Indian Journal of Animal Sciences **81** (1): 91–93, January 2011

Seasonal feeding pattern of dairy animals in scarce rainfall zone of Andhra Pradesh

S SREEDHAR[1]

Sri Venkateswara Veterinary University, College of Veterinary Science, Tirupati 517 502, Andhra Pradesh

Received: 20 September 2009; Accepted: 23 October 2010

Key words: Dairy animal, Feeding, Green fodder, Grazing, Silage, Season

India has emerged as the largest milk producer in the world, but the productivity of dairy animals is dismally low. The low milk production of dairy animals is mainly due to inadequate nutrition. There is deficiency of green fodder, dry fodder and concentrates due to which animals do not get adequate feed for expression of their genetic potential for milk production (Kundu *et al.* 2005). It is necessary to know the feeding practices and the feed resources available with the farmers to develop profitable dairy enterprise. An in-depth understanding of existing feeding practices of dairy animals would help for planning and taking up any research or development programme. Hence a study was undertaken to assess the existing seasonal pattern of feeding practices of dairy animals in Anantapur district of Andhra Pradesh.

The present investigation was conducted in Madakasira and Hindupur mandals of Anantapur district of scarce rainfall zone in Andhra Pradesh. A total 120 farmers were selected from 6 villages, 20 from each village by using stratified random sampling technique. The respondents having at least two dairy animals at the time of investigation were interviewed. The data were gleaned from the respondents through personal interview using a pretested interview schedule. Grazing time, frequency of stall feeding, quantity of dry and green fodder, concentrate and silage fed to the animals in different seasons were recorded. The data were analyzed by using the statistical tools as per Snedecor and Cochran (1994).

The data on feeding pattern of different categories of dairy animals during winter, summer and rainy seasons are given in Tables 1 and 2. The combination of stall feeding and grazing was the most prevalent mode of feeding in dairy animals of Anantapur district.

Table 1. Feeding pattern of different categories of dairy animals in winter, summer and rainy seasons.

Category of animal	Grazing time (hours/day)			Frequency of feeding per day			Dry fodder (kg/day)		
	Winter	Summer	Rainy	Winter	Summer	Rainy	Winter	Summer	Rainy
Wet cow	5.42±0.03	7.15±0.04	5.06±0.04	2.12±0.04	1.95±0.03	1.81±0.03	5.75±0.13	7.00±0.10	5.50±0.08
Wet buffalo	5.42±0.03	7.15±0.04	5.06±0.04	2.04±0.04	1.92±0.02	1.82±0.03	6.50±0.08	7.00±0.19	6.12±0.04
Dry cow/buffalo	6.02±0.06	7.42±0.05	5.22±0.06	1.88±0.02	1.76±0.03	1.80±0.03	5.98±0.04	6.08±0.04	5.72±0.06
Calves	5.42±0.03	7.l5±0.04	5.06±0.04	2.02±0.04	1.92±0.02	1.84±0.01	1.24V0.02	1.79±0.0l	1.52±0.05
Heifers	6.02±0.06	7.42±0.05	5.22±0.06	1.82±0.03	1.71±0.03	1.75±0.03	3.22±0.0l	3.74±0.02	2.91±0.0l
Bullocks	0.81±0.04	1.42±0.05	1.04±0.04	2.17±0.02	2.02±0.04	2.12±0.04	8.98±0.12	9.47±0.13	8.72±0.l0

Table 2. Feeding pattern of different categories of dairy animals in winter, summer and rainy seasons.

