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Economic Analysis of Constraints Faced in Adoption on Sample Dairy Farms in Bikaner District of Rajasthan

Raju Kumawat ^a, N.K. Singh ^o & Chiranjee Lal Meena ^e

Abstract- This study has evaluated the trends in investment, feeding and milk supply pattern on sample Dairy farms in Bikaner district of Rajasthan- the Arid zone (a typically Desert area). This study is based on the primary data which collected through personal interview method on pre-structured and pretested schedule for the selection on dairy farms, a complete list of all dairy farms operating in Bikaner was obtained and five dairy farms having herd size of more than 20 milch animals were selected randomly for the year 2010-11. The data were analyzed by using various statistical measures like averages, ratios and percentage etc. to arrive the conclusions. Most of the dairy owners were facing the constraints for the lack of management practices adoption were non availability of green fodder, inadequate quantity, high cost of feed and fodder, dry fodder, salt and watering lack of space in Dairy farms, lack of awareness, Most of the dairy owners were practicing scientific management practices ie. Feeding of green fodder, cleaning of animals and animal shed and health practices, deworming and treatment were adopting fully and totting, dehorning, hoof treaming, artificial insemination and vaccination practice etc.

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I. INTRODUCTION

ne of the most significant changes in India's agricultural economy over the past three and half decades has been the rising contribution of livestock sector in the agricultural gross domestic product (Ag.GDP). Between 1970 and 2008, the share of livestock in Ag GDP has risen from 17 per cent to 29 per cent. Dairying accounts for more than two-third of the live stock output and is largely responsible for the rising importance of the livestock sector in the country. India has emerged as the world's largest milk producer and milk producing continues to grow at a fairly high rate.

The Indian dairy cooperative system is one of the biggest in the world consisting of more than 74,000 primary dairy societies with a membership of above 10 million milk producers and providing a reliable marketing service to all milk producers irrespective of their class, caste, economy of scale through the country. It also provides basic dairy extension services such as Supply of cattles feed, fodder seed, animal health services, artificial insemination for both cattle and buffaloes to the members of dairy cooperative societies (*Sasikumar, 1998*).

Livestock forms an integral part of rural India. Farmers not only produce food grains but also manage Livestock. Farmer's income, agriculture and rural economy are heavily dependent on livestock. Infact livestock is a major instrument of production of small farmers. India has the largest cattle population in the world. Almost every rural household in India, whether landed or landless, owns livestock. The livestock population of India is around 535 million comprising of 199 million cattle, 105 million buffaloes, 140 million goats, 71 million sheep and 11 million pigs and ranks first in buffalo while second in cattle and goat population [11]. Of the total livestock in the country, around38.2% are cattle, 20.2% are buffaloes, 12.75 are sheep, 25.6% are goats and only 2.8% are pigs. India has a large genetic diversity of livestock containing 26 breeds of cattles, 8 breeds of buffaloes, 40 breeds of sheep, 20 breeds of goats and 7 breeds of camels. The country has 13 percent of world's cattle population and 57% of world's buffalo population. The milk production in the country is 112 million tonnes mainly being contributed by199 million cattle and 105 million buffaloes. However, average milk yield at 300 Kg per lactation is bysmally low. The per capita availability of milk in our country is 252g/day. The biggest threat is the milk productivity. Despite having the world's largest population the milk productivity per animal comes to 987 Kg/vear whereas worldwide average productivity is 2200 Kg per animal per year [12]. The gradual breed deterioration generally occurs from negligence over centuries and consequent rise in the population of nondescript cows (80 %) and buffaloes (50%) along with the chronic shortage of feed and fodder coupled with their nutritive values and low fertility of our dairy animals has resulted in the low productivity [9].

Indian Agriculture has been the main stay of Indian economy as 64 per cent of the population depends on it. This sector plays a crucial role in the economic development of the country. At present Agriculture and allied sector contribute nearly 14.6 per cent of country's GDP at 1999-00 prices. Dairying in India occupies a prominent place in rural life and

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provides not only subsidiary occupation and nutritional standards but is also a source of organic manures and draught power. Livestock sector contributes about 4.0 per cent of the total GDP and 23 per cent of the agricultural GDP in the year 2008-09. Milk is an important commodity not only as a source of dairy industrial raw material but also a nutritive food for the people. Milk has been considered nearly a complete food for the infants and growing children. In the year 2009 the country projected human population was 1145 million while milk production was 108.5 Mt making a per capita availability of 258 g per day against 265 g per day per capita recommended by World Health Organization (WHO).

