

KNOWLEDGE LEVEL OF FARMERS REGARDING SUPPLEMENTARY FEEDING OF MINERAL MIXTURE TO MILKING ANIMALS

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ABSTRACT

A large number of livestock in the tropics suffer from deficiencies or imbalances in mineral nutrition. Livestock is mainly maintained on grazing without access to mineral supplement (McDowell et al., 1993). Animal husbandry or livestock rearing is as old as human civilization. India has a tradition of intimating with animals or treating them as one of their family. With gradual change in societal structure, the conventional livestock system has transformed into a more commercial venture. Under domestication the animals are dependent on humans for their sustenance and performance. The data in research shows that knowledge of beneficiary farmers like "Increases milk production in animals", "Improves reproductive efficiency and reduces inter-calving period", "Helps improving growth rate in calves", "Better utilization of absorbed nutrients", "Increases productive life of animals", "Improves immunity status", "Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period", "Mineral mixture feeding to only Milch animals", "Mineral mixture feeding to Milch & Dry animals" and Mineral mixture feeding to Calves were found to be 82.41, 75.23, 70.37, 68.13, 59.96, 56.94, 55.34, 47.68, 41.12 and 39.00 MPS, and ranks were assigned I to X, respectively. In case of non-beneficiary farmers 61.00, 60.22, 59.74, 53.52, 50.00, 41.56, 39.63, 29.96, 24.12 and 21.00 MPS of knowledge were reported with regard to "Increases milk production in animals", "Helps improving growth rate in calves", "Better utilization of absorbed nutrients", "Improves reproductive efficiency and reduces inter-calving period", "Increases productive life of animals", "Improves immunity status", "Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period", "Mineral mixture feeding to only Milch animals", "Mineral mixture feeding to Milch & Dry animals" and Mineral mixture feeding to Calves " and ranks were assigned in descending order from I to X, respectively.

Keywords: mineral mixture, front line demonstration, beneficiary farmers, non beneficiary farmers, feeding management practices, dairy animals

INTRODUCTION

They need to be provided with appropriate levels of feeding, suitable housing, breeding, timely healthcare and management so as to obtain desired productivity. Feeding is an important aspect of dairying as it accounts for around 70% of total cost of milk production. Different types of dietary feed ingredients for dairy cows and buffaloes include concentrates such as compound cattle feed, oil cakes, grains and grain byproducts like brans and chunnies; cultivated green fodders and grasses; crop residues like straws and stovers. A normal adult animal should be fed 6 Kg dry and 15-20 Kg green fodder per day. Legume and non-legume green fodder should be fed in 1:3 proportions. Green fodder should be harvested at 50% flowering stage. Surplus green fodder should be conserved in the form of 'hay' or 'silage'. Conserved fodder

becomes useful during summers or when green fodder is scarce. Reproductive physiology of an animal is influenced by many factors out of which nutritional factors are the most crucial in terms of their direct effects on reproduction and the potential to modulate the effects of other factors. Minerals are the essential nutrients bearing a significant role in the animal reproduction, because their excess or deficit produces detrimental effect on the performance of livestock. Deficiency of essential minerals may result in failure of the homeostasis mechanism, affecting the productive and reproductive potential of animals. Similarly Bypass fat technology protects the nutrient from degradation and bio-hydrogenation in rumen with increasing the energy density of diet, thus enabling the animals to meet their energy and essential fatty acid requirements and improving reproductive and lactating

performance. When fatty acids are bio-hydrogenated, the resulting Trans fatty acids produced in the rumen might also benefit fertility. The role of Bypass fat, which act as a precursor of progesterone via cholesterol and prostaglandins was considered also as an energy supplement during the transition period leading to improvement in reproductive performance.

OBJECTIVE

To know the knowledge level of farmers regarding supplementary feeding of mineral mixture to milking animals

METHODOLOGY

The present investigation was carried out in Chhotaudepur district of Gujarat which is located in the eastern part of the State of Gujarat. The boundary of Chhotaudepur district touches to Vadodara, Panchmahal, Dahod, Narmada and State of Madhya Pradesh and Maharashtra. The Chhotaudepur district is an important tribal majority milk pocket in the Gujarat state. Chhotaudepur district consist 6 talukas. KVK Vadodara conduct the 125 frontline demonstrations (FLDs) on supplementary feeding of mineral mixture from 2014-15 to 2018-19 in the 3 talukas out of 6. The 3 talukas Sankheda, Bodeli and Pavi Jetpur were selected purposively. The study was conducted in five villages of three talukas of Chhotaudepur district where FLDs on supplementary feeding of mineral mixture demonstrated were selected for the present study as a beneficiary farmer and five another villages from nearby area of FLD villages' resembled similar socio economic status were selected randomly and named as non-beneficiaries. Hence, total 10 villages were included in the study (Table 1).

