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TANUVAS GRAND for enhancing milk yield of dairy cattle in Karur district of Tamil Nadu

[1]M Saravanan, [2]J Diraviam and [3]R Murugeswari

[1]Subject Matter Specialist, ICAR - Krishi Vigyan Kendra, Pulutheri, R.T. Malai, Kulithalai, Karur, Tamil Nadu, India

[2]Senior Scientist and Head, ICAR - Krishi Vigyan Kendra, Pulutheri, R.T. Malai, Kulithalai, Karur, Tamil Nadu, India

[3]Associate Professor, Department of ANN, VCRI, Salem, Tamil Nadu, India

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Corresponding Author: M Saravanan

Abstract

Dairy farming plays an important role in socio economic development in India. Main trust area is to improve efficiency of milk production through better understand the microbial interactions governing efficient nutrient utilization by ruminal microbes. Field demonstration was conducted to study the performance of TANUVAS GRAND (Gruel Rooted Additive Nourishment Drops) supplement on enhancing milk production of dairy cattle in three blocks of Karur district. 10 farmers from each block were selected for analysis of data. Study parameters mainly concentrated in milk production and avoidance of Sub Acute Ruminal Acidosis (SARA). After administration of supplement Milk yield from the animal was 8.75 litres/day/animal with the cost benefit ratio of 3.02 whereas, without supplement an animal yields an average of 7.31 litres/day/animal with the cost benefit ratio of 2.67. The farmer got an additional income of Rs.30 from an animal by including GRAND supplement in the feeding pattern of dairy cattle.

Keywords: Dairy farming, milk production, rumen microbes, TANUVAS GRAND, feed supplementation

Introduction

Dairying is one of the major occupations in rural areas of Tamil Nadu, India, belonging to the unorganized sector with low productive potential with available feed resources, namely grains of pearl millet, sorghum, maize, broken rice and agricultural by products. Since rumen microorganisms play an important role in facilitating the digestion of the feed and fodder and further get digested in the lower gut to provide quality microbial protein to the animal, it is imperative to support the nutritive requirement of these beneficial microorganisms to facilitate digestion of low quality feed and fodder as well as to reap the high quality microbial protein that is provided by them (Arul nathan *et al*., 2023). Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) developed a supplement to selectively support the growth of beneficial microorganisms. The supplement contains required quantity of copper sulphate, cobalt sulphate and urea as a source of copper, cobalt, sulphur and nitrogen. The acronym for this supplement is GRAND in which G stands for Gruel, R stands for rooted, A stands for Additive, N stands for Nourishment and D stands for Drops. A field demonstration was designed to study the effect of TANUVAS GRAND supplementation on milk production and cost of economics in dairy cattle in Karur district of Tamil Nadu under DAPSC Project from ICAR.

Materials and Methods

The present study was carried out to analyse the impact of TANUVAS GRAND supplementation in milk yield of Dairy cattle. The total no of 30 milking -cows were selected for this demonstration in Kulithalai, Thanthoni and Thogamalai blocks of Karur District in Tamil Nadu during the year of 2023-24. 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 progressive farmers were trained on TANUVAS GRAND supplementation practices aspects before starting of demonstrations. The demonstrated dairy cows were regularly monitored and periodically observed. The milk yield of these cows was recorded for 30 days of pre supplementation of TANUVAS GRAND and post supplementation of 20 ml of TANUVAS GRAND per day continuously for 30 days. The present demonstration assessed the performance individual household level farmers who adopted supplementary feeding of TANUVAS-GRAND in dairy cattle. Cost of expenditure, net income and benefit cost ratio were worked out. To study the impact of demonstrations, collected milk yield data were analysed.

Results and Discussion

Table 1: Effect of TANUVAS GRAND on milk yield and economics in Kulithalai

SI. No.	Average Milk Yield (L/month)		Economics of demonstration (Rs/cow)				Economics of check (Rs/cow)			
	Demo	Check	Gross cost (Concentrate feed)	Gross return	Net return	BCR	Gross cost (Concentrate feed)	Gross return	Net return	BCR
Kulithalai Block										
1	8.6	7	2655	7740	5085	2.91	2540	6300	3760	2.5
2	8.3	7.1	2687	7470	4783	2.78	2564	6390	3826	2.49
3	8.9	6.8	2900	8010	5110	2.76	2551	6120	3569	2.4
4	9	7.5	3120	8100	4980	2.59	2431	6750	4319	2.77
5	9.1	7.5	2600	8190	5590	3.15	2675	6750	4075	2.52
6	8.6	8	2875	7740	4865	2.69	2410	7200	4790	2.98
7	8.5	7	2755	7650	4895	2.77	2320	6300	3980	2.71
8	8	6.5	2688	7200	4512	2.68	2210	5850	3640	2.65
9	8.1	7	3025	7290	4265	2.4	2213	6300	4087	2.84
10	9	7.3	2987	8100	5119	2.71	2564	6570	4006	2.56
Average	8.61	7.17	2829.2	7749	4920.4	2.74	2447.8	6453	4005.2	2.64

