT and GOT of collected blood samples.

Key words: NDF, dried sugar beet pulp, Lactating buffaloes.

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