



Research Article

PREVENTION OF MILK FEVER IN DAIRY ANIMALS BY SUPPLEMENTATION OF ANIONIC FEED SUPPLEMENT DURING PERI-PARTUM: A FIELD EXPERIENCE

MITHUNA K.V.^{*1}, SHIVAPPA NAYAKA H.B.², SHANKARA M.H.², ARJUMAN BANU² AND NETRAVATHI T.³

^{1,3}Department of Animal Husbandry and Veterinary Services, Tiptur and Chiknayakanahalli, India

²CAR-Krishi Vigyan Kendra, Konehally, 572202, University of Agricultural Sciences, GKVK, Bangalore, 560 065, India, India

*Corresponding Author: Email - mkv442@gmail.com, shankrimh@gmail.com

Received: December 01, 2018; Revised: December 11, 2018; Accepted: December 12, 2018; Published: December 15, 2018

Abstract: Sixteen cows reported with the problem of hypocalcaemia (milk fever) during peri-partum in previous gestation belonging to the villages of Veterinary dispensary, Nagaraghatta jurisdiction were advised to supplement anionic feed supplement (Balanion® 50gms/day) from 8 months 20days of gestation for 20days continuously along with the concentrate feed mixture and not to milk whole of the colostrum at first milking after parturition. All the animals calved normally; no cases of retention of placenta, udder oedema and milk fever. All the sixteen farmers' opined prevention of milk fever and possible series of complications by supplementation of anionic dietary preparation is economical and satisfactory than management of milk fever and subsequent complications like dystocia, RFM, endometritis.

Keywords: Milk fever, Anionic diet, Dystocia, Retention of placenta, Adoption

Citation: Mithuna K.V., et al., (2018) Prevention of Milk Fever in Dairy Animals by Supplementation of Anionic Feed Supplement during Peri-partum: A Field Experience. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 10, Issue 23, pp.- 7610-7612.

Copyright: Copyright©2018 Mithuna K.V., et al., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Academic Editor / Reviewer: Dr Gyan Singh

Introduction

Transition period for a dairy cow is an important period. Three weeks pre-partum and three weeks post partum is referred as transition period. During this period various physiological, metabolic and nutritional changes occur in the animal. Now-a-days nutrition and management during this period have received much attention since best feeding strategies during this critical period has tremendous impact on the animal's ability to produce to maximum potential [1]. Metabolic and health problem occurs during later stages of production due to high production stress [2]. It is therefore, essential to make proper nutritional management during the transition phase in order to optimize the productivity of the animals. High levels of milk production in dairy cattle can have negative side effects on health and fertility traits [3]. Reproductive disorders are often complex and are associated with multi-factorial problems. Depending on their nature and severity, all such problems culminate in suboptimal reproductive performance. Besides this there are a multitude of non-reproductive or general health problems which affect reproductive performance. Disorders may be broadly categorized into two groups: peri-parturient disorders (pre-parturient disorders, parturition associated disorders and post-parturient complications) and general disorders (not associated with parturition). Peri-parturient disorders have been recognized as the most important factors fertility [4]. Milk fever is a condition of cattle occurring around the time of parturition, commonly within 48hr after calving but can also occur several weeks before or after calving. A depression of the levels of calcium in blood is the basic cause of milk fever. This is due to imbalance between calcium output in the colostrums and intake of calcium. A cow producing 10kg of colostrum will lose 23g of calcium in single milking. This is about nine times as much as calcium as that present in the entire plasma calcium pool of the cow [5]. Calcium content of cow decreases due to calcium used by the foetus for bone development during pre-partum period. Reducing DCAD by increasing dietary acidity or employing anionic salts has been efficacious and cost effective in the prophylaxis of hypocalcemia [6]. Acidogenic diets are hypothesized to increase bone resorption, blood Ca and intestinal Ca absorption [7].

The study was undertaken with the objectives

To study the socio-economic properties of the selected farmers,
To study the knowledge of the farmers regarding dairy farming and
To study the effect of anionic dietary feed supplementation on animal health and farmers' perception and adoption of the technology.

