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Feeding Management Practices of Buffalo Followed in Purandar Tahsil of Pune District

M.G. Mote[1]*, P.T. Dhumal[2] and U.S. Gaikwad[3]
Department of Animal Husbandry and Dairy Science, MPKV, Rahuri, Maharashtra
Present address :
[1]Department of AHDS, RCDP on Cattle, MPKV, Rahuri, Maharashtra
[2]Division of Animal Husbandry and Dairy Science, College of Agriculture, Pune, Maharashtra
[3]Department of AHDS, College of Agriculture, Muktainagar, Jalgaon, Maharashtra
**Corresponding Author Email : mahendramote18@gmail.com*

Abstract

The present investigation entitled 'Feeding management practices of buffalo followed in Purandar tahsil of Pune district' was undertaken in Purandar tahsil, Dist. Pune, Maharashtra (India). For this study 150 buffalo owners were chosen randomly as respondents from 15 selected villages. The data was collected through pretested questionnaire. The owners were distributed in three groups on the basis of buffaloes possessed by them as group-I up to 4 buffaloes, group-II 5 to 8 and group-III more than 9 buffaloes. In feeding of buffaloes maximum quantity of green roughages (19.03 kg/day), dry roughages (5.46 kg/day) and concentrates (3.17 kg/day) was fed by farmers of group III whereas minimum quantity of green roughages (14.68 kg/day), dry roughages (4.13 kg/day) and concentrate (1.92 kg/day) was fed in group I. Significant (P<0.01) difference was observed between feeding of green roughages, dry roughages and concentrates with various groups of farmers. The significant difference (P<0.01) was observed between milk production and various groups of farmer. Dry matter offered to buffaloes from different feeds and fodders were 8.50, 10.47 and 11.85 kg/day whereas, DM required for buffaloes were 13.65, 13.95 and 14.32 kg/day in group I, group II and group III, respectively. DCP offered to buffaloes were 0.666, 0.796 and 0.793 kg/day whereas, DCP requirement of buffaloes were 0.596, 0.668 and 0.725 kg/day in group I, group II and group III, respectively. TDN offered to buffaloes were 3.88, 4.55 and 5.27 kg/day whereas, TDN required by buffaloes were 5.90, 6.48 and 7.10 kg/day in group I, group II and group III, respectively. Feeding of green roughages, dry roughages and concentrates was positive and significantly (P<0.05) correlated with milk production in all groups of farmers. Major constraints in feeding were only 13.33 per centfarmer's followed practice of preservation of fodder like silage/hay, whereas majority (80.00 %) farmers had lack of knowledge of balanced feeding. Techniques like enrichment of poor quality roughages with urea and ammonia were not adopted by farmers. Irrespective of herd size and milk yield buffaloes were fed inadequate in terms of DM, DCP and TDN.

Key words : *Feeding, buffaloes, dry matter, DCP, TDN.*

Introduction

Buffaloes are the backbone of rural economy in many developing countries of the Asian region including India. Buffaloes occupy a prominent place in the social economic and cultural life of Indian rural communities and are useful as a triple purpose animal for milk meat and draft power. Buffalo is more productive due to better feed conversion efficiency and more resistant to disease because of above specification buffaloes are more preferred by farmers over cattle. In India the buffalo populations are increasing and outnumber the cattle population simply because of their easy adaptability in harsh environment and producing milk of higher fat content. Feeding plays a pivotal role in exploiting the genetic potential of animal. Feeding alone contributes about 60-70 per cent of total cost of milk production and offers greatest scope to bring the input-output relationship to an economical level (1). The productivity of dairy animal has direct impact with planes of nutrient supplied through the feed. It is seen that, the feed supply to milch animal is inadequate in quantity and quality. This adversely effectson productivity and fertility of animal. However, the digestibility of dry fodder and crude fiber is significantly higher in buffaloes which results in efficient utilization of low grade roughages than cattle (2). As compare to cattle, the buffalo is neglected animal in respect of its improvement but still buffalo population is contributing to the more than 50 per cent in total milk production. Therefore, it is necessary to study feeding management practices followed in buffalo farming which will be helpful for improvement in buffalo feeding in study area. Purandar tahsil of Pune district includes most of the human population from middle class. This population gives preference to the buffalo milk rather than cow milk. So, to meet the demand of milk most of the farmers from Purandartahsil of Pune districts prefer to the buffalo rearing. With this consideration the present investigation was undertaken in Purandar tahsil to study the feeding management practices followed by buffalo owner and to

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identify constrains faced by buffalo owners in adopting scientific feeding practices.

