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Extent of adoption of improved dairy management practices by the farmers of Yadgir district of Kalyana Karnataka region

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Abstract

The study was conducted to know the extent of adoption of improved dairy management practices of farmers of Yadgir district of Kalyana Karnataka region during the year 2019-2020. The major findings revealed that majority of the respondents (48.00 %) belonged to medium adoption category and 42 per cent of respondents were belonged to low adoption category. While; only 10 per cent of respondents were belonged to high adoption category. Regarding breeding, health, feeding and other management practices, majority of the farmers regularly adapted the practices like cleaning of animal shed (94.00 %) followed by feeding colostrums to newly born calf within half an hour of birth (72.00%), full hand method of milking (67.00 %), feeding colostrums to newly born calves at the rate of 10% of body weight for minimum 5 days (63.00%), providing clean drinking water to animals (48.00%), vaccination against contagious diseases and hay making (42.00%) equally. With respect to non adoption of practices, majority of the farmers were never adopted the practices like silage making (98.00%), calf dehorning (94.00%) maintaining of different records (90.00%), isolation of sick animals (88.00%), head to head / tail to tail system of housing (86.00%), construction of floor in shed and disinfection of novel cord (84.00%) equally, isolation of advance pregnant animals and burial/incineration method of carcass disposal and quarantine practice (80.00%) equally, fodder utilization methods like chaffing the dry fodder at 2-3 cm in length, salt water, urea and jaggery treatment of dry fodder (73.00%), feeding concentration mixture on the basis of milk production (68.00%), feeding extra concentrate ration to pregnant animals is (66.00%), practicing artificial insemination at proper time of heat (60.00%), growing green fodder and practicing deworming in calves (54.00%), balanced ration feeding (50.00%) and vaccination against the contagious diseases (43.00%).

Keywords: Adoption, improved management practices

1. Introduction

India has largest livestock population in the world. The total livestock population of India makes up a huge numbers and stands first in cattle and buffalo population, second in goats and third in sheep in the world. As per the 20th censuses total cattle population in India is 193.46 million in 2019 (20th Livestock census 2019 all India report). Majority of Indian masses are still dependent on agriculture and a large proportion of them are categorized as marginal (58.10%) farmers (Bansil, 1990) [2]. A good proportion of landless rural population works and produces milk by feeding their animals the by-products of agriculture. With the growing pressure of human population, dairying has to be developed in a scientific manner so as to harness maximum potentiality of milch animals within available land. This has not only placed India on top in the world but it also represents sustained growth in the availability of milk and milk products for the increasing population of the country. Dairy enterprise is one of the important subsidiary occupations and has become an important secondary source of income for millions of rural families. It is also playing significant role in socio-economic uplifting and employment generation particularly in rural sector among the landless small farmers, marginal farmers and farm women group. This sector provides insurance against crop failures and also helps directly in increasing crop production by making available draft power, organic manure and cash income on a regular and day to day basis.

The performance of the dairy animals depends on the adoption of improved animal husbandry practices and information on the extent of adoption of such practices is very much important to increase milk production in the country. Adoption of scientific animal husbandry practices is one of the important aspects, which influence profitable livestock production. Hence, this study was conducted to know the extent of adoption of dairy management practices by the dairy farmers.

2. Methodology

The study was conducted in Yadgir Districts of Kalyana Karnataka region during the year 2019-20 to know the socio-economic characteristics and extent of adoption of improved dairy management practices by the farmers. Out of 3 taluk in the Yadgir district, randomly two taluka Shahapur and Surapur were selected for the study, subsequently five villages from each of the selected talukas were selected randomly and a total of 10 villages were selected for the purpose of study. From each village ten dairy livestock owners were selected randomly having 2 milch animals minimum. Thus, the total sample size was constituted 100 dairy livestock owners for present study.

Ex-post facto design was employed for conducting the study. Data was collected by using a detailed interview schedule employing personal interview method. In the light of the objectives set for the study, the variables viz., adoption of improved dairy management practices were the main items of investigation. To measure level of adoption of important management practices were listed and responses for the adoption of each practice were obtained. A numerical score of 2 was assigned for regular adoption, while a score 1 was assigned for sometimes adoption and 0 was assigned for never adoption. Scores of all identified practices were summed up. This sum total was indicative of adoption level of that particular individual respondent. The maximum and minimum adoption score that could be obtained by individual was 72 and 0 for dairy practices. The selected farmers were interviewed and the desired information was collected with the help of pre-designed and pre-tested questionnaire. The gathered information was analyzed by using appropriate statistical tools like frequency, percentage, mean, standard deviation etc.