Table 1 : List of selected FLD and non-FLD villages

Sr. No.	Name of Taluka	FLD villages	Non- FLD villages
1	Sankheda	Ambapura	Fajalpur
		Sundarpura	Kachhata
2	Bodeli	Bhagwanpura	Nana Butiyapura
		Mota Katwa	Mota Butiyapura
3	Jetpur Pavi	Haripura	Kalarani

A list of beneficiary and non-beneficiary farmers was prepared from selected villages. Out of these 75 beneficiary respondents from FLD villages and 75 from non FLD villages were selected by propositante sampling techniques.

RESULTS AND DISCUSSION

Knowledge level of beneficiary farmers about benefits of supplementary feeding of mineral mixture to milking animals

Table 2 : Knowledge level of beneficiary farmers about benefits of Supplementary feeding of mineral mixture to milking animals (n=75)

Sr. No.	Knowledge level	Frequency	Per cent
1	Low (Scores below 47.17)	11	14.66
2	Medium (Scores between 47.17 to 59.65)	45	60.00
3	High (Scores above 59.65)	19	25.33
\bar{X} = 53.41		σ = 6.24	

The data in Table 2 reveals that majority of beneficiary farmers (60.00 per cent) had medium knowledge, whereas 25.33 per cent and 14.66 per cent beneficiary farmers were having high and low Knowledge level of beneficiary farmers about benefits of Supplementary feeding of mineral mixture to milking animals, respectively.

Knowledge level of non-beneficiary farmers about benefits of supplementary feeding of mineral mixture to milking animals

Table 3: Knowledge level of non-beneficiary farmers about benefits of Supplementary feeding of mineral mixture to milking animals (n=75)

Sr. No.	Knowledge level	No.	Per cent
1	Low (Scores below 37.1)	37	49.33
2	Medium (Scores between 37.1 to 43.44)	22	29.33
3	High (Scores above 43.44)	16	21.33
\bar{X} = 40.27		σ = 3.17	

The data in Table 3 indicates that non-beneficiary farmers (49.33 per cent) had low knowledge level, whereas 29.33 and 21.33 per cent non-beneficiary farmers were having medium and high knowledge level about benefits of Supplementary feeding of mineral mixture to milking animals.

Benefits wise knowledge level of beneficiary and non-beneficiary farmers about supplementary feeding of mineral mixture to milking animals

The knowledge level of beneficiary and non-

beneficiary farmers with regards to benefits of Supplementary feeding of mineral mixture to milking animals was measured in terms of MPS. The total numbers of 10 benefits were included to assess the knowledge level of respondents as given in Table 4.

Table 4 : Benefits wise knowledge level of beneficiary and non-beneficiary farmers about supplementary feeding of mineral mixture to milking animals (n=150)

Sr. No.	Benefits of mineral mixture	Beneficiary (n=75)		Non-beneficiary (n=75)	
		MPS	Rank	MPS	Rank
1	Increases milk production in animals	82.41	I	61.00	I
2	Improves reproductive efficiency and reduces inter-calving period	75.23	II	53.52	IV
3	Helps improving growth rate in calves	70.37	III	60.22	II
4	Better utilization of absorbed nutrients	68.13	IV	59.74	III
5	Increases productive life of animals	59.96	V	50.00	V
6	Improves immunity status	56.94	VI	41.56	VI
7	Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period	55.34	VII	39.63	VII
8	Mineral mixture feeding to only Milch animals	47.68	VIII	29.96	VIII
9	Mineral mixture feeding to Milch & Dry animals	41.12	IX	24.12	IX
10	Mineral mixture feeding to Calves	39.00	X	21.00	X
Overall		59.62		44.07	

The data in table 4 indicates that knowledge of beneficiary farmers like “Increases milk production in animals”, “Improves reproductive efficiency and reduces inter-calving period”, “Helps improving growth rate in calves”, “Better utilization of absorbed nutrients”, “Increases productive life of animals”, “Improves immunity status”, “Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period”, “Mineral mixture feeding to only Milch animals”, “Mineral mixture feeding to Milch & Dry animals” and Mineral mixture feeding to Calves were found to be 82.41, 75.23, 70.37, 68.13, 59.96, 56.94, 55.34, 47.68, 41.12 and 39.00 MPS, and ranks were assigned I to X, respectively.