The input–output relationship in milk production has been studied and the compared comprising cost of milk production is fairly well established. These components are feed, labour, capital, cost of animals, and cost of technical input.

India is the 'Oyster' of the global dairy industry. As India enters an era of economic reforms in general and agriculture particularly the livestock sector is positioned to be a major growth area. The fact that dairying could play a more constructive role in promoting rural welfare and reducing poverty is increasingly being recognized, e.g., milk production alone involves more than 70 million producers, each raising one or two cows/ Buffaloes. Cattle also serve as an insurance cover for the poor households, because they can be sold during times of distress. The need for food items especially for milk and product in India is increasing rapidly due to several factors like increasing population, urbanization, income levels, awareness about nutritive value and also the changes in tastes and preferences. The World Bank study has projected the demand for milk in India at 350 million tones by 2020. It has been observed in the FAO Evaluation Committee report that dairy development in India offers a unique advantage over industrialization or crop husbandry development. This premise is based on the spread effect of dairy development, which is more evenly distributed as compared to the other two alternatives because it specially benefits the weaker sections. Most of the cultivating households, irrespective of the size of their land holding, own their milch animals. Cattle rearing continue to be an integral part of Indian agricultural scene. Milk production in the country was stagnant during the 1950s and 1960s; annual production growth was negative in many years. The annual compound growth rate in milk production during the first decade after independence was about 1.64 per cent, during the 1960s, this growth rate declined to 1.15 per cent. During the late 1960s, the Govt. of India initiated major policy changes in the dairy sector to achieve self- sufficiency in milk production. Producing milk in rural areas through producer cooperatives and moving processed milk to urban demand centers

become the cornerstone of the government dairy development policy. This policy initiative gave a boost to dairy development and initiated the process of establishing the much-needed linkages between rural producers and urban consumers.

In global context, the performance of the Indian dairy sector appears impressive in term of livestock population and total milk production but extremely poor in term of productivity. The average milk productivity per year per cow increased from 731 kg in 1989-91 to about 1,044.10 kg in 1999. Although average annual milk production per animal has improved substantially, it is far below the world average (2071 kg per year) and that of countries such as Israel (8785 kg), the United States (8,043 kg) and Denmark (6565kg). The available data on milk yield indicate that average productivity went up substantially in the case of cows during the 1970s and 1980s. There is an increase in the yield of buffaloes also, but it is less sharp than that of cows. A key factor accounting for the sharper increase in cow milk yield is the increasing proportion of crossbred cows.

As in milk production and availability, there are wide inter-state variations in milk yields. In general, buffaloes have higher yields than indigenous cows, but crossbred cows are more productive than either indigenous cows or buffaloes. In 2000-01, the average productivity of local cows is highest in Haryana. The Indian dairy industry is poised for dramatic growth in the coming decades. The population growth, urbanization, income growth, high income elasticity of demand and changes in food habits that fuelled the increase in milk consumption are expected to continue well into the new millennium, creating a veritable livestock revolution, environmental sustainability, public health and ethical concerns about the treatment of animals.

Indian Arid zone, where livestock rearing is generally main occupation of rural masses, consists of 12 per cent of country's geographical area and 61 per cent of India's arid zone is Rajasthan. Climate of this zone is not suitable for crop rising. Annual rainfall here is below 300 mm per year, that too irregular during monsoon season, which often leads to wide spread drought conditions. The milk production is influenced to a great extent by the feeding pattern, the quality of feed and the ingredients in the feed. The feeds and fodder accounts for 50 to 75 per cent of the total cost depending upon the condition under which the milch animals are kept for milk production. Feed consists of green fodder, including pasture grass and tree lopping, dry fodder, concentrates and balanced cattle feed. During the 1950s and 1960s, India was one of the largest importers of dairy products, importing over 40 per cent of milk solids in dairy industry. The commercial import of milk powder reached its peak at about 53 thousand tonnes in 1963-64 (Kannitkar, 1999). This caused alarm to policy makers and a decision was made to achieve self-sufficiency in milk production. The

major step forward, came in mid-sixties with the establishment of the National Dairy Development Board (NDDB) to see over dairy development in the country. The Operation Flood Program, one of the world's largest and most successful dairy development programmers, was launched in 1970. Its main thrust was to organize farmers' cooperatives in rural areas and link them with urban consumers. Operation Flood has led to the modernization of India's dairy sector and has created a strong network for procurement, processing and distribution of milk by the cooperative sector. In 1989, the Government of India launched the Technology Mission on Dairy Development (TMDD) program to support and supplement the efforts of Operation Flood and to enhance rural employment opportunities and income generation through dairying.