Category of animal	Green fodder (kg/day)			Concentrates (kg/day)			Silage (kg/day)		
	Winter	Summer	Rainy	Winter	Summer	Rainy	Winter	Summer	Rainy
Wet cow	21.50±0.51	0	20.75±049	1.50±0.08	1.80±0.03	1.40±0.05	0	3.5±0.08	0
Wet buffalo	25.50±0.51	0	23.50±0.45	1.75±0.04	2.00±0.11	1.50±0.11	0	3.83±0.l7	0
Dry cow/buffalo	12.75±0.33	0	15.25±0.40	0.40±0.05	0.52±0.04	0.32±0.04	0	0	0
Calves	5.25±0.04	0	3.75±0.02	0.15±0.0l	0.l2±0.0l	0.13±0.01	0	0	0
Heifers	l0.75±0.16	0	8.75±0.17	0.17±0.0l	0.18±0.0l	0.15±0.0l	0	l.5±0.l2	0
Bullocks	21.25±0.33	0	20.75±0.27	1.00±0.1l	0.93±0.10	0.83±0.10	0	0	0

Present address: [1]Assistant Professor, Department of Livestock Production and Management, College of Veterinary Science (e mail: sreedhar_svvu@yahoo.co.in).

Grazing: In the present study the animals were sent for

grazing for a period of 5–8 hours daily which is in agreement with those observations reported by Tomar and Thakur (2002). Wet cows, wet buffaloes and calves were sent for grazing 5.42±0.03, 7.l5±0.04 and 5.06±0.04 hours per day during winter, summer and rainy seasons respectively. Whereas dry cows/buffaloes and heifers were sent separately for grazing for 6.02±0.06, 7.42±0.05 and 5.22±0.06 hours per day during winter, summer and rainy seasons respectively. The bullocks were sent for grazing only for few hours since they were used for agricultural operations and hence fed at home under stall feeding. The present findings were in concurrence with those observed by Meena *et al.* (2008) and Das and Tripathi (2008) who reported the combined feeding practice of grazing and stall feeding. However, Jain and Verma (1992) reported less time spent by farm women for grazing the large ruminants.

Frequency of feeding: The bullocks were fed more than twice because they were used for draught purpose and engaged for various agricultural operations. Similarly, the wet cows and buffaloes were also fed more than two times since additional care was given to the high milk yielders. Meena *et al*. (2008) reported similar findings regarding frequency of feeding wet cows and buffaloes in Bundelkhand region during winter, summer and rainy seasons.

Feeding of dry fodder: Wet cows were fed with dry fodders such as paddy straw, dried grass and stovers of sorghum and maize at the rate of 5.75±0.13, 7.0±0.l0 and 5.50±0.08 kg animal/day during winter, summer and rainy seasons, respectively, whereas wet buffaloes were fed 6.50±0.08, 7.0±0.l9 and 6.12±0.04 kg/animal/day in respective seasons. The quantity of dry fodder provided to dry cows was 5.98±0.04, 6.08±0.04 and 5.72±0.06 kg/animal/day during winter, summer and rainy seasons respectively. Similarly, the bullocks were fed dry fodder 8.98±0.12, 9,47±0.13 and 8.72±0.10 kg/animal/day during respective seasons. Calves were provided less quantity of dry fodder than the other categories of animals which indicated that feeding was done on the basis of body size of the animals. The present findings are in accordance with those observed by Meena *et al.* (2008). Less quantity of dry fodder was provided to all categories of animals due to surplus availability of green fodder in the study area.

Feeding of green fodder: All categories of animals were offered green fodder like Napier, *jowar*, maize, uprooted weeds and tree leaves during winter and rainy seasons except summer. The quantity of green fodder provided to wet cows was 21.50±0.51 and 20.75±049 and to wet buffaloes was 25.50±0.51 and 23.50±0.45 kg/animal/day during winter and rainy seasons, respectively, whereas the dry cows/buffaloes were fed 12.75±0.33 and 15.25±0.40 kg/animal/day during the same seasons respectively. From the study, it was revealed that milch buffaloes were fed with more quantity of green fodder since they are high milk yielders than cows. The present findings are in agreement with those reported by Meena *et al. (2008).*

