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Case Study

SCIENTIFIC DAIRY FARMING PRACTICES ADOPTED BY DAIRY FARMERS IN WAYANAD DISTRICT OF KERALA

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ABSTRACT
As livestock sector is one of the major contributor of nation's GDP. The production performance of any livestock is based on the practices adopted for rearing it. So, the present study was conducted to study the scientific dairy farming practices adopted by the dairy farmers of wayanad district. 50 respondents were selected at random for the purpose of study and data collection was done through structured interview schedule. Majority of the respondents were from nuclear families with an average of 20-40 years of age and main source of income is from animal husbandry and agriculture. The cattle breeds possessed by farmers are mainly crossbred cattle with average milk yield of 10-15 litres per day. Among the respondents 82 percent are small farmers with 0-5 acres of land, 14 percent are medium farmers with 5-10 acres of land and four are marginal farmers with land up to 25 % and variety of crops and green fodders are grown by these farmers. Scientific practices adopted by the farmers are feeding roughages and concentrate, deworming and vaccination for disease control, artificial insemination for breeding, construction of cattle sheds and dung pits, production of bio gas and common dairy farming technologies.

KEYWORDS: nuclear families, farmers, dairy farming, AI.

INTRODUCTION

The human population is growing rapidly and therefore dairying practices has to be developed and adopted in a scientific manner to get the maximum production potentiality from available resources so as to meet the demands of the increasing population. The livestock sector alone contributes nearly 25.6% of value of output at current prices of total value of output in agriculture, fishing & forestry sector. The overall contribution of livestock sector in total GDP is nearly 4.11% at current prices during 2012-13. The number of milch animals (in-milk and dry) in cows and buffaloes has increased from 111.09 million to 118.59 million, an increase of 6.75% (19th Livestock Census-2012). The milch animal population in Kerala is 676 thousands (Report 2015). Dairying has been identified as one of the most potential and viable occupations for small, marginal farmers and agricultural labourers. In the emerging agriculture scenario, livestock production in general and dairying in particular has a special place as an instrument for enhancing the income of small farmers and reducing unemployment among the landless (Satyavir *et al.*, 2010). The per capita availability of milk in Kerala has declined from 234 g/day in the year 2001-2002 to 203 g/day in the year 2013-2014. The milk production has also declined from 2718 tonnes in the year 2001-2002 to 2711 tonnes in the year 2014-2015 (Report, 2015). This may be due to non-adaptability of scientific dairying practices. Hence, this study is confined to know about what are all the scientific dairy farming practices adopted in wayanad district of Kerala and constraints faced by the farmers in dairying.

MATERIALS & METHODS

Area of study

The present study was conducted in wayanad district of Kerala state of India.

Sampling technique, data collection and analysis

Fifty dairy farmers were selected at random and data was obtained using a structured interview schedule regarding the scientific dairy farming practices adopted by them in their farms. The socio personal and socio economic traits were taken as independent variables for the study purpose. The scientific dairy farming technologies adopted by the farmers was the dependent variable. Feeding roughages and concentrate, deworming and vaccination for disease control, artificial insemination for breeding, construction of cattle sheds and dung pits, production of bio gas and common dairy farming technologies were technologies considered in the present study. The constraints faced by the farmers in dairy farming are obtained through a semi structured interview schedule. The data analysis is done by calculating the frequency and percentages of the farmers who have adopted scientific dairy farming practices in their farms.

RESULTS & DISCUSSION

In the present study 84 percent of the farmers belonged to nuclear families and 16 percent of the farmer's belonged to joint families. The annual household income of farmers is as follows 82 percent earned about 50,000, 16 percent earned in a range of 50,000 – 1, 00,000 and two percent earned around 1, 00,000 – 5, 00,000. The main source of income for 80 percent of the farmers is from agriculture, 14% of farmers from livestock business, four percent from government service and two percent of farmers from private services. The average milk yield per day in the farms is given below in table 1.

