



A study on adoption of recommended feeding practices by the buffalo owners of Punjab

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Received: 1 February 2010; Accepted: 11 February 2011

Key words: Adoption, Buffalo owner, Constraints, Feeding practices

Agriculture and dairy farming are complementary to each other. Presently, Punjab is contributing approximately 10% towards total milk production with 3% of the total bovine population of India, resulting highest per capita availability of milk (960 g) (Anonymous 2006). Buffalo is the main dairy animal in the Punjab, almost 62% of the total live stock population. The Murrah and Niliravi are the famous breeds of buffalo found in Punjab and are well known for milk production. The adoption of recommended dairy practices, therefore becomes a pre-requisite for sustained growth and development of dairy industry.

Very little efforts have been made to study the adoption of recommended feeding practices in Punjab. So, keeping all the facts in mind, the present study was conducted to find out the extent of adoption and constraints perceived by the buffalo owners in adoption of recommended feeding practices.

The study was conducted in 3 districts namely Bathinda, Ferozpur and Sangrur of Punjab during 2008–09. The sampling procedure employed to select ultimate unit of sample was multi stage sampling technique. Three categories of buffalo owners were prepared on the basis of number of adult buffalo possessed by them, namely small buffalo owners (1–2 adult buffalo), medium (3–5 adult buffalo) and large (more than 5 adult buffalo). The total sample size for the study was 180 buffalo owners.

The data were collected by personal interview techniques through a interview schedule, comprising of eight recommended feeding practices. The respondents were asked to give their opinion about adoption on three point continuum, always, sometimes and never use the practice and scores of

2,1 and 0 were allotted. The recorded responses were counted and mean percent scores were calculated for each individual practice and ranks were allotted accordingly. The buffalo owners from different groups were also divided into 3 categories namely low, medium and high level of adoption using mean and one standard deviation formulae. To find out the constraints perceived by the buffalo owners, a list of various constraints in the area of feeding were prepared in consultation with extension scientists, available literature, field veterinarians and progressive buffalo owners. The perceived constraints were categorized as very serious, serious and somewhat serious using mean and one standard deviation formulae. The results have been tabulated and presented under following sub sections.

Adoption level of recommended feeding practices: Among the small buffalo owners, majority (71.08%) had medium, followed by high (21.69%) and low (7.23%) level of adoption (Table 1a). In case of medium category of buffalo owners, 73.44, 17.19, and 9.38% had medium, high and low level of adoption, respectively. Among the large category of buffalo owners, majority (60.61%) had medium, whereas 24.24 and 15.15% of them had high and low level of adoption, respectively.

The pooled analysis of 180 respondents, indicated that 82.22, 12.78 and 5.0% of the respondents had medium, high and low level of adoption of recommended buffalo feeding practices, respectively. So it can be concluded that buffalo owners have moderate level of adoption. These findings are supported by the findings of Sharma *et al* (2007), Singh and Chauhan (2009).

Item-wise extent of adoption of recommended feeding practices: In feeding, 8 practices were included. Majority (88.33%) of the respondents irrespective of their herd size, fed colostrums to the new born calves (Table 2). However, very few of them adopted 'hay - silage feeding' and mineral mixture feeding practices to the extent of 8.06% and 40.83% respectively. Balanced ration feeding, milk based concentrate feeding, green fodder feeding, feeding of consternate in the

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Table 1 a. Adoption level of buffalo owners about recommended feeding practices

Aspects	Category	Buffalo owners category							
		Small (n=83)		Medium (n=64)		Large (n=33)		Overall (n=180)	
		f	%	f	%	f	%	f	%
Feeding	Low	6	7.23	6	9.38	5	15.15	9	5.00
	Medium	59	71.08	47	73.44	20	60.61	148	82.22
	High	18	21.69	11	17.19	8	24.24	23	12.78

Table 1 b. Constraints perceived by buffalo owners in adoption of recommended feeding practices

Aspects	Category	Buffalo owners category							
		Small (n=83)		Medium (n=64)		Large (n=33)		Overall (n=180)	
		f	%	f	%	f	%	f	%
Feeding	Somewhat serious	15	18.07	11	17.19	0	0.00	19	10.56
	Serious	51	61.45	25	39.06	24	72.73	117	65.00
	Very serious	17	20.48	28	43.75	9	27.27	44	24.44

f, Frequency.