3. Results and Discussion

3.1 Overall adoption levels of improved dairy management practices by farmers

Adoption is a decision to continue full use of an innovation. With a view to find out the level of adoption of dairy management practices study was conducted. The data in this regard are presented in table 1. It is clear from Table 1 that, majority of the farmers (48.00 %) belonged to medium adoption category with respect to overall dairy management practices. Whereas 42.00 per cent of farmers were belonged to low adoption category and only 10.00 per cent of farmers were belonged to high adoption category. Farmers had very

low adoption rate of management practices so there is need for capacity building among farmers so that they easily adopt good and beneficiary practices. The milk producers are required to increase their knowledge about improved animal husbandry practices for higher adoption of practices. Hence, it is suggested that frequent training should be organized on need based aspects Veeranna & Singh (2004)^[9] and Rahman & Gupta (2015)^[7].

Table 1: Overall adoption level of dairy management practices by the farmers. (n=100)

S. No.	Categories	Frequency	Per cent
1.	Low (<21.45)	42	42
2.	Medium(21.45-37)	48	48
3.	High (>37)	10	10
	Total	100	100.0
		SD=10.37	Mean=26.63

4. Practices wise extent of adoption improved dairy management practices by dairy farmers

The data pertaining to practices wise extent of adoption of dairy management practices by the respondents were collected. The information regarding these aspects is given in Tables 2 to 5.

4.1 Extent of adaption of breeding management practices by the farmers

The data with regard to adaption of breeding management practices by the farmers are presented in Table 2. It is noticed from Table 2 that in case of regular adoption of breeding practices, 32.00 percent of the farmers regularly practiced pregnancy diagnosis, followed by only 22.00 percent of the farmers were regularly keep watch on estrous cycle and heat signs of cow/buffalo and practiced detection of heat in animals equally. While, 19.00 and 18.00 percent were regularly practiced artificial insemination at proper time of heat and followed appropriate time for mating respectively. This may be due to the fact that most of the dairy livestock owners had long experience of cattle rearing and they closely observed the heat symptoms of cattle. While, in case of some responses given by respondents, half of the respondents (50.00 %) sometimes keep watch on estrous cycle and heat symptoms of cow/buffalo and practiced detection of heat in animals followed by 46.00 per cent of them were sometimes practiced pregnancy diagnosis by expert and followed appropriate time for mating (32.00 %).

With respect to non adoption, majority of the farmers never adopted practices like artificial insemination at proper time of heat (60.00 %), followed by never practiced AI/natural service within 12-14 hours after onset of estrous and appropriate time for mating (35.00 %). This might be due to the fact that lack of veterinary hospitals in village; they did not know the advantage of A.I., importance of pregnancy diagnosis, low education level of farmers and lack of awareness. These might be the possible reasons for not practicing pregnancy diagnosis by the dairy farmers.

Table 2: Extent of adoption of breeding management practices by farmers, (n=100)

S. No	Name of Practice	Adoption level		
		Regular (Per cent)	Sometime (Per cent)	Never (Per cent)
1.	Keeping watch on estrous cycle and heat symptoms of cow/buffalo	22	51	27
2.	Practicing A.I. at proper time of heat	18	22	60
3.	Practicing pregnancy diagnosis by expert	32	50	18
4.	Practicing AI/natural service within 12-14 hours after onset of estrous	16	32	52
5.	Detection of heat in animals	22	50	28
6.	Appropriate time for mating	19	46	35

4.2 Extent of adaption of feed and fodder management practices

The data with regard to feed and fodder management practices adapted by the dairy farmers are presented in Table 3. It could be seen that majority of the farmers (72.00 %) had regularly fed colostrums to newly born calf within half an hour of birth followed by 63.00 per cent of them regularly fed colostrums to newly born calves at the rate of 10% of body weight for minimum 5 days and making hay equally Meena *et al.* (2012) [4]. While, 43.00 per cent of farmers had some times provided daily requirement of production ration (day/animal) followed by 34.00 per cent were sometimes grown green fodder and 33.00 per cent of them sometimes provided 3-4 times clean drinking water to the animals daily.

With respect to never adoption of practices, majority of the farmers not adopted practices like silage making (98.00%), practicing fodder utilization methods like chaffing the dry fodder at 2-3 cm in length, salt water, urea and jaggery treatment of dry fodder (73.00%) may be due to lack of knowledge about method of silage making and initial high cost of chaff cutter Dubey *et al.* (2013) [4]. Also not feeding concentrate mixture on the basis of milk production (2-4 kg) (68.00%), extra concentrate ration to pregnant animals (66.00%), not growing green fodder (54.00%), clean drinking water to the animals 3-4 times daily (49.00%) and providing balanced ration feeding (43.00 %). This might be due lack of irrigation facilities for growing green fodder. Low level of adoption related to feeding of concentrates was due to high cost.

