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Study on the Supplementation of Urea Molasses Mineral Block on Production Performance of Lactating Buffaloes

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Abstract

A field trial was conducted on 24 lactating buffaloes (divided in to two equal groups) of mid lactation during February to March 2017 to assess the effect of UMMB in Tikamgarh district. Overall milk yield was increased 0.99 kg (27.73%) per day as compared to control group. Dry matter intake was significantly higher ($P<0.05$) in T_1 than T_2 group of animals. Average consumption of UMMB per buffalo was 573 gram per day and net profit from sale of extra milk was Rs. 27.28 per day. However, benefit cost ratio was 1:1.56 and 1:1.98 for T_1 and T_2 respectively. Pregnancy diagnosis was done 45 days of post insemination. 80% of anoestrous animal came into estrous in treated group while 40% of anoestrous animals came into estrous in T_1 groups. Serum status of protein and cholesterol was significantly ($P<0.05$) higher in T_2 than control group T_1. Thus, UMMB supplementation to lactating buffaloes increased the milk production and economic status of dairy farmers.

Keywords: *Milk production, Reproductive Efficiency, Buffaloes and UMMB*

Introduction

Poor reproductive performance leads to longer calving interval, low growth rate and low milk yield have been reported in buffaloes[2,5]. In India buffaloes are mainly fed poor quality roughages such as straw and stovers that are highly lignified and contain low content of both fermentable protein and carbohydrates. Poor performance of buffaloes mainly due to poor quality feedstuff and imbalance feeding. To improve the productivity of buffaloes, supplementation of nutrients, which can fulfill the deficiency of nutrients, are essential as the feed utilization can be increased by supplementation of critical nutrient in ration [6]. The supplementation of urea molasses block (UMMB) to buffaloes fed straw based diet has increased the moderate milk production[3]. Feeding of urea molasses mineral block (UMMB) has shown promising results in improving the nutrients utilization and also the productivity of animals in laboratory trails and a number of station trails have been conducted in India on the animal response and economic benefits of using UMMB[1]. Results found that 35% concentrated allowances could be reduced by feeding UMMB without any loss of milk production. However, most of the studies were conducted at research station under extremely controlled conditions and very less attempts have been made to evaluate the effect of UMMB supplementation under rural area. Therefore this study was undertaken to find out the effect of urea molasses mineral block supplementation on productivity of buffaloes in Tikamgarh, Bundelkhand area.

Materials and Methods

A field trial was conducted on 24 lactating buffaloes (divided in to two equal groups) of mid lactation during February to March 2017 to assess the effect of UMMB in Tikamgarh district. The urea molasses mineral block used for the purpose was prepared by Krishi Vigyan Kendra, Tikamgarh by using urea (10%),

molasses (25%), wheat bran (33%), Mustard cake (20%), mineral mixture (5.0%), common salt (1.0%) and cement (6%). The UMMB was kept in front of the animals in a ladoo form and allow free licking to the buffaloes. Feed and fodder supplied to the buffaloes and management practices were same. Wheat straw was fed as dry fodder and green fodder availability was limited. Daily milk yield of individual animal was recorded through milk recording index card by farmers and also by investigator at weekly interval for fair degree of precision. Each ladoo weighed about 500 grams. The consumption of UMMB was monitored weekly by weighing the blocks regularly. Data were subjected to analyze mean, percentage and standard error.

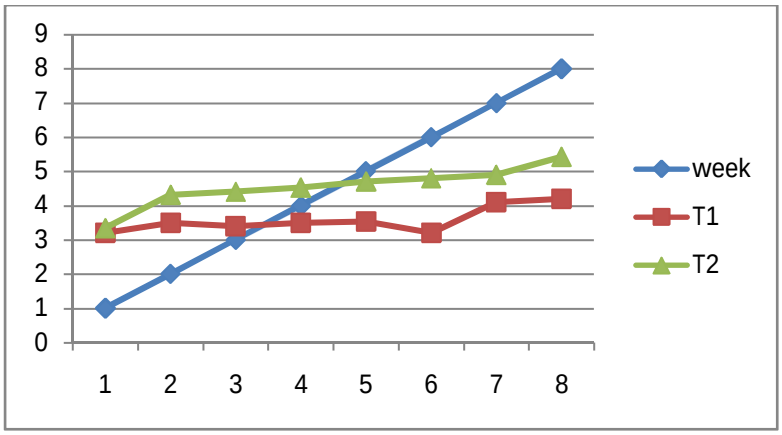
Results and Discussion

Daily milk yield per buffalo per day in different villages were recorded and depicted in Table 1. It revealed that overall average milk production of buffaloes was 3.57±0.35 kg /day in control group and in treatment group 4.56±0.34 kg / day. It clearly indicated the average per day milk yield was increased 0.99 kg. (27.73%). These findings are supported by other writer[4] who observed that average total daily milk production per animal increased by 17.7%. The increase in milk yield may be due to higher supply of crude protein, energy and minerals. It is clearly observed in this study that UMMB licking to the lactating buffaloes has significant effect on milk yield.

Economic performance of supplementation of UMMB showed that overall intake of urea molasses mineral block was 573 g / day / buffalo. It was observed that as intake of UMMB increased milk yield also increased accordingly. Overall extra income from sale of extra milk was Rs. 27.28 / day / buffalo. Benefit cost ratio (B : C) was found 1.56 and 1.98 in T_1 and T_2, respectively.

Table 1 :**Average milk production and economic performance of buffalo**

Parameters	T_1	T_2
Average milk yield (kg/d)	3.57±0.38	4.56±0.60
Average cost of milk production (Rs./animal/month)	4112	4137
Average gross return (Rs./animal/month)	6426	8208
Average net return (Rs./animal/month)	2314	4071
Benefit cost ratio	1.56	1.98



Average weekly Milk Yield (kg/day/buffalo)

Table 2 :**Effect of UMMB on the reproductive performance**.

Parameter	Control (T_1)	Treatment (T_2)
Total number of animals	12	12
Number of animals in estrous	6 (50%)	10 (83%)
Number of animals inseminated	6 (50%)	10 (83%)
Number conceived to Ist AI	3	6
Number conceived to IIst AI	2	3
Overall Pregnancy	5 (42%)	9 (75%)
Conception periods 45-90 days	3 (25%)	6 (50%)
Conception periods 90-120 days	2 (17%)	3 (25%)

Out of 12 animals 10 came into estrous (83%) as compared to control group (50%). Overall pregnancy rate of treated group was found to be 75% (9/12) as compared to controlled group 5 (42%).

50% animals were conceived within 40-60 days in UMMB supplemented group. However, only 25% animals were conceived in control group over the same regime period. Whereas rest of 25% animal were considered within 90-120 days in treated group while 17% animals were conceived in control group. Out of 12 animals 10 (83%) animal showed estrous which indicates a supportive effect of UMMB supplementation on the reproductive performance. Pregnancy rate increased by 33% as compared to control group (75% Vs 42%).

Hence, in dairy animals nutrition is one of the core factors for anoestrous and other reproductive disorders. UMMB supplementation may become one of the options to improve the productive and reproductive performance of buffaloes which were reared under nutrients deficient ration.

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