Materials and Methods

Source of data : The present study was undertaken in Purandartahsil of Pune district of Maharashtra state. Purandar is one of the prominent tahsil of Pune district comprising of 110 villages out of which 15 villages were selected for the present study.

Collection of data : All the villages in the Purandar tahsil were arranged in descending order as per buffalo population. Then 5 villages from each group having highest, medium and lowest buffalo population were selected randomly. In all 150 buffalo owners were chosen randomly that is 10 buffalo owners from each village. These farmers were grouped into different groups as per the number of buffaloes they possessed. Group of farmers were as small up to 4buffaloes, medium having 5 to 8buffaloes and big possessing 9 and above buffaloes. Based on the objectives of study, a detailed questionnaire was prepared in English language which was used to collect data from the buffalo owners. This questionnaire covered information on feeding practices of buffalo followed by farmer. All the information regarding quantity of fodder offered to buffaloes for 24 hours was obtained from buffalo owners. The body weight of buffaloes was estimated from the girth and body length measurement by using following modified formula (3).

Statistical analysis : Mean, standard deviation and coefficient of variation as to estimate the central value and the extent in the variability in the data. The coefficient of variation was derived by adopting standard formula reported by (4). Coefficient of variation was used to compare the magnitude of relative dispersion among the data on different variation. correlation coefficients were worked out between various pairs of variables to know the relationship as per the formula suggested by (5).

$$r \quad \frac{xy \quad \frac{x\ y}{n}}{\sqrt{\frac{x^2\ x^2}{n} \quad \frac{y^2\ y^2}{n}}}$$

Where,

x = represent independent variable

y = represent dependent variable

Results and Discussion

Feeding of green roughages to buffaloes by the farmers : The majority (55.32%) of farmers were feeding their buffaloes at the rate of 14.1to18 kg green roughages per day. However, only 10.66 per cent of farmers fed their buffalo at the rate of 10 to12 kg green roughages per day.

Overall 16.79 kg of green roughages were fed to the buffaloes by various groups of farmers, where as farmers of group III fed comparatively more green roughages (19.03 kg) and farmers from group I fedat lower rate(14.68 kg).The farmers of group III provide more green roughages it may be due to they possess more land and cultivate more green fodder than other groups of farmer. These results were in accordance with (6) reported significant differences (P<0.01) between different groups of farmers and feeding of green roughages to buffaloes while studying on feeding management practices of buffalo in Jaipur district of Rajasthan.

Feeding of dry roughages to buffaloes by the various groups of farmers (kg/day) : Majority (28.00%) of farmers were feeding their buffaloes at the rate of 3.1to 4 kg dry roughages per day. However only 20.66 per cent of farmers fed their buffaloes at the rate of 1.1 to 2 kg dry roughages per day. It was observed that, overall 4.83 kg of dry roughages were fed to buffaloes by various groups of farmers, where as farmers of group III fed comparatively more dry roughages (5.46 kg) and group I fed less (4.13 kg) dry roughages. It might be due to the purchasing power of farmers from group III was high and also the byproducts of different crops used by them were from their own farms. Significant differences (P<0.01) were found between different group of farmers and feeding of dry roughages to buffaloes. These findings were in close agreement with (7) reported while studying in Nilgiri district of Tamilnadu.