Table 2. Item-wise adoption level of buffalo owners about feeding practices

Items/Aspects	Buffalo owners category															
	Small (n=83)				Medium (n=64)				Large (n=33)				Overall (n=180)			
	TS	MS	MPS	RO	TS	MS	MPS	RO	TS	MS	MPS	RO	TS	MS	MPS	RO
Colostrum feeding	138	1.66	83.13	I	118	1.84	92.19	I	62	1.88	93.94	I	318	1.77	88.33	I
Feeding of concentrate on milk production basis	104	1.25	62.65	III	78	1.22	60.94	IV	44	1.33	66.67	III	226	1.26	62.78	III
Feeding of concentrate in the last quarter of pregnancy	113	1.36	68.07	II	68	1.06	53.13	V	32	0.97	48.48	V	213	1.18	59.17	V
Feeding of mineral mixture	75	0.90	45.18	VI	40	0.63	31.25	VII	32	0.97	48.48	V	147	0.82	40.83	VII
Cultivation of HYV of fodder	55	0.66	33.13	VII	61	0.95	47.66	VI	32	0.97	48.48	V	148	0.82	41.11	VI
Hay and silage feeding	18	0.22	10.84	VIII	11	0.17	8.59	VIII	0	0.00	0.00	VIII	29	0.16	8.06	VIII
Feeding of green fodder	88	1.06	53.01	V	90	1.41	70.31	III	36	1.09	54.55	IV	214	1.19	59.44	IV
Balance ration feeding	102	1.23	61.45	IV	96	1.50	75.00	II	45	1.36	68.18	II	243	1.35	67.50	II

last quarter of pregnancy and cultivation of high yielding varieties of fodder practices were adopted to the extent of 67.50, 62.78, 59.44, 59.17 and 41.11%, respectively. The farmers of small herd size had lower adoption rate (61.45%) about balanced ration feeding to buffalo as compared to the medium (75.00%) and large herd owners (68.18%). The possible reason for low adoption rate may be that the small farmers were not fully aware about the importance of balance feeding which is an important aspect for increasing milk productivity. The findings of the study are supported by the findings of Singh *et al.* (2007), Kalyankar *et al.* (2008) and Singh *et al.* (2009) in which low level of adoption of mineral mixture feeding was reported.

Constraints perceived by the buffalo owners in adoption of recommended feeding practices: Among the small buffalo owners 61.45% of the respondents perceived feeding constraints as serious, whereas 20.48 and 18.07% reported these as very serious and somewhat serious, respectively (Table 1 b). In case of medium category of buffalo owners, 43.75, 39.06 and 17.19% reported feeding constraints as very serious, serious and somewhat serious, respectively. Similarly in case of large dairy farmers 72.73 and 27.27% perceived these constraints as serious and very serious but none of the respondent reported these constraints as somewhat serious nature. The overall response of respondents regarding feeding constraints revealed that about one forth

Table 3. Relationship between personal attributes and extent of adoption of feeding practices

Variables	Buffalo owners category			
	Small (n=83) 'r'	Medium (n=64) 'r'	Large (n=33) 'r'	Overall (n=180) 'r'
Age	-0.2528*	-0.1359	0.2545	-0.1642*
Education	0.2687*	0.2262	0.2129	0.2381*
Land holding	0.3398*	0.0435	0.0922	0.2104*
Caste	0.4208*	0.1675	-0.0790	0.3348*
Social participation	-0.0086	-0.0048	0.0638	0.0090
Extension contacts	0.1095	-0.1483	0.1797	0.0368
Mass media exposure	-0.0147	0.0472	0.2178	0.0244

*Significant 5% level of probability.

(i.e. 24.24%) of the respondents reported these constraints as very serious. Whereas 65.00 and 10.56% of them reported feeding constraints as serious and somewhat serious nature, respectively. These results are in line with the findings of Dass and Malik (2003).

Relationship between personal attributes of buffalo owners with adoption of recommended feeding practices: Education level, land holding and caste had positive and significant while age had negative and significant relationship with adoption of feeding practices, in case of small buffalo owners (Table 3). In case of medium and large categories of buffalo owners, none of the independent variable had significant relationship with feeding practices. So, overall it was found that education level, land holding and caste had positive and significant while age had negative and significant relationship with adoption of recommended feeding practices. Social participation, extension contacts and mass media exposure had positive and nonsignificant relationship.

SUMMARY

The study was conducted in Punjab to find out the extent of adoption of recommended feeding practices and constraints perceived in adoption by the buffalo owners. Overall respondents had medium level of adoption and majority of the respondents belonged to different categories of herd size faced the feeding constraints of serious nature. Maximum adoption was observed in case of colostrum feeding to newly born calves (88.33%) whereas low rates were observed in case of hay silage feeding (8.06%), application of mineral mixture (40.83%) and cultivation of

high yielding varieties of fodder (41.11%). Education level, land holding and caste had positive and significant whereas age had negative and significant relationship with adoption of recommended feeding practices. Extension functionaries should create more awareness among the buffalo owners about the aspects where the adoption is low.

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