There are large inter-regional and inter-state variations in milk production as well as per capita availability in India. About two-third of national milk production comes from Utter Pradesh, Punjab, Rajasthan, Madhya Pradesh, Maharashtra, Gujarat, Andhra Pradesh and Haryana. However, there have been some shifts in milk production share of different states. In 2007-08, U.P. was the largest milk producer in the country with about 18.8 Mt of milk, followed by Rajasthan (9.95 Mt), Punjab (9.3 Mt), M.P. (6.1 Mt), Maharashtra (6.0 Mt) and Gujarat (5.6 Mt). Major milk producing regions in country have good resource endowment and infrastructure. The eastern region is lagging behind in term of dairy development. The average per capita availability of milk during 2007-08 was highest in Punjab (962 g per day), followed by Haryana (632 g per day), Rajasthan (408 g per day). The average per capita consumption of milk and dairy product is lowest in rural areas than in urban areas, even though milk is provide by rural areas. Rajasthan state occupies third rank (9.49 Mt) next only to Uttar Pradesh and Andhra Pradesh in milk production in the country and fourth rank (399 g per day) next only to Punjab, Haryana and Gujarat in per capita per day milk availability in 2008-09. The state has 6.6 per cent of cows and 7.18 per cent of buffaloes of the total in the country and contributes about 9 per cent of the total milk production.

Thus study was undertaken to find out profitability of milk production, feeding pattern, supply pattern and adoption of scientific management practices for milch animals in Bikaner district of Rajasthan. The specific objectives of the study are

- 1. To study investment, feeding and milk supply patterns on sample dairy farms.
- 2. To study the cost and returns of milk production on sample farms and,
- 3. To study the extent of adoption of recommended management practices and constraints faced in adoption on sample farms.

II. MATERIAL AND METHODS

Bikaner district of Rajasthan was selected purposively. The paper was exploratory in nature and primarily aims to know the investment, feeding and milk supply patterns, cost and returns of milk production, recommended management practices and constraints. For the selection of dairy farms, a complete list of all dairy farms operating in Bikaner was obtained and five dairy farms having herd size of more than 20 milch animals were selected randomly. The primary data were collected through personal interview method on prestructured and pretested schedules from selected dairy farms for the year 2010-11. The collected data regarding cost components, milk production, consumption, investments and marketed surplus etc. were analyzed by using simple tabular analysis, averages, percentage and ratios. The cost and returns analysis was carried out on the basis of different cost concepts as given below:-

- a) Analysis of data
 - i. Analytical techniques
 - a. Cost and Returns Analysis:

The cost and returns analysis was carried out on the basis of different cost concepts as given below:-

ii. Constraints in adoption recommended management practices:-

The following recommended practices were taken into consideration to find out the adoption in the dairy management. The package of recommended management practices was obtained from College of Veterinary and Animal Sciences, Bikaner.

- a. Feeding:
 - 1. Feeding of concentrate
 - 2. Feeding of dry fodder
 - 3. Feeding of green fodder
 - 4. Feeding of salt

b. Management:

- 1. Cleaning of animals
- 2. Housing facility
- 3. Tattooing (For identification number on the milch animals by using scientific method)
- 4. Dehorning (Removal or check the horns at heirfer stage)
- Hoof trimming (Cutting of hoof for prevention of overgrowth of hoofs. It keep animal fit for walk, prevents weakness of legs)
- c. Breeding:
 - 1. Artificial insemination
- d. Health practices:
 - 1. Vaccination (For protection to animal from diseases and to maintain the health)

- Deworming (Controlling the endo-parasite of animals through oral supply and by mixing in the drinking water).
 Treatments
- e. Milking:
 - 1. Cleaning of animals and milking site
 - 2. Cleaning of milking equipments
 - 3. Method of milking
- f. Marketing of milk:
 - 1. Storage facilities
 - 2. Supply of milk
 - 3. Price of milk
 - 4. Payment received

III. Results and Discussion

In this section socio-economic profile of the sample households has been described. The socioeconomic characters of dairy owners have a profound influence on the decision-making process and profitability of dairy enterprise. The important socioeconomic characters are presented below:

The occupational distribution of sample households is shown in Table 1. It was observed that 50 per cent family members are dependent are not involved in any occupational work. Among other family members those are engaged in occupational work were recorded 50-50 per cent in dairying activities and other work respectively. Therefore, only 25 per cent families were associated with dairying.

a) Occupation

Table 1 shows the total number of cattle maintained, milch animals maintained, Number of milch animals maintained at different dairy farms. The table reveals that out of total 280 animals, 155 were milch and 125 were calves. On an average, each dairy farm had 56 animals. Out of which 31 were milch and 25 were calves. In general, each dairy farm had 55.35 per cent milch animals, with 44.64 per cent calves. The number of cattle maintained by dairy owner's recorder varied from 34 to highest 84, out of 155 total milch animals, there were 8 buffaloes, 30 local, 71 Holstein Friesian and 46 Jersey cows.

On an average, each dairy farm had 31 total milch animals out of which the number of Holstein Friesian cow was found highest (45.80 per cent) in all milch animals. The next more popular cow maintained by dairy owners was Jersey (29.69 per cent). However; Buffalo was maintained by only 5 per cent of dairy owners.

farm family members Dairying Other Total 1. 6 2 1 3 2. 8 2 1 3 3. 5 1 2 4 4. 6 1 1 2 3 5. 7 2 2 4 2 4 Total 32 8 8 16 4 6 1.6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 </th <th>Dairy T</th> <th>rotal no. of</th> <th>M</th> <th>orking</th> <th></th> <th>Dependent</th> <th>ž</th> <th>o. of Anin</th> <th>lals</th> <th>Nur</th> <th>iber of m</th> <th>nilch cows and buffa</th> <th>loes main</th> <th>tained</th>	Dairy T	rotal no. of	M	orking		Dependent	ž	o. of Anin	lals	Nur	iber of m	nilch cows and buffa	loes main	tained
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4. 6 1 1 2 5. 7 2 2 4 Total 32 8 8 16 Average 6.25 1.6 1.6 5.33	ю.	Ð	, -	CI	Ю	0	25	20	45		4	12	0	25
5. 7 2 2 4 Total 32 8 8 16 Average 6.25 1.6 1.6 5.33	4.	9	, -	-	0	4	29	31	60		9	15	00	29
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Average 6.25 1.6 1.6 5.33	Total	32	8	8	16	16	155	125	280	8	30	71	46	155
	Average	6.25	1.6	1.6	5.33	5.33	31	25	56	4	9	14.2	9.2	31
% 100 25 25 50	%	100	25	25	50	50	55.35	44.64	100	5.16	19.35	45.80	29.69	100

Table 1: Occupational distribution of sample house holds & animals maintained at different dairy farms .

In this section socio-economic profile of the sample households has been described. The socioeconomic characters of dairy owners have a profound influence on the decision-making process and profitability of dairy enterprise. The important socioeconomic characters are presented below:

a) Adoption and Constraints

Adoption of scientific practices in rearing of milch animals by different dairy farms.

The rearing and performance of milch animals is directly associated with the various operational methods employed. The scientific practices recommended by experts play an important role in increasing the milk production efficiency of animals. Therefore, to know whether the dairy owners are adopting the recommended scientific practices for their milch animals, the essential information regarding adoption of various scientific practices were collected from the dairy owners and the collected data were analyzed and results are presented in Table 2. It is discussed in detailed under the following sub-heads.

i. Feeding practices

The adoption of scientific feeding practices by dairy owner in respect of concentrate, green fodder and

dry fodder, as observed from the table reveals that no any dairy owners supplied concentrate to their milch animals as per recommended by experts. However, partially adopted the recommended quantity of concentrate was by 60 per cent dairy owners and 40 per cent dairy owners identified as non-adopter of scientific feeding practices recommended for concentrate. In respect of green fodder 100 per cent dairy owners adopting the scientific feeding practices partially due to one or other reasons. In the average most of the dairy owners (100 per cent) in the area were fully adopting the watering practices and fully adopting the feeding practices for dry fodder. Salt supplied by dairy owner to their milch animals were recorded 100 per cent fully adopted.

ii. Management practices

Under the management practices, several scientific practices suggested by veterinary doctors are given in Table 2. In the table it can be seen that cleaning of the animals and animals sheds was the major operation and generally adopted partially by 40 per cent and 70 per cent dairy owners.