Feeding of concentrate to buffaloes by the various groups of farmer : It was noticed that, 57.99 per cent of farmers offered 1 to 3 kg concentrates to their buffaloes whereas,12 per cent farmers fed 4.1 to 5 kg and 14 per cent of farmers offered less than 1 kg concentrates per day to their buffaloes. These results resembled with (8) reported significant differences (P<0.01) in different groups of farmers and feeding of concentrate to buffaloes. Overall 2.57 kg concentrate was fed daily to the buffaloes, where as farmers of group III comparatively fed more (3.17 kg) concentrate than the farmers of group I (1.92) and group II (2.62 kg). These findings were supported by (9) stated feeding sufficient amount of concentrates to full fill the nutritional amounts could favor the milk production in buffaloes.

Milk production of buffaloes by various groups of farmers : The data on daily milk production of buffaloes reared by various group of farmers revealed that 82.66 per cent of farmers had buffaloes that produced 4.1 to 8 kg daily milk production, while 17.33 per cent of farmers had buffalos that yielded 2 to 4 kg of milk per buffalo per day. There was highly significant differences (P<0.01) in milk production of buffaloes and various groups of farmers.

Table-1 : Feeding pattern of green roughages to buffaloes on dry matter basis (kg/day).

Groups	Green roughages (kg) Mean	Green roughages on dry matter basis (kg)	S.D.	S.E.	C.V%
Group I	14.68[c]	3.67	1.80	0.482	12.28
Group II	16.68[b]	4.17	3.15	0.551	18.88
Group III	19.03[a]	4.75	2.19	0.628	11.51
Pooled	16.79	4.19	2.38	0.553	14.22

Table-2 : Rate of feeding roughages and concentrate per unit milk production.

Groups of farmer	Milk yield per animal (kg)	Quantity of feed offered (kg)		Average feed for per kg milk production	
		Roughages	Conc.	Roughages	Conc.
Group I	5.51	7.38	1.72	1.33	0.31
Group II	6.78	8.59	2.35	1.26	0.34
Group III	7.54	9.66	2.85	1.28	0.37
Pooled	6.61	8.54	2.30	1.29	0.34

Table-3 : Nutritional status of buffaloes in Purandar tahsil (intake of DM, DCP, TDN/kg/animal/day).

Sr. No.	Group of farmers	DM (kg)	DCP (kg)	TDN (kg)	Body weight (kg)	Milk fat (%)	Milk yield (kg)
I.	**Group I**						
a.	Required	13.65	0.596	5.900	455	6.50	5.51
b.	Offered	8.5	0.666	3.882			
	Deficit/Surplus kg	-5.15	+0.07	-2.018			
II.	**Group II**						
a.	Required	13.95	0.668	6.480	465	6.34	6.78
b.	Offered	10.47	0.796	4.557			
	Deficit/Surplus kg	-3.48	+0.128	-1.923			
III.	**Group III**						
a.	Required	14.32	0.725	7.100	477.5	6.51	7.54
b.	Offered	11.85	0.918	5.271			
	Deficit/surplus kg	-2.47	+0.193	-1.829			
IV.	**Overall**						
a.	Required	13.97	0.663	6.490	465.83	6.35	6.61
b.	Offered	10.27	0.793	4.566			
	Deficit/Surplus kg	-3.7	+0.13	-1.924			

Table-4 : Correlations of green roughages, dry roughages and concentrate with milk production in various groups of farmers.

Particulars	Group of farmers		
	Group I	Group II	Group III
Green roughages × Milk production	0.547*	0.662*	0.773*
Dry roughages × Milk production	0.651*	0.749*	0.767*
Concentrates × Milk production	0.665*	0.798*	0.739*

*(P<0.05)

The overall milk production of buffalo under the study areawas 6.61 kg/day. The daily milk production of buffaloes maintained by the farmers of group III was highest (7.54kg) whereas buffaloes maintained by farmers of group I and group II had 5.51 kg and 6.78 kg of milk yield per day per animal, respectively.

Feeding of roughages and concentrates per unit milk production : On an average farmer had provided 1.29 kg roughages and 0.34 kg concentrates to harvest 1 kg of milk (Table-2). As per recommended scientific feeding practices 500 gm concentrates should be fed to buffaloes for 1 kg of milk production. However there was shortage of roughages provided for per kg milk production under this study area. These findings were in agreement with (10) when working on feeding system of dairy buffaloes on rural areas of trans Yamuna, in Allahabad district.

