

Effect of age and educational level of dairy farmers on knowledge and adoption of dairy farming practices in Kapurthala district of Punjab

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ABSTRACT

The study was conducted on eighty farmers belonging to 5 blocks of Kapurthala district during January to March 2016 in order to assess the effect of age and education level on the knowledge level about dairy farming, source of information acquired and adoption of recommended practices for carrying out different activities of dairy enterprise. The farmers in the age group of 20-30 years were found to be more interested in acquiring trainings, demonstrations and exposure visits and acquired high level of knowledge as compared to the elder group of more than 40 years of age. On the other hand the adoption of various management practices was found to be higher in elder than the young group. The practices found to be negatively correlated with knowledge were animal in heat, feeding of colostrums to newly born calf, record maintaining and dehorning of calf whereas period of insemination, dairy management practices, foot and mouth disease and symptoms of haemorrhagic septicaemia showed a significant positive correlation with the age of the farmers. Practices like animal in heat, feeding newly born calf, colostrums feeding, fodder and concentrate, record maintaining, clean milk production and dehorning of calf were positively correlated with the education level whereas all other practices were found to be negatively correlated. This shows that as the education level went on increasing farmers became reluctant to do field operations. Education level helped in acquiring the knowledge but adoption was found to be less in highly educated persons. The study revealed that in order to make overall development of the dairy farming community it is essential to select the actual beneficiaries.

Keywords: Age; educational level; dairy farmers; knowledge level; adoption of practices

INTRODUCTION

Dairy farming is the main source of livelihood for milk producers majority of whom are either landless or marginal farmers. Punjab is one of the major milk producing state of the country and the per

capita availability of milk in Punjab is 937 g/head/day followed by Haryana (679 g), Rajasthan (538 g), Himachal Pradesh (446 g) and Gujarat (435 g) (Anon 2014) but still dairy farmers are facing problems in rearing of cattle and buffaloes. For making dairying a profitable and sustainable venture

it is important for the dairy farmers to adopt scientific practices that would lead to increased productivity at optimum costs. For this to happen the farmer should be aware of the basic tenets of animal health, breeding and feeding.

Sharma et al (2013) reported that the major technological problems being faced by various categories of dairy farmers were different and thus their training needs were also found to be different. Hence a clear understanding of the situational and psychological realities of the dairy farmers is of paramount importance in formulating need-based and farmer-oriented extension programmes to improve their knowledge and skill in bringing about better productivity of the milch animals. Farmers may not have sufficient knowledge regarding scientific management practices for dairy animals. Therefore formulating a suitable extension strategy to further improve the milk production and knowledge level of dairy farmers about recommended management practices requires a thorough understanding of existing level of knowledge of farmers. Hence the present study was conducted with the objective to assess the effect of age and educational level on knowledge and adoption of various recommended practices by the dairy farmers.

METHODOLOGY

The dairy farmers who acquired training from the Krishi Vigyan Kendra and

started their own dairy enterprise were randomly selected from 5 blocks namely Kapurthala, Sultanpur Lodhi, Phagwara, Nadala and Dhilwan of the district during January to March 2016. Sixteen farmers from each block were selected and thus the total sample size was 80. The knowledge level about dairy farming and source of information acquired by them in carrying out different activities of dairy enterprise were ascertained through an interview schedule comprising socio-economical, educational and technological questions pertaining to breeding, feeding, general management and healthcare practices recommended by Guru Angad Dev Veterinary and Animal Husbandry University, Ludhiana, Punjab.

A questionnaire was developed keeping in view the objectives of the study in which independent variables such as age, education level, landholding and family size were selected. Knowledge level (known, partially known and not known) and adoption level (regular, sometime and never) were recorded by assigning score of 3, 2 and 1 respectively. After conducting the survey the data were analysed using SPSS (Anon 2008) and various statistical values were calculated. The data were classified in various heads based on age of the participants because now a days it is being presumed that youth is reluctant to share the responsibilities of their parents regarding agriculture and allied sectors. Similarly it was also emphasized to know

their participation in various social as well as development programmes initiated by the state or central government. Likewise landholding and education level were considered important factors in knowing adoption level of technologies by the farmers.