Feeding of concentrates: Farmers prepared concentrate feed locally by mixing rice bran, maize flour and groundnut cake as feed ingredients which was also reported by Deoras *et al*. (2004). Wet cows and wet buffaloes were fed concentrate feed 1.4±0.05 to 1.80±0.03 and 1.50±0.11 to 1.50±0.11 kg/animal/day, respectively, whereas the dry cows/ buffaloes were fed only 0.32±0.0.04 to 0.52±0.04 kg/animal/ day which indicated the least priority given by the farmers as compared to the milch animals. The farmers provided more concentrate feed to lactating animals to get more milk from them. The quantity of concentrate feed provided to calves and heifers was almost negligible and the bullocks were offered 0.83±0.l0 to 1.00±0.11 kg/animal/day.

Feeding of silage: Only a few farmers practised feeding of silage to the dairy animals during summer season when there is acute shortage of fodder. The farmers, who have bore-well facility, produced more fodder during lean season. The surplus fodder produced from Napier and *jowar* was stored in the form of silage and fed to the animals during scarcity period like summer. Wet cows and wet buffaloes were fed silage 3.5±0.08 and 3.83±0.17 kg/animal/day, respectively, during summer season, whereas the heifers were offered silage only 1.5±0.l2 kg/animal/day during summer. The farmers thought that silage feeding would compensate nutritional supplementation to the milch animals and hence the lactation performance of the animal may not be affected.

Knowledge of farmers about feeding practices of dairy animals: About 46.5% of farmers have knowledge on feeding practices of dairy animals. The farmers had poor knowledge on colostrum feeding and quantity of milk fed to new born calves. Majority of the farmers concentrated on feeding of lactating animals (62.67%) followed by pregnant (58.21%) and heifers (52.43%). Our findings confirm those of Shanna *et al.* (2007). However, the farmers need training on feeding practices of dairy animals for profitable dairy farming.

SUMMARY

An exploratory study was conducted in Anantapur district of Scarce rainfall zone to assess the existing seasonal feeding pattern of dairy animals. The study revealed that combination of stall feeding and grazing was the most prevalent mode of feeding dairy animals. The animals were sent for grazing for a period of 5–6 hours daily. The farmers adopted stall feeding twice a day in morning and evening. Paddy straw, dried grass and stovers were used as dry fodders. The quantity of green fodder fed to wet cows was 21.50±0.51 and 20.75±0.49 kg/animal/day during winter and rainy seasons respectively. The lactating animals were fed 1.4±0.05 to 2.00±0.11 kg concentrates daily in the form of mash. Few farmers feeding silage to their animals during scarcity period.

REFERENCES

Das S K and Tripathi H. 2008. Livestock feeds and feeding practices in rural Sunderban delta of India. *Animal Nutrition Feed Technology* **8**: 137–42.

Deoras R, Nema R K and Mishra U K. 2004. Management practices of calves in Rajnandgaon district of Chhattisgarh plain. *Indian Journal of Animal Sciences* **74** (I): 91–93.

Jain V and Verma S K. 1992. Nature and extent of involvement of men and women in animal husbandry. *Indian Dairyman* **44**(7): 332–37.

Kundu S S, Sultan Singh S K, Mahanta and Pailan G H. 2005. *Feeding Farm Animals*. Satish Serial Publisher, Delhi.

Meena B S, Kundu S S and Jitendra C. 2008. Existing seasonal feeding patterns of dairy animals in Jhansi district of Bundelkhand region. *Indian Journal of Animal Nutrition* **25**(1): 63–66.

Sharma P, Nagpaul P K and Kiran S. 2006. *Indian Journal of Dairy Science* 14: 52.

Snedecor G W and Cochran W G. 1994. *Statistical* methods. 8th edn. Iowa State University Press, Ames, USA.

Tomar S K and Thakur S S. 2002. Feed resources, feeding practices, milk production and disposal pattern in Kamal district. *Indian Journal of Dairy Science* **55**(5): 306–09.