TABLE 1: Average milk yield per day in the farms (N=50)

Average milk yield per day (litres)	Frequency	Percentage %
0-5	6	12
5-10	11	22
10-15	33	66

Scientific dairy farming practices adopted by dairy farmers

Improved breeding practices of the farm animals

The results presented in Table 2 highlighted the improved breeding practices adopted by dairy farmers. Among the 50 farmers 92 % of the farmers have adopted artificial insemination technology for upgrading the local cattle in the farm, for increasing the conception rate and to prevent animals from sexually transmitted diseases. The animals are bred after three to four months after calving by 78 % of the farmers and two to three months after by 22 % of the farmers. 82 % of the farmers are getting calf a year through this improved breeding practice with all the animals coming to estrus in time. Ninety percent of the farmers consulted veterinary doctors for Artificial Insemination (A.I) Sathiadhas *et al.* (2003) reported in their study that 83.33 % of respondents adopted the improved breeding practices using artificial insemination technology.

TABLE 2: Improved breeding practices of the farm animals (N=50)

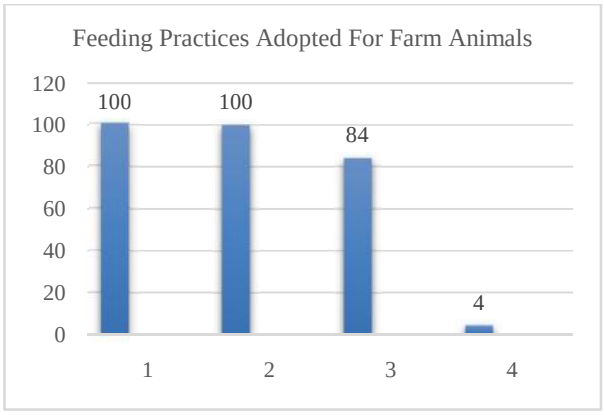
Sl. No.	Breeding practices adopted by the farmers		Frequency	Percentage %
1	Artificial insemination (A.I)		46	92
2	Service period followed	2-3 months interval	11	22
		3-4 months interval	39	78
3	Getting calf a year		41	82
4	Consultation with veterinary doctors for A.I		45	90

Feeding practices adopted for farm animals

Table 3 shows that cent- percent of the farmers possessed cultivated land with crops and fodders grown. Almost all farmers fed their animals with green roughages and the concentrate feeding practice on daily basis was adopted by 84 percent of the farmers. The concentrated feed was supplemented by milma dairy cooperative. Only four percent of the farmers prepared their own feed for feeding animals. Letha (2013) reported that the adoption of green fodder was to some extent and adoption of concentrate was fully with regards to feeding practices in her study.

TABLE 3: Feeding practices adopted for farm animals (N=50)

Sl. No.	Feeding practices adopted	Frequency	Percentage %
1	Cultivated land with crops and fodders	50	100
2	Feeding of green roughages	50	100
3	Feeding of concentrates	42	84
4	Preparation of own feed for feeding animals	2	4



Health care practices

The health care practices adopted by dairy farmers are tabulated in table 4. Cent percent of the dairy farmers followed proper deworming schedule for animals in order to overcome the parasitic infestations to the animals. Isolation of sick animals from the herd was practiced by every farmer. Vaccination of animals against lethal diseases such as Foot and Mouth Disease (FMD), Black Quarter (BQ), Hemmoraghic Septicemia (HS) etc. was done in order to prevent the animals. Animals were vaccinated against FMD by all farmers whereas vaccination with respect to HS and BQ was to a lesser extent. Treatment of sick animals from veterinary doctors is adopted by 88 percent of farmers. The above findings are in line with Mali *et al*. (2014).

TABLE 4: Health care practices adopted for farm animals (N=50)

Sl. No.	Health care practices		Frequency	Percentage %
1	Deworming schedule		50	100
2	Isolation of sick animals		50	100
3	Vaccination of animals	FMD	50	100
		BQ	13	26
		HS	23	46
4	Treatment of sick animals from veterinary doctors		44	88

Management practices adopted in the farm

It is observed that in 64 % of the households the farm management activities including cleaning of sheds, animals, milking and feeding of animals etc. are undertaken by women, in 22 % of the household the farm management activities are undertaken by men and in 14 percent of households both men and women are involved. With regards to housing of animals 78 percent of the farmers had built pukka sheds for animals and 22 % of the farmers had kutcha sheds for animals. The farmer's clean animal shed regularly and provide clean and potable drinking water to animals. 82 % of the sheds had floors made of concrete and 18 percent made of mud. Waste management practices were followed by 68 percent of the farmers with specially constructed pukka dung pits. Biogas production practices were adopted by 62 percent of the farmers in that 56% of farmers used biogas for household purpose and 6 percent of farmers used to sell in the local market. The results of management practices adopted in the farm are listed below in table 5.