RESULTS and DISCUSSIONS

Age of the dairy entrepreneurs and landholding

The data (Table 1) show that 37.5 per cent farmers had landholding between 0.8 to 2 ha whereas 45 per cent farmers possessed more than 2 ha. On the other hand 17.5 per cent were having less than 0.8 ha. Only 20 per cent farmers were in the age group of 20-30 years, 32.5 per cent between 30-40 years and 47.5 per cent above 40 years of age. It was revealed that young ones were not interested in performing various agriculture related activities and still elder (47.5%) were taking care of the land owned by them. The main reason for this situation noticed was very low profitability followed by huge initial investment and highly labour intensive task particularly at small level in the villages.

Types of animals

Farmers were found to keep dairy animals mostly for meeting out their daily milk requirement. The study also revealed that few farmers were interested to go for commercial dairy farming. This might be due

to the fact that there are number of bottlenecks in dairy farming as reported by Sharma (2015). It was observed that population of crossbred cattle and buffalo kept by farmers was same ie 75 per cent of famers each were keeping buffaloes and crossbred cattle whereas 25 per cent did not possess buffaloes and crossbred cattle (Table 2) and were purchasing milk for the home consumption.

Less than 3 buffaloes were possessed by 45, crossbred by 35, more than 3 buffaloes by 30 and crossbred by 40 per cent farmers.

Source of information

The data (Table 3) indicated that dairy farmers (80%) realized more on veterinary doctors posted in the villages than veterinary inspectors (27.5%) and KVK scientists (50%) in getting suggestions at the time when any problem arose at the dairy farm. Similarly they also sought help from fellow farmers (37.5%) relatives (22.5%) and friends (27.5%).

A low percentage of farmers were in regular contact with all these agencies for seeking advice whereas majority did not seek advice if not required. It was also observed that dairy farmers sought information only when required under emergency conditions but very little care was given for management practices as compared to the veterinary practices.

Table 1. Land holding of dairy farmers of different age groups

Land (ha)	Percentage of farmers			Total
	20-30 years	30-40 years	>40 years	
<0.8 (small)	2.5	5	10	17.5
0.8- 2.0 (medium)	10	12.5	15	37.5
>2.0 (large)	7.5	15	22.5	45.0

Table 2. Number of animals kept by dairy farmers

Type of animals	# animals		
	<3	>3	Nil
Local cows	35	5	60
Local buffaloes	45	30	25
Crossbred	35	40	25
Pair of bullocks	15	27.5	57.5
Goats	0	0	100

Table 3. Source of information for dairy farmers

Source	Frequency		
	Once in a month	When problem arises	Never
Family	0	25	75
Friends	2.5	27.5	70
KMF Personnel	0	5	95
KVK Scientists	12.5	50	37.5
Livestock inspectors	2.5	27.5	70
Other entrepreneurs	2.5	37.5	60
Relatives	2.5	22.5	75
Veterinary doctors	12.5	80	7.5

Farmer participation

It was interesting to note that young ones (20-30 years) who were less involved in field activities were found more interested to participate in Krishi Melas, training programmes, demonstrations, field visits

and field days organized by the development departments in comparison to other two age groups (30-40 and >40 years) (Table 4). On the other hand it was found that old age group members were least interested in all extension programmes

Table 4. Participation of dairy farmers in extension programmes

Event	Age group of farmers (years)		
	20-30	30-40	>40
Demonstrations	20	10	5
Field days	10	5	7.5
Field visits	12.5	5	7.5
Krishhi Melas	27.5	20	15
Training programmes	25	20	10

as a result of which productivity as well as profitability of the dairy farming were not found encouraging. The findings show that youngsters did not get motivated to start new enterprises keeping in view the low profitability, more time consuming and heavy investment required in establishing a new dairy farm.