S No	Scientific practices	Fully adopted	Partially adopted	Not adopted
<u>- 3. NO.</u>		Fully adopted	Farlially auopleu	Nol-adopted
1.			<u> </u>	40
	a. Concentrates	-	60	40
	b. Dry fodder	100	-	-
	c. Green fodder	-	100	-
	d. Salt	100	-	-
	e. Watering	100		
2.	Management			
	a. Cleaning of animals	60	40	-
	b. Cleaning of animal shed	30	70	-
	c. Housing facilities	-	70	30
	d. Tattooing	-	-	100
	e. Dehorning	-	-	100
	f Hoof trimming	-	-	100
3	Breeding			100
0.	a Artificial insemination	_	_	100
٨	Hoalth practicos			100
4.	Necesiation		40	60
	a. Vaccillation	-	40	00
	D. Dewaining	80	20	-
_	c. Treatments	40	60	-
5.	Milking			
	a. Cleaning of milch animals and milking site	45	55	-
	before milking			
	b. Cleaning of milking equipments	80	20	-
			(F	Percentage)

Table 2 : Adoption of recommended management practices by different dairy farms.

* Fully adopted: - Recommended practices adopted more than 75 percent by dairy owners.

* Partially adopted: - Recommended practices adopted up to 75 percent by dairy owners.

* Not adopted: - Recommended practices not adopted by any dairy farm.

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Fully adopted practices were recorded on any dairy farms 60 and 30 per cent in these two management practices. In respect of housing for milch animals, it was found that all dairy owners not having the housing facilities for their milch animals as per recommended by veterinarian only 70 per cent adopted partially and 30 per cent was not adopted. Further, the recommended tattooing practice was taking by 100 per cent dairy owners not adopted the recommended practice. Dehorning and hoof trimming were not adopted by any dairy owners.

iii. Breeding practices

During the investigation, it was noticed that all dairy owners were more confident on natural breeding. Thus artificial breeding practices were not taken regularly by any dairy farms. However, when they feel necessary for individual milch animal they taken to their animal for artificial insemination in the centre where this facility available.

iv. Health Practices

In respect of health care, the vaccination, deworming and treatments are the most important operational activities as recommended by specialist for keeping the animals healthy and in better performance. It can be observed from the table 4.25 that the deworming was the major health care activity and adopted fully by 80 per cent dairy owners in the area and only 20 per cent dairy owners adopted this management practice partially. In other health care practices treatment of milch animals was exercised by all dairy owners in fully (40 per cent) and partially (60 per cent).

Vaccination in milch animals was not a common practice as it was partially adopted only by 40 per cent dairy owners and 60 per cent dairy owners are not conscious about Vaccination to their milch animals.

v. Milking

Cleaning of milch animals and cleaning site where milking is taking place was partially adopted 55 per cent and 45 per cent fully adopted by all dairy owners dairy owner as recommended by experts. Cleaning of milking equipments were found common in practice before milking of milk 80 per cent dairy owners cleaning their milking equipment fully and 20 per cent partially as recommend by experts.

b) Constraint in adoption of Scientific practices by dairy farms

It was observed that number of problems is faced by dairy owners, regarding maintenance of their milch animals. Some important problems generally facing the dairy owners are related to the inadequate feeding, health care and management practices. These problems are directly associated with the performance of the milch animals. Due to various reasons, dairy owners could not maintain their milch animal as per recommended scientific practices. The reasons which are creating there problem in adopting the scientific practices are considered as constraints and the major constraints are presented in Table 3 and discussed below:

Table 3 : Constraints in adoption of recommended management practices by dairy owners.

S. No.	Constraints	Percentage
1	Feeding of concentrates	~
	1. Feed cost is very high	60
	2. Not aware about recommended quantity	40
2	Feeding of green fodder	
	1. Not available sufficiently in the area for purchasing	100
3	Management practices	
	A. Housing facilities	
	1. Lack of sufficient space	60
	Not aware about recommended practices	40
	B. Dehorning	
	 Not aware about scientific methods 	80
	2. Proper equipments and chemicals are not available	20
	C. Tattooing	
	 Not much aware about these practices 	
	2. Don't feel necessary	20
	D. Hoof trimming	80
	 Lack of awareness and don't feel necessary 	100
4	Artificial Breeding	
	1. More confident in natural breeding	20
	2. Method is complicated	80
5	Health practices like Vaccination, Deworming and Treatments	
	1. Lack of facilities	
	2. Lack of awareness	60
		40

i. Feeding of concentrates

It was observed that 100 per cent dairy owners are facing the problems related the inadequate supply of concentrate against the quantity recommended by specialist. Among these dairy owner, 60 per cent dairy owners were unable to supply the adequate concentrates quantity to their milch animals due to higher concentrates cost and 40 per cent dairy owners not given importance about recommended quantity of concentrates to be supplied to their milch animals.

