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TANUVAS mineral mixture for enhancing milk yield of dairy cows

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Abstract

The present Study carried out to study the effect of TANUVAS Mineral mixture supplement on milk production of dairy cattle in five blocks of Erode district. 30 Dairy farmers from each block were selected for this demonstration and constituted a sample size of 30 milking cows with the average milk production of 8.5 litre/day/cow for analyze the milk yield and milk fat & SNF. 30 days Milk yield data collected in two stages viz, before and after administration of TANUVAS Mineral Mixture. Animals fed with TANUVAS Mineral mixture showed increased milk production (1.06 litre/ Day), milk Fat (1.73 %) and SNF percentage (0.77 %) also increased. From this, economic status of the dairy farmers will be increased by getting additional income of Rs 788/ Animal/ month.

Keywords: TANUVAS- mineral mixture, milk yield, dairy cattle

Introduction

The dairy sector is one of the crucial sectors in the Indian economy that not only provides employment to millions of rural households but also contributes to the economy. The small/marginal farmers play a very crucial role in milk production of the country. The major challenge in dairy industry feeding of dairy cows is to find the right balance of these nutrients which includes minerals to enhance the productive and reproductive performance of the animals. Animals mainly depends minerals from regular feed and fodder, unfortunately the demand is not meet out by regular feeding. Dietary deficiencies of micro minerals result in failure of the mineral homeostasis mechanism affecting the productive and reproductive potential of the animal (Srivara Buddhi Bhuvaneswari, 2019) [3]. Frontline demonstration is the concept evolved by Indian Council of Agricultural Research (ICAR) with the objective of demonstrating newly released products and technologies in the farmer's field in order to show the production potential of this particular products or technology to the specific agro climatic conditions.

Materials and Methods

The present study was conducted to assess the performance of TANUVAS mineral mixture in Milk yield of dairy cattle. The total no of 150 milking cows were selected for this demonstration in T.N. Palaym, Anthiyur, Bhavani, Perunduari and Sathiyamangalam blocks of Erode District in Tamil Nadu during the year of 2014-2016. All cows were in different stages of lactation with different types of feeding pattern. The trail animals included low yielding as well as high yielding animals with order of calving ranging from 1st to 10th calving. The selected Dairy farmers were trained on Importance of Mineral Mixture practices in livestock before starting of frontline demonstrations. The demonstrated dairy cows were regularly monitored and periodically observed the production parameters. The milk yield of these cows was recorded for 30 days of pre supplementation of TANUVAS- Mineral Mixture and post supplementation of 30-50 Gram Mineral Mixture per day. The present demonstration assessed the performance dairy animal and individual household level farmers who adopted supplementary feeding of TANUVAS - Mineral Mixture in dairy cattle. TANUVAS – SMART mineral mixture contains only five to seven minerals as against twelve minerals in BIS specification which was released by department of Animal Nutrition, Madras Veterinary College- TANUVAS. Keeping in this view, the present study was carried out to assess the performance of mineral mixture in dairy cattle milk yield in various blocks of Erode district.

Result and Discussion

The results of the demonstration conducted in farmers dairy cows are described in Table 1 and Table II. Animals fed with TANUVAS Mineral mixture showed increased milk production (1.06 litre/Day) in 30 days study period when compare to regular farmer practice without Mineral mixture supplement. The milk Fat (1.73 %) and SNF percentage (0.77 %) also increased and farmers also received better price for milk. Rs 788/ Month/ Animal could be realized by farmers by supplementation of Mineral mixture (Rs 83.00). The present findings higher than earlier studies Srivara Buddhi Bhuvaneswari (2019) ^[3], who reported supplementation of Area Specific mineral mixture to dairy cattle, resulted in increase in milk yield by 0.5 litre per day in cow respectively. Similar to the present findings, Hackpart *et al.* (2010) ^[4]

reported increase in milk production at supplementation of organic zinc, manganese, copper, and cobalt to the dairy animals There are several previous studies (Akila and Senthilvel (2013) ^[1]; Senthilkumar *et al.*, 2016) ^[2] reported increase of milk yield, milk fat Percentage and SNF percentage in dairy cows by supplementation of mineral Mixture in addition to the regular feeding. In addition the milk yield and Milk quality, the mineral mixture can increase the reproduction parameters which include Age at sexual maturity, Oestrous cycle, number of services per conception and shorten the calving interval. Farmers can notice low incidence of metabolic disorders and mastitis in their dairy animals by regular supplementation of 30-50 gram Mineral mixture.



Supplementation of Mineral mixture to the dairy cows

Table 1: Performance of TANUVAS- Mineral Mixture in Dairy Animal

Block	No of Animals (n)	Average 30 days cumulative milk yield/ Animal		Average fat Percentage in milk		Average SNF percentage in milk	
		Before	After	Before	After	Before	After
Anthiyur Block	30	163.5±0.28	195.3 ±0.39	3.25±0.13	4.62±0.13	6.35±0.13	7.23±0.21
Gobichettipalayam Block	30	207.0 ±0.25	219.6 ±0.19	3.75 ±0.24	4.95 ±0.14	7.15 ±0.18	7.75 ±0.28
Bhavani Block	30	267.0 ±0.31	310.2 ±0.18	4.20 ±0.13	5.32 ±0.23	6.32 ±0.16	6.82 ±0.21
T.N. Palayam Block	30	223.5 ±0.18	254.7 ±0.30	4.52 ±0.08	5.82 ±0.12	6.82 ±0.10	7.42 ±0.10
Perunduari Block	30	173.4 ±0.21	207.21 ±0.27	3.45 ±0.14	4.75 ±0.21	6.65 ±0.14	7.35 ±0.14

Table 2: Economics for the period 30 days study Period

Particulars	Trail Group	Control Group
30 days Cumulative milk yield/ Dairy Animal	237 litres	207 litres
Supplementation	30-50 Grams of mineral mixture per day and for 30 days requirement 1.5 Kgs (Rs 55 /Kg)	
Gross cost	Rs 3875.00 (Including Mineral mixture cost Rs 83/ Month/Dairy cow)	
Gross Return	Rs 7145.00	
Net Return	Rs 3270.00	
Addition income	Rs 788/ Month/ Animal could be realized by farmers by supplementation of Mineral mixture (Rs 83)	

Conclusion

In this study, 30-50 Gram/ day/Animal regular supplementation of TANUVAS Mineral mixture for 30 days period increased milk yield by 1 liter and Fat and SNF Percentage also increased. Regular supply of mineral mixture enhances the reproductive performance of heifers. Other than cattle, farmers can use the mineral mixture for small ruminants to increase the production performance. Hence, by supplementing TANUVAS Mineral mixture in dairy cattle ration, economic status of the dairy farmers will be increased by enhancing productivity of the animals.

Acknowledgement

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