Materials and methods

16 cows with the history of milk fever and subsequent complications in previous gestation were reported to Veterinary Dispensary, Nagaraghatta, Tiptur taluk from 4 villages viz, Hullukatte, Belagarahalli, Nagaraghatta, Nagaraghatta kaval during the year 2017. All the animals were supplemented with anionic feed supplement (Balanion® 50gms/day) along with the regular concentrate feeding regime practiced by the farmers along with water, fodder and forage at adlib. Out of 16 farmers, five were distributed with anionic feed supplement by KVK, Tiptur. All the farmers were advised to start the supplementation at 8month 20 days of gestation onwards for 20days and also to not to milk out the whole colostrum at first milking after parturition. Out of 16 animals 5 animals are of 6th gestation, 5 animals are of 4th gestation and 6 animals are of 3rd gestation. Data were collected using questionnaire method and structured interview schedule. A standardized knowledge test developed [8] was used for the measurement of knowledge about dairy farming.

Results and discussion

Socio-economic properties of the selected farmers

Majority of the respondents were middle aged male farmers (9). 87.5% of the respondents were having schooling background so their tendency towards changes in managerial practices with proper knowledge imparting is evident in this study [10]. The study [11] concluded that socio economic characteristics like education, social participation, social contact and occupation are significantly related with the training needs of Harijan farmers on animal husbandry practices.

Table-1 Socio-economic properties of the selected farmers

SN	Variable	Category	Frequency (n=16)	Percentage (%)
1	Age	Young (< 30yrs)	3	18.75
		Middle (between 30-50yrs)	11	68.75
		Old (> 50yrs)	2	12.5
2	Sex	Male	13	81.25
		Female	3	18.75
3	Caste	General	9	56.25
		OBC	4	25
		SC/ST	3	18.75
4	Family size	Small (up to 4)	11	68.75
		Medium (5-9)	5	31.25
		Large (> 10)	0	0
5	Education	No schooling/Illiterate	2	12.5
		Primary school	2	12.5
		Middle school	2	12.5
		High school	3	18.75
		College/graduation	7	43.75
6	Occupation	Agriculture labourers	0	0
		Agriculture and animal husbandry	14	87.5
		Animal husbandry alone	1	6.25
		Others	1	6.25
7	Annual income	Up to 20000	1	6.25
		20000-40000	2	12.5
		More than 40000	13	81.25
8	Land holding	Landless	1	6.25
		Marginal (<2.5 acre)	2	12.5
		Small (2.5-5acre)	12	75
		Medium (5-25acre)	1	6.25
		Large (>25acres)	0	0
9	Herd size	2animals	5	31.25
		2-4animals	9	56.25
		>4animals	2	12.5
10	Farming experience	Low (up to 12 yrs)	7	43.75
		Medium (12-22yrs)	3	18.75
		High (22.1-27yrs)	5	31.25
		Very high (>27yrs)	1	6.25
11	Time spent on dairy farming (hr/day)	Up to 2 hrs	5	31.25
		2-4 hrs	6	37.5
		>4hrs	5	31.25
12	Knowledge about dairy farming	Low (score below 7)	4	25
		Medium (score 7-10)	9	56.25
		High (score >10)	3	18.75

Majority were small farmers [12] and practice agriculture as their main occupation and animal husbandry as their secondary occupation [10]. Majority of the respondents having medium level of knowledge regarding the dairy farming followed by low and high [13] shows the need of imparting proper knowledge to the farmers to improve their socio-economic status as whole. All the animals calved normally with no problem of dystocia or still birth. One animal gave birth to a female calf with congenital defect (Amelia) and 2 animals gave birth to female calves with no abnormality. All the other animals gave birth to male calf. All the animals calved normally. Stillbirth and dystocia have been recognized as the most important factors compromising the future reproductive life of an animal. They increase the odds of developing metritis and retained placenta. Among the parturition associated complications, statistically it was found that dystocia affected animals required a significantly greater number of services to get conceived in future. Expulsion time of placenta was low within about 1-3 hours after parturition without any assistance from veterinarian. Showed, in cows fed low DCAD diets, incidence of retained placenta was zero, but observed diets with low DCAD did not alter the incidence of metabolic disorders. Overall, the reduced DCAD diet could improve peri parturient dairy cow health. Cows having retained placentas were more at risk for developing ketosis. Prevention of one problem can decrease the incidence of others. RFM delays uterine involution, predisposed cows to endometritis or metritis and decreased fertility. All the farmers opined that there was no change in feed and water intake. But few studies have shown a negative effect on the dry matter intake (DMI) when adding anionic salts to the ration. Four farmers opined that the anionic supplement was not so palatable to the animals so they used to drench it mixing with water rather feeding along with

