

## STUDIES ON DAIRY FARMING PRACTICES ADOPTED FOR CROSSBRED COWS AROUND BHANDARA CITY

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### ABSTRACT

The present investigation was carried around Bhandara city during the year 2014-2015, to study the various dairy farming practices adopted by crossbred cows under field condition. Four villages viz., Sahapur, Bela, Ganeshpur and Kardha were randomly selected. The information on feeding management, housing pattern, health and sanitation and breeding aspects were collected by contracting with 200 crossbred cow owners. Few scientific recommendations in feeding were adopted by majority of crossbred cow owners. The results revealed that the scientific feeding practices like balanced ration at regular interval, enrichment of poor quality roughages by urea, ammoniation and molasses, feeding at least 5 kg green fodder, feeding of concentrate @ 40 per cent of milk production, use of 60 g common salt, mineral mixture and mineral bricks were not adopted by majority of the (more than 75%) cattle owners. However, majority of the farmers belonging to the category 1-3 crossbred cattle owners (75.70%) and 4-6 crossbred cattle owners (74.07%) adopted feeding of dry, green and concentrate in required proportion. Most of the crossbred cattle owners adopted the feeding practices like processing of roughages and concentrate (80.50%), feeding of dry matter 2-2.5 kg 100<sup>-1</sup> kg body weight (80.50) and inclusion of agro-industrial by product like turchunni, bran etc. (72.50%). Thus, the results revealed that there is wide scope of improvement in the adoption of scientific feeding practices by educating them properly. However, with regards to traditional, improved and recommended housing pattern majority of cattle owners adopted open shed (75.00%), kaccha (77.00%), part of residence (81.00%), flooring of kaccha (69.00%) and non-available of urine to drain out (83.50%) in all kinds of housing pattern.

Health and sanitation measures such as washing of udder before milking, cleaning of milking utensils, cleaning of shed and grooming of crossbred cattle were adopted by 64.00% crossbred cattle owners. Similarly most of the crossbred cattle owners (97.00%) adopted vaccination. Most of the crossbred cattle owners (94.50%) adopted artificial insemination method for breeding in the study area. Only 5.50% crossbred cattle owners adopted natural service for breeding. It indicates that there is need to organize training programmes and demonstrate scientific feeding and management practices which help to increase in the rate of adoption of scientific recommended dairy farming practices at farm level.

(Key words: Scientific feeding practices, housing pattern, health and sanitation, breeding methods)

### INTRODUCTION

India is home tract for the largest milch animal population in the world. The cattle is major integrate compound of the Indian dairy farming. In India cattle is commonly reared in small scale, large scale farms and for domestic milk production. Crossbred cattle are easily reared by small, marginal farmers as well as landless labourers. India is the largest milk producing country in the world with the production of 143.8 million tons during the year 2014-2015 (Anonymous, 2015). It is reported that by the year 2020 the milk production in India will be 168 million tons (Gandhi, 2005).

With increase in the population of the crossbred cattle, there is need of adoption of scientific management

practices and new dairy farming technologies for increasing the milk production. Maximum crossbred cattle owners reared more number of Jersey crossbred cattle than Holstein-Friesian. Thus, the cattle owners were interested in rearing of Jersey cattles which might be due to more milk obtained from them than local cattles. The productive performances of the crossbred cows may differ from that of the indigenous ones living in different geographical areas where harsh environmental condition exist (Alam *et al.*, 2001).

The number of crossbred cattle is increasing day by day with the spread of artificial insemination (AI) practices throughout the country. The milk production of indigenous cattle is low as compared to improved breeds of cattle (Rahman *et al.*, 1998). The productive performances of the crossbred cows may differ from that of the indigenous

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ones living in different geographical areas where harsh environmental condition exists (Alam *et al.*, 2001).

The dairy technologies encompass the use of crossbred animals, improved feed technology and improved management (Mohamed *et al.*, 2004). The effect of several technical (breed, A.I., vaccination etc.) and socio demographic factors would be beneficial to improve the dairy production.