TABLE 5: Management practices adopted in farm (N=50)

Sl. No.	Management practices		Frequency	Percentage %
1	Person working in the farm	Men	11	22
		Women	32	64
		Both	7	14
2	Housing of animals	Kutcha	11	22
		Pukka	39	78
3	Type of flooring in animal shed	Concrete	41	82
		Mud	9	18
4	Cleaning of sheds regularly		50	100
5	Providing clean and potable drinking water to animals		50	100
	Waste management practices adopted in the farm			
1	Dung pit availability for waste management		34	68
2	Biogas production through waste management		31	62
	Utilisation of biogas	Household purpose	28	56
		Sale purpose	3	6

Marketing practices adopted by the farmers

Milk produced in the farm is marketed to milma cooperative by 92 percent of the farmers and eight percent of farmers marketed in local market. Seventy two percent of farmers purchase animals with veterinary doctor's consultation from reliable sources and the male calves born are sold in the market at reliable price. The data regarding marketing practices is given below in table 6.

TABLE 6: Marketing practices adopted by the farmers (N=50)

Sl. No.	Marketing practices		Frequency	Percentage %
1	Marketing of milk	Milma cooperative	46	92
		Local market	4	8
2	Purchasing of animals from reliable sources with veterinary doctors consultation		38	72
3	Sale of male calves		50	100

Constraints faced by the dairy farmers

Though the farming practices adopted by farmers are scientific, farmers faced some of the constraints. Majority of the farmers expressed that the price they get for the sale of milk was low and mastitis outbreak was frequent which decreases the production ability of the animals. This may be due to many of the farmers did not adopt teat dipping before and after milking of animals. Another major constraint faced by the farmers was frequent disease outbreak and this is probably due to most of farmers did not vaccinate their animals and some of them live in remote places where the veterinary aid facility is difficult to cover such locations. Rest of the farmers is satisfied with the present farming practices.

CONCLUSION

In order to increase the farmer's income and to improve the yield of the farm more and more scientific dairy farming practices need to be adopted. This can be done by attending trainings, workshops, field demonstrations, study tours conducted by government of India and non-government organizations. Scientific methods such as teat dipping before and after milking has to be implemented in order prevent teat and udder related infections and many more has to be implemented in order to raise the production of the farm. The study analysed that the management practices including waste management adopted by the farmers are very poor when compared to all other practices adopted. So it is recommended to improve the farming practices with respect to management followed by feeding, health care, marketing and breeding practices. So, the veterinary doctors, extension agents, dairy cooperatives working in the study area may give more emphasis on animal management practices by advising the farmers on the improved management practices that need to be adopted and which are presently adopted how to implement and perform it in a better way.

REFERENCES

19th Livestock Census (2012) Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, GOI.

Satyavir Singh., Ram Kumar. and Meena, B.S. (2010) Adoption Level of Scientific Dairy Farming Practices by Dairy Farmers of Haryana. *Indian Res. J. Ext. Edu*. **10**(3).

Sathiadas, R., Noble, D., Sheela Immanuel, Jayan, K.N. and Sindhu Sadanandan (2003) Adoption level of scientific dairy farming practices by IVLP farmers in the coastal agro ecosystem of Kerala. *Indian J. Soc. Res.*, **44**(3): 243-250.

Letha Devi, G. (2013) Adoption of Dairy Farming Technologies by Livestock Farmers. *Indian Res. J. Ext. Edu*. **13**(2): 57-61.

Mali, K.N., Belli, R.B. and Guledagudda, S.S. (2014) A study on knowledge and adoption of dairy farmers about improved dairy management practices. *Agric. Update*, **9**(3): 391-395.