the regular concentrate feed mixture. All the farmers said that they are unaware of the technology and were advised by vets and para vets to practice feeding calcium preparations orally during dry period along with the feed and get the animal to infuse with calcium preparations by parenteral route during 8th month of gestation and also after calving to prevent milk fever which is unscientific. All the farmers opined prevention of milk fever and possible series of complications by supplementation of anionic dietary preparation is economically feasible and satisfactory than management of milk fever and complications like dystocia, RFM, metritis and were ready to adopt the anionic dietary supplement strategy in future after getting convinced by the usefulness of technology with respect to economic benefits and animal health perspectives [14]. Decreased reproductive performance has direct and severe economic effects in terms of losses due to reduced production on one hand and additional cost on management on the other.

Conclusion

Field experiences and result demonstrations are very useful tool for making economically viable recommendations to farmers for sustainable production. By imparting the proper knowledge regarding managerial practices can reduce the economic loss.

Application of research: Study of Socio-economic properties of the selected farmers

Research Category: Animal Husbandry and Veterinary Science

Acknowledgement / Funding: Authors are thankful to Department of Animal Husbandry and Veterinary Services, Tiptur and Chiknayakanahalli, India. Authors are also thankful to ICAR-Krishi Vigyan Kendra, Konehally, 572202, University of Agricultural Sciences, GKVK, Bangalore, 560 065, India

***Principal Investigator: Dr Mithuna K.V.**

Department: Department of Animal Husbandry and Veterinary Services, Govt. of Karnataka, Tiptur and Chiknayakanahalli

Research project name or number: Frontline Demonstration

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript

Conflict of Interest: None declared

Sample Collection: Veterinary dispensary, Nagaraghatta jurisdiction

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

References

- [1] Rhonda F. (1994) *Dairy Herd Management*, 31, 30-39.
- [2] Jones G.P and Garnsworthy (1989) *Anim. Prod.*, 49, 183.
- [3] Windig J.J., Calus M.P.L. and Veerkamp R.F. (2005) *J. Dairy Sci.*, 88, 335-347.
- [4] Wilde D. (2006) *Anim. Reprod. Sci.*, 96, 240-249.
- [5] Radostits M., Gay C., Blood D.C. (2005) *Veterinary medicine*, 9th edition, 1417-1452.
- [6] Chan P.S., West J.W. and Bernard J.K. (2006) *J. Dairy Sci.*, 89, 704-713.
- [7] Horst R.L., Goff J.P., Reinhardt T.A. and Boxton D.R. (1997) *J. Dairy Sci.*, 80, 1269-1280.
- [8] Rao B.S. and Kherde R.L., (1990) *Asian Journal of Dairy Research*, 9 (4), 224-228.
- [9] Morisset and Hamel (1994) *Producteur-de-lait-Quebecois*, 14(9), 10-12.
- [10] Stephen M., Alish Peter K., Ajith Kumar C.B. and Raghunandan K.V. (2007) *Indian J. Ani. Sci.*, 77(6), 500-503.
- [11] Dash B.N. and Das R.N. (1998) *Journal of Extension Education*, 14(1and2), 34-38.
- [12] Gautam U.S., Ram Chand and Singh D.K. (2007) *Indian Res. J. Ext. Edu.*, 7 (2and3), 10-11.
- [13] Amit Lohakare C. (2009) *M.V.Sc Thesis, Maharashtra Animal and Fisheries Sciences University, Nagpur, Maharashtra, India.*
- [14] Hassnain Shah, Hina Riaz, Nadeem Akmal, Muhammad Sharif and Abdul Majid, (2010) *Pakistan J. Agri. Res.*, 23(1and2), 70-77.