



STUDY OF SANI FEEDING TECHNIQUES WITH SUPPLEMENTATION OF MINERAL MIXTURE IN DAIRY ANIMALS

S.P.S. Somvanshi*, H.P. Singh, R.P.S Shaktawat, R. Gupta, S.P. Tripathi, Durga Singh and G.S. Chundawat

RVSKVV-Krishi Vigyan Kendra, Mandsaur -458 001

Abstract

The present study was conducted at Akyu Umaheda village of Mandsaur (M.P.) under Front Line Demonstration (FLD) during 2013-14. In the study, animals were fed mainly on straw of wheat and/or soybean constituted the basal dry roughage of the animals (Farmer's practice). Sani feeding technique with supplementation of mineral mixture @ 30 gm / day / animal was selected as improved technology. Results shows that there was 15.78 percent increment in milk production through improved practice *i.e.* sani feeding with supplementation of mineral mixture as compared to farmer practice *i.e.* roughages without minerals (3.80 lit/day). It may be concluded in terms of gross return, net return and B: C ratio was found superior in improved practices were – 20000, – 14500 and 3.63 respectively. However, feed intake / day by animal increased with improved technology, because of increase percentage of palatability and digestibility. Hence, livestock keepers need to be advised for scientific feeding of their livestock for getting optimum productivity and benefits.

Key words : Mineral mixture, feeding techniques, Dairy animals, Milk, Milk Components

INTRODUCTION

India is the highest milk producing country in the world, largely due to the large population of its dairy animals. However, per animal milk production in the world is still very low in India which can be attributed to poor nutritional management leading to several metabolic disorders such as mineral deficiency diseases. Sharma *et al.* (2002) and Sharma *et al.* (2003) reported that dairy animals with macro- and micro mineral deficiencies were producing milk sub optimally and subsequently showed improved milk production levels post mineral supplementation. Feeding a total mixed ration (TMR) helps a dairy cow achieve maximum performance. A 4% increase in feed utilization can be expected when using a TMR compared to a conventional ration of forage and grain fed separately, twice daily. In addition, the ability to use feeds with various rates of breakdown is enhanced, often enabling even better nutrient utilization. Farmers can also utilize a greater variety of by-product feeds with a TMR, thereby allowing for possible ration cost savings. The incidence of digestive and metabolic problems often decreases when a TMR is fed, and milk production has been shown to be as much as 5% higher with a TMR

compared to conventional rations as a result of these benefits. Regular feeding of area specific mineral mixture supplements have reportedly improved milk yield in some parts of India (Tiwari *et al.*, 2013). It has been observed that dietary minerals supplementation enhanced milk production, milk composition (Al-Nor *et al.*, 2004) and fertility (Saghar, 2003) in Nili-Ravi buffaloes. Feeding with sani method/ (TMR) helps a dairy cow achieve maximum performance. This is accomplished by feeding a nutritionally balanced ration at all times, allowing cows to consume as close to their actual energy requirements as possible and maintaining the physical or roughage characteristics, which we now refer to as feed particle size, required for proper rumen function. In addition, the ability to use feeds with various rates of breakdown is enhanced, often enabling even better nutrient utilization. Farmers can also utilize a greater variety of by-product feeds with a TMR, thereby allowing for possible ration cost savings. The present study was conducted to observe the impact of the sani feeding along with mineral mixture supplementation to the dairy animals of Mandsaur district (M.P.).

Materials and Methodos

Thirteen farmers with 2 animals each were selected

*Author for correspondence : eimai : surya.somvanshi@gmail.com

randomly from Akya umeheda village of Mandasaur district of (M.P.) under Front Line Demonstration (FLD) trial programme during 2013-14. All the animals selected were at a comparable stage of lactation *i.e.* within first month of lactation and were maintained under similar management conditions throughout the trial. (Farmer's practice) animals were fed mainly on straw of wheat and/or soybean constituted the basal dry roughage of the animals without any addition of mineral mixture. whereas animals from treatment group were fed on sani feeding along with mineral mixture at the rate of 30 grams/animal/day for a period of 3 months. Milk yield of these animals was recorded by their owners and these values were averaged for 0-3 month's interval. Milk components such as milk fat and Milk yield and B: C ratio data were also evaluated) from milk samples collected at different intervals.