ii. Feeding of green fodder

During the collection of information from sample dairy owners regarding feeding of green fodder, it was noticed that, the supplying of green fodder to the milch animals was very less in quantity especially in summer season due to one or another reasons. The major constraints was observed that no sufficient quantity of green fodder available in the area for purchasing as per dairy owners requirement and 100 per cent dairy owners were facing this problem.

c) Management practices

i. Housing facilities

Sufficient space and other housing facilities playing the important role in maintaining the health and production efficiency of milch animals but due to some constraints, dairy owners were unable in adopting the housing facilities to their milch animals as per recommended by experts. The majority of the dairy owners were having the constraints of insufficient space in their dairy farms as per required for per milch animals. However, some of the dairy owners not given the importance of recommended housing facilities.

ii. Dehorning

Dehorning of milch animals was not in a common practice in the dairy farms due to two reasons. Firstly, due to lack of awareness about scientific method of deworming and secondly, due to lack of availability of proper equipments, chemicals etc. The majority of dairy owners 80 per cent identified as they were not aware about scientific method of dehorning and only 20 per cent dairy owners wants to adopt the dehorning practices but due to lack of proper equipment, chemicals and other required facilities, the dehorning practices was not adopted by dairy owners.

iii. Tattooing

Tattooing practice of the animals was not a common practice on all the dairy farms, 20 per cent dairy owners not much aware about this practice and 80 per cent dairy owners don't feel necessary of this practice.

iv. Hoof trimming

Hoof trimming by scientific methods is one of the important practices for health point of view but this practice was not a common and no any dairy owner was adopting this practice due to lack of awareness and don't feel necessary.

v. Artificial breeding

Regarding the adoption of breeding practices in scientific manner, no any dairy owner was identified as a adopter and the major constraints was observed, that they are more confident in natural breeding and feel complicated of this method. No artificial breeding facilities were available with the dairy owner at their dairy farms.

d) Health practices like Vaccination, Deworming and Treatments

The health practices manly not adopted by dairy owners due to lack of facility and lack of awareness, about 60 per cent dairy owners facing these problems due to lack of facility and 40 per cent due to lack of awareness.

IV. CONCLUSION

The selection of dairy farm was done randomly. As a whole, five dairy farms were selected, having herd size of \geq 20 milch animals.

The study revealed that there was constraints for the lack of management practices adoption were non availability of green fodder inadequate quantity for purchasing, high cost of feed and fodder, lack of insufficient space in dairy farms, lack of awareness, among all dairy owners about scientific management practices and some dairy owners feel not necessary about management practices. Most of the dairy owners were practicing scientific management practices such as feeding of green fodder, cleaning of animals and animal shed and health practices adopted partially and few management practices such as dry fodder, salt and watering, deworming and treatment were adopting fully and totting, dehorning, hoof treaming, artificial insemination and vaccination practice were not adopted by majority of dairy owners.

V. Conclusions

- 1. The results of the study clearly indicated that the highest investment was made on milch animals especially on Holstein Friesian cow by all dairy owners.
- 2. Most of the dairy owners were practicing scientific management practices such as feeding practices, cleaning of animals and animal's sheds, grooming, health practices partially very few management practices such as watering, deworming and treatments were adopting fully by dairy owners. However, some practices like housing facilities, tattooing, dehorning, hoof trimming artificial insemination, were not adopted at any level by dairy owners. The major constraints for lack of practices management adoption were non

availability of green fodder in adequate quantity for purchasing, high feed cost, lack of awareness and not feel necessary, lack of facilities.

VI. Recommendations

- 1. There is need to motivate dairy owners for adoption of scientific management practices in rearing of milch animals for better health and performance.
- 2. In the context of various production traits Holstein Friesian and Jersey cows were more superior than buffalo and local cows. Hence, emphasis should be given towards increasing herd strength with these breeds.
- 3. There is an imperative need to give recommended doses of feed and fodder to increase milk production.
- 4. Looking to the average milk production of cows and buffaloes, it is recommended that better breeding practices should be made available to the milk producers of the study area so that milk yield can be improved.

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