Keeping these in view, an attempt was made to study on the adoption of improved dairy farming practices was undertaken for crossbred cows around Bhandara city, Dist. Bhandara (M.S.).

## MATERIALS AND METHODS

The study was carried out around Bhandara city during the year 2014 – 15. Four villages viz., Sahapur, Bela, Ganeshpur and Kardha were randomly selected. The information on dairy farming practices was obtained from the crossbred cattle owners through personal interaction with the help of questionnaire from selected villages for the study. The list of 50 crossbred cattle owners was prepared for each village with the help of gramsevak and livestock development officer of Panchayat Samiti. These crossbred cattle owners were contacted from each village and accordingly total cattle owners contacted were 200.

The data with regards to various aspects of study such as land holding, cropping pattern, crossbred cattle owners, availability of feed and fodders, grazing facilities, milk yield, routine management practices, availability of shed, number of milch animals and availability of veterinary facility etc. were collected. These data were tabulated carefully. To study the recommended scientific feeding practices aspects, the data were categorized on the basis of size of herd of crossbred cattles in the following groups.

1. 1 to 3 crossbred cattles, 2. 4 to 6 crossbred cattles
3. 7 to 10 crossbred cattles, 4. Above 10 crossbred cattles

The data collected in respect of above parameters were tabulated and subjected to statistical evaluation by adopting the standard technique prescribed by Snedecor and Cochran (1967).

## RESULTS AND DISCUSSION

### Adoption of scientific feeding practices

Data regarding adoption of recommendations regarding scientific feeding by various categories of crossbred cattle owners are presented numerically in table 1.

It is revealed from table 1 that among the scientific feeding practices majority of the crossbred cattle owners from all categories did not adopt most of the feeding practices such as feeding of balanced ration at regular interval, enrichment of poor quality roughages by urea, ammoniation and molasses, feeding at least 5 kg green fodder, feeding of concentrate @ 40 per cent of milk

production, use of 60 gm common salt, mineral mixture and mineral bricks and feeding concentrate mixture @ 1 to 1.5 kg to pregnant crossbred cattles.

The highest level of adoption of feeding of dry, green and concentrates in required proportion was done by the crossbred cattle owners of 1-3 crossbred cattles category (75.70%) followed by category of 4-6 crossbred cattle owners (74.07%), 7-10 crossbred cattle owners (32.00%) and above 10 crossbred cattle owners (28.57%), respectively. Processing of roughages and concentrate before feeding, chaffing/water soaking was adopted at the highest level by the 1-3 crossbred cattle owners (96.26%) followed by 4-6 crossbred cattle owners (85.18%) and above 10 crossbred cattle owners (57.14%). However, only 16.00% crossbred cattle owners having 7-10 crossbred cattles adopted these practices. Inclusion of agro-industrial byproduct like turchunni, bran etc. in the feeding of crossbred cattles was adopted by 94.39% crossbred cattle owners belonging to 1-3 cattles category followed by 62.96% by 4-6 crossbred cattle owners and 50.00% by crossbred cattle owners having more than 10 cattles. However, poor adoption for these practices was found by the 7-10 crossbred cattle owners.

Thus, regarding overall adoption of recommended scientific feeding practices majority of the practices had not adopted even up to 30% and only few practices like feeding of dry, green and concentrate in required proportion, processing of roughages and concentrate before feeding, chaffing/water soaking, feeding of dry matter 2.5 to 3 kg 100<sup>-1</sup> kg body weight, inclusion of agro-industrial by product like turchunni, bran etc. have been adopted by majority of the farmers belonging to category of 1-3 crossbred cattle owners and 4-6 crossbred cattle owners. Above 10 and 7-10 crossbred cattle owners had poor adoption of these practices. This might be due to minimum number of animal, individual care could be taken by the family members of crossbred cattle owners, while individual care of animal may not be possible in large herd size of crossbred cattle i.e. the medium level of adoption was more observed.

These findings are in conformity with the findings of Singh *et al.* (2012), They observed from the data that 20.4, 48.9 and 30.6 per cent of the dairy farmers in the study area had fallen in low, medium and high categories respectively in the overall adoption of dairy practices. Meena *et al.* (2012) and Halakatti *et al.* (2007) also reported that majority of the respondents belonged to medium adoption category.