Results and Discussion

Animals classified in treatment and control groups showed improvement in terms of milk yield was 15.78 percent increment in milk production through improved practice *i.e.* sani feeding with supplementation of mineral mixture as compared to farmer practice *i.e.* roughages without minerals (3.80 lit/day). In Indian conditions, Tiwari *et al.* (2013) has reported an increase in milk production as well as increased in total lactation length in cattle post area specific mineral mixture supplementation. It can be interpreted that mineral feeding may take certain amount of time to express its effects on milk production. Further it may be concluded that gross return, net return and B: C ratio in improved practices were – 20000, – 14500 and 3.63 respectively. However no significant difference was found in milk fat and solids not fat was observed in both the groups. Hence, the changes in milk components can be attributed to physiological changes in milk quality over the duration of lactation. In support of

Table 1: Changes in milk yield and milk components in cattle (Mean \pm S.E.).

Particular	Farmer Practice (Control)	Improved Practice (Treatment)
Average of Milk Yield (litre/day)	3.80 \pm 0.51	4.40 \pm 0.53
Change in milk Production (%)	-	15.78
Milk Fat (%)	3.41 \pm 0.26	3.39 \pm 0.23
Milk SNF (%)	8.39 \pm 0.10	8.53 \pm 0.11
Gross Return (Rs) / 3 months	17270	20000
Net Return (Rs) / 3 months	12270	14500
Cost of ration (Rs) / 3 months	5000	5500
Benefit cost ratio	3.45	3.63

the findings of the present study Sharma *et al.* (2002), Rabiee *et al.* (2010) and Singh *et al.* (2016) reported no significant changes between supplemented and non-supplemented groups in milk components such as milk lactose, milk protein, milk fat and milk SNF.

Consulsion

Results of the present study revealed that supplementation of mineral mixture need to be advised for scientific feeding of their livestock for getting optimum productivity and higher income returns in-terms of milk yield and production. Further it can be interpreted that Sani feeding method with minerals supplementation is important to reduce the economic losses due to minerals deficiencies and helpful in increasing the income of farmers.

Acknowledgment

With sincere respect and gratitude, we would like to thank Director, ATARI, (ICAR) Zone VII, Jabalpur and Director Extension Services, RVS Agriculture University, Gwalior for providing facilities, financial support and valuable guidance for the research work.

REFERENCES

- Al-Nor, S.A., H.A. Fathy and F. Abudou (2004). Yield and quality of milk and cheese in response to adding some herb combinations with or without minerals in buffaloes. *Egypt J. Dairy Sci.*, **32**(2): 377-386
- Rabiee, A.R., I.J. Lean, M.A. Stevenson and M.T. Socha (2010). Effects of feeding organic trace minerals on milk production and reproductive performance in lactating dairy cows: a meta-analysis. *J. Dairy Sci.*, **93**:4239–51. 5.
- Sharma, M.C., C. Joshi and T.K. Sarkar (2002). Therapeutic Efficacy of Minerals Supplement in Macro-minerals Deficient Buffaloes and its Effect on Haematobiochemical Profile and Production. *Asian Austral. J. Anim. Sci.* **15** (9): 1278-87. 6.
- Sharma, M.C., S. Raju, C. Joshi, H. Kaur and V.P. Varshney (2003). Studies on Serum Micro-mineral, Hormone and Vitamin Profile and Its Effect on Production and Therapeutic Management of Buffaloes in Haryana State of India. *Asian Australian. J. Anim. Sci.* **16**(4): 519-28. 7.
- Tiwari, R., M.C. Sharma and B.P. Singh (2013). Awareness and impact of area specific mineral mixture technology in field situation. *Indian J. Anim. Sci.*, **83**(4): 435–37. 8.
- Saghar, M.S. (2003). Effect of supplementation of ration of Nili-Ravi buffaloes with mineral mixture. *Pak. J. Vet. Res.*, **1**(2): 65-67.
- Singh, S., S. Chhabra, C. Singh, S.S. Randhawa and D.K. Gupta (2016). Effect of Area Specific Mineral Mixture Feeding On Milk Yield and Composition of Dairy Animals of Central Zone of Punjab. *International Journal of Livestock Research*, **6**(3): 62-65.