

Evaluation of Urea–Molasses Mineral Mixture Block (UMMB) Fortified With Dried Azolla Powder For Improvement In Conception Rate And Milk Production In Dairy Animals-On Farm Trial (OFT)

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Abstract

To assess the effect of urea molasses mineral mixture block (UMMMB) fortified with Azolla dried powder feeding on regularization of estrus in dairy animal and improving milk production, a study was undertaken in the Bhadohi district of Uttar Pradesh. Observations on all closely monitored dairy animals revealed an average increase of milk production from 0.85 to 1.5 litre per animal per day in 50 % of the animals. The 50 % animals come in heat and conceive so, milk production declines and some animals stop milking. The fodder intake was also increased following UMMMB supplementation and deworming in dairy animals. Moreover, some of the anestrus buffaloes came in heat during the study period however, after 20-30 days of completion of trial 75 % (08/06) of the buffaloes and 80% (16/20) came in heat and conceived to first impregnation, which normally show estrus from November to February. It was concluded that anthelmintic drugs decrease the parasitic load and UMMMB fortified with Azolla dried powder being a good source of energy, protein and minerals improved milk yield, dry matter intake, general health status and reproductive performance of dairy animals.

Key Words: UMMMB, Anoestrus, Dairy Animal, Azolla

Introduction

Dairy sector of India after the cross breeding programme the milk production reaches at top and world no. one country achieved 188 million ton (MT). But now this sector is facing a big challenge due to a major problem in livestock are infertility, repeat breeding and anoestrus which is a stumbling block for the farming community. The farmers and dairy men reared the animals are generally fed variable quantity of low quality feed resources like wheat straw and rice straw which are characteristically low in fermentable nitrogen, mineral, and readily available carbohydrate. These deficiencies result in low animal growth,

poor reproduction, long calving interval and infertility in animals. Inadequate nutrition is one of the factors that frequently limit the full utilization of the productive and reproductive potential of livestock in this region. Developing alternate feeding strategies for ruminants by enhancing the nutritive value of roughage is of prime importance. A urea molasses mineral mixture block (UMMMB) fortified with Azolla dried powder prepared from locally available agricultural byproducts like wheat bran, rice bran, mustered cakes, mineral mixture, common salt and molasses has been adopted as a feed supplement which

improves nutritional status of animals^[3]. Baseline survey to identify the commonly problem in dairy animal and a On farm trial (OFT) were formulated and conducted if different village of the district. However, the successful treatment and control of mineral deficiencies lies in effective and practical methods of supplementation and also the decreases the worm burden. Feeding of only the deficient minerals may

Materials and Methods

Adult Murrah and cross breed buffaloes (8) and cross breed cow (29) from different block and villages IN THE YEARS 2018 and 2019 consecutively as

not improve the general health status, production and reproduction of animals in these areas but also lower down the worm infestation. Hence, the present study was undertaken to evaluate the effect of UMMMB fortified with Azolla dried powder as supplementary feeding and deworming on the general health condition, milk yield and reproductive performance of dairy animals.

given below of Bhadohi district was selected by ICAR-Krishi Vigyan Kendra, Bhadohi, U. P. India.

S. No.	Name of Block	Name of Villages
1.	Aurai	Uchitpur, Gulalpur, Dudaw, Girdh Bargoan, Ghatapur, Jaddupur
2.	Bhadohi	Deegh Koeran, Khetalpur, Palaihyan, Phulwariyan
3.	Deegh	Teelanga

They generally fed their animal through grazing and variable quantity of local grasses and wheat straw by 33 farmers were selected for the present study. Trial was conducted during the period from August to December. The buffaloes were in 5-9 years and cross bred cow of 4-5 years age group. Anoestrus was observed in 06 buffaloes and 20 cows and 18 animals were in lactation. The UMMMB was prepared by cold method by UMMMB making machine prepared by ICAR-Indian Veterinary Research Institute, Bareilly by mixing molasses (40%), urea (10%), rice bran (10%),

mustered cakes (10%), cement (4 %), mineral mixture (Agrimin fort[®])@1%, common salt 4%, lime(CaCO₃) as per Singh (2009) containing DCP-70%, MgSO₄-29%, CuSO₄-0.5%, MnSO₄-0.5% and K. iodate-0.09%, common salt (1%) and Azolla dried powder @ 1% with slight modification. All the animals were dewormed before to allow to lick a 2-2.5 kg block of UMMMB @ 200–250 gms/day daily for 90 days. Close observations were made on buffaloes on changes, if any, in feed intake, milk yield and oestrus activity.



Azolla Dried



UMMMB Ingredients



UMMMB Making



UMMMB distribution to Farmers

Results and Discussion

Most of the selected buffaloes showed poor body condition with rough and dried skin coat. Anoestrus was the major problem as 100 % of the selected buffaloes and cows had not shown estrus for the last over 4 years age and 9-10 month of post calving. The health condition of the selected buffaloes suggested that malnutrition and over worm load might have been the cause of

anoestrus. However, after 90 days of supplementation with UMMMB fortified with dried Azolla marked improvement in the general health condition, shiny and soft pliable skin coat was observed. Observations on all closely monitored buffaloes revealed an average increase in feed intake and milk yield after UMMMB supplementation.

Table 1: Performance of trail on conception rate an milk production following treatment with UMMMB fortified with dried powder of Azolla

Years of Trials	No. of Farmers	No. of Animals	% of Animals Conceived	Production of milk increased lit/day/animal post treatment
2018	24	28	75	0.75
2019	9	10	80	0.87

At initiation of UMMMB supplementation the daily fodder intake was 13 kg (10 kg dry and 3 kg green at grazing time) and daily milk yield 2.55 ± 0.33 kg which was increased to 18 kg (14 kg dry and 4 kg green) and 3.71 ± 0.43 kg, respectively, at the end of trial. The increase in DM intake was due to increase in nutrient intake and their utilization, which is in agreement with the

earlier findings^[5]. The increased milk production may be attributed to higher supply of crude protein, energy and minerals to animals and increased digestibility of the ration^[1]. The table 1 indicates that the conception percentage were 75 to 80 in treated group and milk production were recorded average 1lit/animal/day^[2]. The azolla dried powder fortification enhances the nutritive value of

UMMMB that could be the reason for enhancing the conception rate and milk production in present finding. The mixing of azolla dried powder also minimized the cost of making of UMMMB under farming condition.

UMMMB increases the conception rate might be due to the changing the hormones like thyroxine, progesterone and mineral status like calcium, phosphorus, iodine of the body which leads to optimum function of the reproduction organs^[4]. These optimum levels of hormone initiates

the normal estrus cycle and normalize the herd fertility.

Thus, it can be concluded that deworming along with the UMMMB fortified with dried Azolla powder supplementation enhanced dry matter intake, milk yield, general health status and reproductive performance of the dairy animal.

Acknowledgements

Author is thankful to Director, ATARI, Kanpur India, for funding the OFT run by Krishi Vigyan Kendra under which the work was carried.

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