### Housing management

Data regarding housing pattern adopted by crossbred cattle owners are presented in table 2.

It is observed from the data that 75.00% crossbred cattle owners adopted open shed for housing their crossbred cattles and closed shed housing pattern was used by minimum number of crossbred cattle owners i.e. 15.00 per cent under improved one and 10 per cent as recommended. It was further noticed that 77.00%, 81.00%,

**Table 1. Adoption of scientific recommendation in feeding of milch crossbred cattles to herd size of herd in Bhandara city**

Sr No	Recommendation feeding practices	1 to 3 crossbred cattle owners		4 to 6 crossbred cattle owners		7 to 10 crossbred cattle owners		Above 10 crossbred cattle owners	Per cent	Bhandara city	Per cent
		Per cent	crossbred cattle owners	Per cent	crossbred cattle owners	Per cent	crossbred cattle owners				
1	{ Feeding of balanced ration at regular interval	28.97	14	25.92	6	24.00	3	21.42	54	27.00	
2	{ Feeding of dry, green and conc. in required proportion	75.70	40	74.07	8	32.00	4	28.57	133	66.50	
3	{ Processing of roughages and conc. before feeding, chaffing/water soaking	96.26	46	85.18	4	16.00	8	57.14	161	80.50	
4	{ Enrichment of poor quality roughages by urea, ammoniation and molasses	5.60	2	3.70	-	-	1	7.14	9	4.50	
5	{ Feeding at least 5 kg green fodder	36.44	20	37.03	4	16.00	5	35.71	68	34.00	
6	{ Feeding of dry matter 2.5 to 3 kg/100 kg body weight	95.32	42	77.77	6	24.00	11	78.57	161	80.50	
7	{ Inclusion of agro-industrial by product like ture chunni, bran etc	34.39	34	62.96	3	12.00	7	50.00	145	72.50	
8	{ Feeding of conc. @ 40 per cent of milk production	49.53	10	18.51	2	8.00	3	21.42	68	34.00	
9 (a)	Use of 60 gm common salt	42.99	10	18.51	2	8.00	1	7.14	59	29.50	
(b)	Use of mineral mixture	5.60	5	9.25	2	8.00	1	7.14	14	7.00	
(c)	Use of mineral bricks	-	-	-	-	-	-	-	-	-	
10	{ Feeding of conc. Mixture @ 1 to 1.5 kg to pregnant animal	34.57	14	25.92	3	12.00	8	57.14	62	31.00	

Table 2. Housing pattern adopted by selected crossbred cattle owners

Category	No.	Component	Sahapur	Bela	Ganeshpur	Kardha	Overall total	Per cent
<b>Traditional</b>	<b>1. Cowshed</b>							
		a) Open	37	35	38	40	150	75.00
		b) Kachha	38	36	39	41	154	77.00
		c) Part of residency	39	40	42	41	162	81.00
		<b>2. Flooring</b>						
		a) Kachha	33	32	35	38	138	69.00
<b>Improved</b>		b) Pacca drain for urine drain out is unavailable	41	39	43	44	167	83.50
	<b>1. Cowshed</b>							
		a) Closed	8	9	7	6	30	15.00
		b) Pacca	8	8	7	6	29	14.50
		c) Separate	7	7	5	5	24	12.00
		<b>2. Flooring</b>						
	a) Pacca	10	9	8	7	34	17.00	
	b) Pacca drain for urine drain out is available	7	8	5	5	25	12.50	
<b>Recommended</b>	<b>1) Cowshed</b>							
		a) Closed	5	6	5	4	20	10.00
		b) Pacca	4	6	4	3	17	8.50
		c) Separate	4	3	3	4	14	7.00
	<b>2) Flooring</b>							
		a) Pacca	7	9	7	5	28	14.00
		b) Pacca drain for urine drain out is available	2	3	2	1	8	4.00
		<b>Ventilated</b>	50	50	50	50	200	100
	<b>Non ventilated</b>	-	-	-	-	-	-	