Table 3: Extent of adoption of feed and fodder management practice, (n=100)

S. No	Name of Practice	Adoption level		
		Regular (Per cent)	Some times (Per cent)	Never (Per cent)
1.	Feeding colostrums to newly born calf within half an hour of birth	72	15	13
2.	Balanced ration feeding	25	32	43
3.	Feeding conc. mixture on the basis of milk Production (2-4 kg)	12	20	68
4.	Feeding extra concentrate ration to pregnant animals	08	26	66
5.	Providing daily requirement of production ration (day/animal) i.e green fodder (30-35 kg) dry fodder (8-10 kg)	29	43	28
6.	Feeding colostrums to newly born calves at the rate of 10% of body weight for minimum 5 days	62	27	11
7.	Growing green fodder(Forage Crops and forage grasses)	12	34	54
8.	Fodder utilization methods: Chaffing the dry fodder at 2-3 cm in length, Salt water, urea and jaggery treatment of dry fodder	15	12	73
9.	Silage making,	2	0	98
10.	Hay making	63	29	08
11.	Providing 3-4 times clean drinking water to the animals daily	18	33	49

4.3 Extent of adaption of health care management practices

The data with respect to the health management practices by the dairy farmers are presented in Table 4. The findings reveal that, among health practices 42.00 per cent of the farmers regularly practiced vaccination against the contagious diseases like HS, BQ & FMD and also control of ticks (Ectoparasites) equally.

With regard to non adoption of health practice, majority of the farmers (88.00 %) never adopted practices like segregating the diseased animals suffering from contagious diseases

(Isolation of sick animals) followed by providing treatment of umbilical cord to new born calf (disinfection of novel cord) (84.00 %), isolation of advance pregnant animals and quarantine practice (80.00 %) equally, practicing of deworming in calves for the prevention of parasitic diseases (54.00 %) and vaccination against the contagious diseases (43.00 %). Low adoption of health care practices may be due to lack of awareness and non availability local healthcare dispensaries, thus majority of dairy livestock owners did not adopt utilization of veterinary health care services regularly Sharma (2011) [8], Devi G. (2013) [3], Akhter *et al.* (2013) [1].

Table 4: Extent of health care management practices by farmers, (n=100)

S. No	Name of Practice	Adoption level		
		Regular (Per cent)	Some times (Per cent)	Never (Per cent)
1.	Practicing vaccination timely against the contagious diseases like HS, BQ & FMD	42	15	43
2.	Segregating the diseased animals suffering from contagious diseases (Isolation of sick animals)	08	04	88
3.	Practicing deworming in calves for the prevention of parasitic diseases	16	31	53
4.	Providing treatment of umbilical cord to new born calf (disinfection of novel cord)	07	09	84
5.	Isolation of advance pregnant animals	19	01	80
6.	Tick control (Ectoparasites)	42	39	19
7.	Daily washing of the animals (Grooming/Bathing of animals)	08	72	20
8.	Quarantine practice	05	15	80

4.4 Miscellaneous animal care management practices

Data related to miscellaneous animal care management practices in Table 5 reveal that, only few practices were regularly adopted by the majority of the farmers like regular cleaning of animal shed (94.00 %) followed by 67.00 per cent regularly practiced full hand method of milking and provided clean drinking water to animals (48.00 %). While, in case of

sometimes response given by farmers, majority of the farmers (82.00 %) were sometimes practiced culling of unproductive animal followed by 59.00 percent sometimes fed green/dry fodders after chaffing, 36.00 per cent of them were sometimes practiced weaning, provided clean drinking water to animals and practiced full hand method of milking (30.00 %) equally.

With respect to non adoption, majority of the farmers never adapted practices like calf dehorning (94.00 %) followed by maintaining of different records (breeding, health, income and expenditure) (90.00 %), head to head / tail to tail system of

housing (86.00 %), construction of floor in shed (84.00 %), burial/incineration method of carcass disposal (80.00 %) and feeding green/dry fodders after chaffing (56.00 %) Pharate *et al.* (2013)^[6].

Table 5: Miscellaneous animal care management practices, (n=100)

S. No	Name of Practice	Adoption level		
		Regular (Per cent)	Some times (Per cent)	Never (Per cent)
1.	Construction of floor in shed	16	00	84
2.	Head to head / tail to tail system of housing	06	08	86
3.	Regular cleaning of animal shed (Removing dung and urine)	94	06	00
4.	Weaning practice	27	59	14
5.	Providing clean drinking water to animals	30	48	12
6.	Feeding green/dry fodders after chaffing	12	36	52
7.	Calf dehorning	06	00	94
8.	Culling of unproductive animal	12	82	06
9.	Adoption of full hand method of milking	67	30	12
10.	Maintaining of different records (breeding, health, income and expenditure)	05	07	90
11.	Burial /incineration method of carcass disposal	08	12	80

5. Conclusion

The study revealed that low to medium level of adoption was found in terms of adapting scientific dairy management practices by the farmers and the farmers have lack of awareness about different scientific practices related to dairy sector. Adoption of scientific animal husbandry practices is one of the important aspects, which influence livestock production and its profitability. Hence, there is an urgent need to sensitize the dairy farmers to the modern technologies and scientific interventions in dairy production and management through conducting trainings and awareness programmes with respect animal health care and management aspect to boost up level of adoption of dairy management practices.

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