In case of non-beneficiary farmers 61.00, 60.22, 59.74, 53.52, 50.00, 41.56, 39.63, 29.96, 24.12 and 21.00 MPS of knowledge were reported with regard to “Increases milk production in animals”, “Helps improving growth rate in calves”, “Better utilization of absorbed nutrients”, “Improves reproductive efficiency and reduces inter-calving period”, “Increases productive life of animals”, “Improves immunity status”, “Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period”, “Mineral mixture feeding to only Milch animals”, “Mineral mixture feeding to Milch & Dry animals” and Mineral mixture feeding to Calves “ and ranks were assigned in descending order from I to X, respectively.

Comparison of knowledge level between beneficiary and non-beneficiary farmers regarding benefits of supplementary feeding of mineral mixture to milking animals

Table 5 : Comparison of knowledge level between beneficiary and non-beneficiary farmers regarding benefits of supplementary feeding of mineral mixture to milking animals (n=150)

Sr. No.	Benefits of mineral mixture	Beneficiary (n=75)		Non-beneficiary (n=75)		‘Z’ Value
		Mean	SD	Mean	SD	
1	Increases milk production in animals	7.04	1.48	5.09	0.92	9.58**
2	Improves reproductive efficiency and reduces inter-calving period	10.01	0.87	8.09	1.02	12.30**
3	Helps improving growth rate in calves	5.42	1.29	3.92	0.77	8.42**
4	Better utilization of absorbed nutrients	2.93	0.91	1.91	0.88	6.47**

Sr. No.	Benefits of mineral mixture	Beneficiary (n=75)		Non-beneficiary (n=75)		'Z' Value
		Mean	SD	Mean	SD	
5	Increases productive life of animals	7.92	1.62	5.61	1.19	9.84**
6	Improves immunity status	5.88	1.77	4.03	1.01	7.71**
7	Prevent metabolic diseases like milk fever, ketosis, haematuria which occur around calving period	9.11	1.66	7.02	1.52	7.88**
8	Mineral mixture feeding to only Milch animals	2.80	0.83	2.23	0.37	5.74**
9	Mineral mixture feeding to Milch & Dry animals	3.34	1.22	2.26	0.89	5.93**
10	Mineral mixture feeding to Calves	3.29	1.19	2.01	0.83	5.89**
	Overall	5.77	1.16	4.22	0.94	7.98**

** Significant at 0.01 level of probability

CONCLUSION

A significant difference in knowledge level of beneficiary and non-beneficiary respondents regarding to all eleventh knowledge level between beneficiary and non-beneficiary farmers regarding Supplementary feeding of mineral mixture to milking animals. In other words, there is no similarity between the level of knowledge of beneficiary and non-beneficiary farmers regarding benefits of Supplementary feeding of mineral mixture to milking animals.

The higher knowledge level of benefits of Supplementary feeding of mineral mixture to milking animals among the beneficiary in comparison of non-beneficiary respondents, might be due to the reason that the FLDs were conducted on the fields of beneficiary farmers only by the KVK, Vadodara and they have also been provided necessary guidance, literature and training by the KVK scientists. Whereas, the FLDs were not conducted on the field of non-beneficiary farmers might have not been provided any type of guidance and training by the Scientists. This might have resulted in higher level of knowledge of beneficiary farmers in comparison to non-beneficiary farmers.

It might be concluded that the beneficiary farmers were having higher overall knowledge about benefits of Supplementary feeding of mineral mixture to milking animals. Whereas non-beneficiary were having less knowledge about it. This might be due to the fact that beneficiary farmers were might have learned about Supplementary feeding of mineral mixture to milking animals through on-off campus trainings, group meeting, field days, farmers fairs, exposure tours and literature provided by KVK scientists under FLD. Whereas non-beneficiary farmers were dependent on private or other sources for the same.

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