**Table 3. Health and sanitation adopted by crossbreed cattle owners**

Sr.No	Component	Name of selected village				Overall Total	Per cent
		Sahapur	Bela	Ganehpur	Kardha		
<b>A</b>	<b>Cleaning</b>						
1)	Washing of udder before milking	50	50	50	50	200	100
2)	Cleaning of milking utensils	50	50	50	50	200	100
a)	Cleaning of shed	49	50	48	48	195	97.50
b)							
3)	Cleaning of shed not practices	1	-	2	2	5	2.50
<b>B</b>	<b>Health</b>						
1	Grooming						
	i) Regularly	34	36	32	26	128	64.00
	ii) Irregularly	16	14	18	24	72	36.00
2	Washing						
	i) Regularly	28	31	27	24	110	55.00
	ii) Irregularly	22	19	23	26	90	45.00
3	Vaccination	50	50	48	46	194	97.00

**Table 4. Breeding methods adopted by selected crossbred cattle owners**

Sr No.	Component	Name of selected villages				Overall Total	Per cent
		Sahapur	Bela	Ganeshpur	Kardha		
1	Natural Service	2	1	3	5	11	5.50
2	Artificial insemination	48	49	47	45	189	94.50

69.00% and 83.50% crossbred cattle owners adopted kachha shed, part of residency, kachha flooring and no drain out for urine for housing their crossbred cattles, respectively and 100% crossbred cattle owners had fully ventilated housing shed respectively for their crossbred cattles. On the other hand, pucca housing pattern was used by 14.50 per cent crossbred cattle owners under improved and 8.50 per cent under recommended, 12.00 and 7.00 per cent crossbred cattle owners adopted separate housing pattern as under improved and recommended, respectively. Pacca flooring of housing was adopted by minimum crossbred cattle owners i.e. 14.15 per cent and 8.50 per cent under improved and recommended categories, respectively and very few crossbred cattle owners i.e. 12.50 and 4.00 per cent cattle owners made provision of pacca drain out under improved and recommended pattern of housing.

It was noticed that maximum cattle owners adopted traditional method of housing pattern as compared to improved one and recommended. Likewise, Sharma (2013) also observed that mostly dairy farmers used shed attached to home and kachha housing pattern. On contrary, Ahirwar *et al.* (2010) reported that 59.33 per cent farmers had mud housing pattern or kaccha housing pattern and 68.00 per cent farmers had pacca hosing pattern.

Further, Quddus (2012) reported that only 10.60 per cent farmers maintained recommended cow-shed, 41.10 per cent made improved and large portion (48.30 per cent) made traditional i.e. unscientific cow-shed due to inability to maintain it. Thus, the results of present study are almost similar with these findings.

#### **Health and sanitation management**

The data regarding health and sanitation adopted by the crossbred cattle owners are given in table 3. It is seen from the data that all the crossbred cattle owners were careful in maintaining the highest standard of sanitation (100%) pertaining to washing of udder before milking, cleaning of milking utensils.

So far as maintaining the health of crossbred cattles is concerned, grooming of crossbred cattles was adopted by 64.00% crossbred cattle owners followed by washing by 55.00% crossbred cattle owners. However, 97.00% cattle owners preferred the practice of vaccination.

Bashir and Kumar (2013) observed that the cent per cent farmers were regularly using the practices like cleaning of utensils and washing of udder before milking. The results of the present study are almost in line with these results. Most of the crossbred cattle owners followed the practices like grooming and washing of crossbred cattle regularly (64.00 per cent and 55.00 per cent respectively).

#### **Breeding management**

The data regarding breeding methods adopted by the crossbred cattle owners are given in table 4.

So far breeding method was concerned 94.50 per cent crossbred cattle owners adopted the artificial insemination (AI). About 5.50 per cent owners adopted natural service method. The maximum crossbred cattle owners were aware the AI in crossbred cattle.

Quddus (2013) reported that most of the farmers had adopted Artificial insemination in crossbred cattle. The present study also indicated similar trend.

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