Indian J. Anim. Prod. Mgmt. Vol. 31(1-2) 97-98 (2015)

EFFECT OF FEEDING TOTAL MIXED RATION (TMR) ON MILK CONSTITUENTS IN LACTATING COWS[1]

NITUL SAIKIA AND B. N. SAIKIA[2]
Department of Animal Nutrition, College of Veterinary Science,
Assam Agricultural University, Khanapara, Guwahati – 781022. Assam

Received : 23.04.2014 ***Accepted : 10.09.2014***

ABSTRACT

Eighteen crossbred lactating cows were randomly selected for the experiment on the basis of live weight and milk yield. The animals were divided into three groups and allotted to three dietary treatments, viz.- T_0, T_1 and T_2. Animals in T_0 groups were fed by conventional method (concentrate and roughages fed separately) and feeding of animals in T_1 and T_2 were done in the form of total mixed ration, where the roughage: concentrate ratio was maintained at 40:60 and 50:50, respectively. The feeding trial was conducted for 120 days. Milk and blood samples were analyzed at fortnightly and monthly interval respectively. The percent total solids, protein, fat, SNF and lactose content in milk was comparable among the treatments. Thus, feeding system does not have any significant impact on the constituents of milk and blood.

Key words: Total mixed rations, Cows, Milk constituents, Blood profiles.

Under field condition, feeding in the form of total mixed ration (TMR) has been reported to improve the palatability, feed intake and milk production in lactating cows. The TMR feeding is based on feeding balanced diet so that the animal receives diets of similar composition throughout 24 hours. Under this system, the roughages and concentrates are blended and mixed properly before feeding to the animals. Reports on the effect of feeding TMR on milk constituents (lactose and fat) varied among the workers[1,5]. Therefore, the present study was undertaken to observe the effect of TMR on the constituents of milk in lactating cows.

The experiment was conducted in large animal experimental shed, Department of Animal Nutrition, College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati -22 from April 2011 to August 2011. For the experiment, eighteen crossbred lactating cows were randomly selected on the basis of live weight and milk yield. The animals were divided into three groups and allotted to three dietary treatments, viz.- T_0, T_1 and T_2. Animals in T_0 groups were fed by conventional method (concentrate and roughages separately) and feeding of animals in T_1 and T_2 were done in the form of total mixed ration, where the roughage: concentrate ratio was maintained at 40:60 and 50:50, respectively. The feeding trial was conducted for 120 days.

Milk samples from animals of respective groups were collected at fortnightly intervals to evaluate the quality of milk. Evaluation of the milk was done as per the standard methods[2,3]. The data recorded were analyzed statistically[6].

[1]Part of Ph.D thesis of first author
[2]Professor and HOD

The average daily milk yield of the experimental animals in T_0, T_1 and T_2 groups were 4.01±0.10, 4.39±0.07 and 4.31±0.12 litres respectively. Although slight increase in milk yield was observed in TMR fed group than the animals in conventional feeding system, statistically the difference was non-significant (P>0.05). Milk constituents like total solids (13.45±0.05, 13.41±0.07 and 13.47±0.04), total protein (3.40±0.001, 3.39±0.003 and 3.39±0.001), fat (4.07±0.05, 4.04±0.02 and 4.10±0.05), SNF (9.38±0.08, 9.37±0.08 and 9.36±0.07) and lactose (4.74±0.01, 4.76±0.01 and 4.78±0.01) content in T_0, T_1 and T_2 groups did not vary significantly (P>0.05) among the groups. Other workers also reported that feeding system did not have significant impact on the milk constituents in lactating crossbred cows and is in good agreement with the present findings[1,4,5].

Hence, it could be concluded that feeding in the form of TMR increases the daily milk yield over the conventional feeding system without affecting the constituents of milk of the experimental animals.

REFERENCES

1. Hundal, J.S.; Gupta, R.P.; Wadhwa, M. and Bakshi, M.P.S. (2004): Effect of feeding total mixed ration on the productive performance of dairy cattle. *Animal Nutrition and Feed Technology*, 4:179-186.
2. ISI (1962): Indian standard Institution. Methods of Tests for Dairy Industry, IS: 1979 (Part II) ISI, Manak Bhawan New Delhi, India.
3. ISI (1970): Indian standard Institution. Fat determination of milk by Gerber's Method. IS: 1224 (Part I) ISI, Manak Bhawan New Delhi, India.
4. Lade, M.H.; Tiwari, D.P. and Kumar, A. 2007. Effect of feeding complete ration vis-a-vis conventional ration with or without green fodder on nutrient utilization and lactation performance in crossbred cows. *Indian J. Anim. Sci*., 77(10).
5. Pandya , P.R.; Patel, P.R.; Gupta, R.S.; Patel ,D.C; Pande, M.B. and Desai, M.C. 2005. Effect of wheat straw based total mixed ration with *Prosopis juliflora* pods (Mesquite pods) on performance of lactating cows. *International J. of cow science*, 1(1): 66-72.
6. Snedecor, G.W. and Cochran, W.G. 1994. Statistical Methods, 8th ed. Oxford and IBH Publishing Company, Kolkata, India.

★ ★ ★