Nutritional status of buffaloes in Purandar tehsil : On the basis of body measurement the average body weight of buffaloes was worked out to know the actual requirements of buffaloes. According to Indian feeding standard, maintenance and production allowances were

calculated in terms of DM, DCP and TDN. The quantities of roughages and concentrates required were calculated as per their nutritive value. Feedstuffs were collected from the farmers and analyzed in laboratory for proximate principles. The data regarding per cent deficit or surplus of nutrients intake according to various groups of farmers has been presented in Table-3.

The average DCP intake in buffaloes was surplus by 0.13 kg however, TDN intake deficit by 1.924 kg and DM intake deficit by 3.7 kg. DM and TDN were deficit it may be due toless availability of dry roughages and concentrates also it might be due to poor quality of roughages.

Correlation Studies : Feeding of green roughages, dry roughages and concentrates was positively and significantly ($P<0.05$) correlated with milk production in all groups of farmers.

Adoption of Scientific Feeding Practices and Constraints Perceived : The adoption of scientific feeding practices by buffalo owners was assessed and was noticed that, 80 per cent of farmers had lack of knowledge of balanced feeding to their animals. Maximum (28.66%) of owners under study used homemade concentrates mixtures for feeding the animals. whereas, only 13.33 per cent of farmers adopted silage for preservation of fodder. Availability of green fodder through the year was major problem faced by 73.33 per cent farmers.

Conclusions

Buffaloes in Purandar taluka were fed more DCP irrespective of herd size and milk yield while there was inadequate supply of DM and TDN to the buffaloes. Adoptions of scientific feeding practices were poor in Purandar tahsil of Pune district. There were number of constraints perceived by farmers in adopting scientific feeding practices. Enrichment of poor quality roughages with urea and silage making were not adopted by farmers. Very few farmers supplied their animals with mineral mixture. Hence, livestock owner needs to adopt scientific feeding of their livestock for exploiting maximum potential of buffaloes.

References

1. Vashisht, S.D., Pragati Yadav, Satpal, Pawan Kumar and Parveen Kumar (2020). Information technology in agriculture : Boon in doubling farmers' income. *Frontiers in Crop Improvement*, 8(2): 132-136.
2. Badal P.S. and Dhaka J.P. (1998).analysis of feeding pattern and cost of milk production in Gopalganj district of Bihar. *Indian Journal of Dairy Science,* 12(4): 52-54.
3. Johnson R.W. and Toshach C.E. (1964). Estimation of fetal weight using longitudinal mensuration.
4. Panse V.G. and Sukhatme P.V. (1967). Statistical methods for Agricultural workers 2nd Ed. ICAR.71.
5. Snedecor G.W. and Cochran W.S. (1994). Statistical methods 8th Ed oxford and *IBH Pub. Co.,* Calcutta.
6. Manohar D.S., Goswami S.C. and Bias B. (2014). Study on feeding management practices of buffaloes in relationship with selected traits of respondents in Jaipur District of Rajasthan. *Indian Journal of Animal Research,* 48(2): 150-154.
7. Avinashilingan V., Singh U. and Kumar R. (2011). Existing dairy farming practices of six major dairy tribes of Nilgiri district of Tamilnadu. *Indian Journal of Dairy Science.* 61(1): 80-87.
8. Kumar R., Singh P.K., Goyal R.K., Singh H. and Kumhar B.L. (2017). Existing feeding and housing management practices of buffaloes on Firozabad district of Uttar Pradesh, India. *International Journal of Current Microbiology and Applied Sciences,* 6(5) 239-245.
9. Bidwe K.U., Chavan S.D. and Padghan P.V. (2009a). Studies on breeding management practices followed by the buffalo owners of Buldana district of Maharashtra. *Indian J. Anim. Res*., 43(1): 71-74.
10. Swaroop D. and Prasad J. (2007).Studied feeding system of dairy cattle and buffaloes on rural areas of Trans Yamuna, Allahabad district. *Paper presented in National symposium on recent trends in policy initiatives and technological interventions for rural prosperity in small holder livestock production systems,* held at Tirupati from 20-22 June, 2007: 75-76.