Table 2: Impact of TANUVAS GRAND supplementation on dairy performance in Thanthoni

SI. No.	Average Milk Yield (L/month)		Economics of demonstration (Rs/cow)				Economics of check (Rs/cow)			
	Demo	Check	Gross cost (Concentrate feed)	Gross return	Net return	BCR	Gross cost (Concentrate feed)	Gross return	Net return	BCR
Thanthoni Block										
1	8.9	7	2600	8010	5410	3.08	2452	6300	3848	2.57
2	8.7	7.6	2560	7830	5270	3.05	2547	6840	4293	2.68
3	9	8	2751	8100	5349	2.94	2600	7200	4600	2.77
4	9.5	7.9	2485	8550	6065	3.44	2750	7110	4360	2.58
5	9	7.1	2654	8100	5446	3.05	2632	6390	3758	2.43
6	9.2	7.6	2600	8280	5680	2.83	2745	6840	4095	2.5
7	8.5	7	2700	7650	4950	2.83	2342	6300	3958	2.69
8	8	7.2	2750	7200	4450	2.62	2470	6480	4010	2.62
9	8.7	7.1	2650	7830	5180	2.95	2650	6390	3740	2.41
10	8.2	7.5	2466	7380	4814	2.99	2390	6750	4360	2.82
Average	8.77	7.4	2621.6	7893	5261.4	2.9	2557.8	6660	4102.2	2.6

Table 3: Milk yield and economic comparison of GRAND supplementation in Thogamalai

SI. No.	Average Milk Yield (L/month)		Economics of demonstration (Rs/cow)				Economics of check (Rs/cow)			
	Demo	Check	Gross cost (Concentrate feed)	Gross return	Net return	BCR	Gross cost (Concentrate feed)	Gross return	Net return	BCR
Thogaimalai Block										
1	8.5	8	2431	7650	5219	3.15	2450	7200	4750	2.94
2	8.3	7.6	2545	7470	4925	2.93	2321	6840	4519	2.95
3	8.2	7.8	2630	7380	4750	2.8	2210	7020	4810	3.2
4	8.6	8.1	2752	7740	4988	2.81	2541	7290	4749	2.86
5	9	7.6	2487	8100	5613	3.25	2352	6840	4488	2.9
6	9.5	7.2	2156	8550	6394	3.96	2332	6480	4148	2.77
7	8.6	7.5	2574	7740	5166	3	2345	6750	4405	2.87
8	8.7	7	2657	7830	5173	2.95	2356	6300	3994	2.67
9	8.8	7.1	2685	7920	5235	2.95	2458	6390	3932	2.6
10	9.6	7.2	2335	8640	6305	3.7	2650	6480	3830	2.44
Average	8.78	7.51	2525.2	7902	5376.8	3.15	2401.5	6759	4362.5	2.82

The results of demonstration conducted in dairy cows are described in table 1, 2 and 3. The results showed that GRAND supplement administered animal produced an average milk yield of 8.72 litre/day/cow with benefit cost ratio of 2.96 whereas without administration of GRAND supplement the cow yielded 7.36 litre/day/cow with benefit cost ratio of 2.68. Farmer realized the additional cost benefit from addition of GRAND Supplement in regular feeding pattern in Dairy cows. More than milk yield there was an increase of intestinal micro-organism to eliminate Sub Acute Ruminal Acidosis (SARA). Similar findings were reported by Balakrishnan and Murugeshwari (2013) [1], where there was an increase of 0.48 litres/day/cow on an average. Murugeshwari *et al.*, stated that there was an average milk yield of 646.33 ml/day/cow leading to additional income of Rs.30/animal/day. Balakrishnan (2014)

[3] stated that cattle has produced additional milk yield with an average of 500 ml to 700 ml/day/cow. Vinothraj *et al*., (2019) [4] reported that milk produced from GRAND supplement administered animal was around 9.20 litres/day/cow.

Conclusion

TANUVAS GRAND supplementation in dairy animal resulted in increased milk yield around 750 ml/animal/day. In economic aspects, dairy farmers will get Rs.1000-1500 additional profit from dairy cow by investing 100-200 rupees. It is also found that conducting large scale demonstration in time for adoption of this product plays a crucial role in enhancing the productivity of dairy cattle.

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