Social participation

In contrast to the participation of younger generation in training activities etc very low percentage of farmers (10%) was found to take part in the activities of Gram Panchayats, self-help groups, Yuvak Mandals, dairy cooperatives and agri-cooperative society. It was also noticed that the farmers in the age group of 30-40 years were reluctant to perform any activity in the social sector programmes which was considered a major issue. This denotes that they were not satisfied with day to day activities being carried out by them at the farms. This group also needed motivation and training to adopt subsidiary occupations in order to increase the farm income. In this category those farmers in the age group of

>40 years were noticed to take part in social activities (Table 5).

Knowledge level

It was observed that knowledge about diseases of animals and their symptoms was comparatively less known than the management practices may be due to the fact that it is a highly technical which involves high educational level. Moreover mere provision of agricultural information to farmers does not guarantee its use. This is because a host of social, economic and psychological factors influences the rate of agricultural information use (Akanke 1999).

This was in contrast to the participation in extension programmes which was more in the youngsters than the elder group. However the participation in various technical and social programmes was found higher for elder group than the young and middle group of dairy farmers. The study revealed that young people were found more interested in acquiring trainings, demonstrations, exposure visits etc and

Table 5. Social participation of dairy farmers

Forum	Age group of farmers (years)		
	20-30	30-40	>40
Cooperative society	10	5	22.5
Dairy cooperative society	5	7.5	15
Gram Panchayat	2.5	0	7.5
Self-help group	0	0	10
Yuvak Mandal	5	0	0

acquiring knowledge also but when the question of its utility comes they were reluctant to adopt it.

To know the knowledge level a set of 16 questions was posed to the participants (Table 6). Most of the farmers either fully or partially knew about a particular technology. Knowledge about animals in heat was known (67.5%) and partially known (25%) to farmers. Likewise the adoption of practices among farmers varied between 65 to 72.5 per cent (Table 6) which clearly showed that it is essential to possess knowledge for its adoption. Similarly practice of feeding fodder and concentrate was known (67.5%) and partially known (20%).

The education level of farmers had no significant ($p < 0.05$) correlation with the acquired knowledge regarding dairy farm practices whereas age was found to be significantly ($p < 0.05$) correlated with knowledge about period of insemination, dairy management practices, foot and mouth disease and symptoms of

haemorrhagic septicaemia. Other parameters of knowledge level were non-significantly correlated with age of the farmers.

Effect of age of the farmers on adoption level

The data (Table 7) reveal that 70 per cent farmers adopted keeping watch on animals' oestrous symptoms and out of this only 12.5 per cent belonged to the age group of 20-30 years, 27.5 per cent to 30-40 years and 30 per cent to more than 40 years of age. Similar was the trend for adoption of artificial insemination at proper time and pregnancy diagnoses. Thus it can be inferred that the adoption level was comparatively less (20-30 year age group) than >40 year age group for all the management practices followed at the dairy farm. Adoption of the various practices such as deworming of calves, watching oestrus symptoms and segregation of diseased animals showed a positive correlation whereas all other practices were found to be negatively correlated with the age of the farmers.

Table 6. Knowledge level of dairy farmers about practices for dairy animals

Parameter	Known	Partially known	Not known	Correlation coefficient (r)	
				Age	Education
Breeding practices					
Animal in heat	67.5	25	7.5	(-) 0.14	0.28
Period of insemination	55	25	20	0.39*	(-) 0.17
Feeding practices					
Feeding new born calf	47.5	42.5	10	0.00	0.13
Feeding of colostrums to newly born calf	82.5	10	7.5	(-) 0.11	0.14
Additional concentrate to animal in pregnancy	60	12.5	27.5	0.12	(-) 0.07
Practice of feeding fodder and concentrate	67.5	20	12.5	0.0	0.20
Management practices					
Record maintaining	60	17.5	22.5	(-) 0.19	0.27
Cleanliness of cattle shed	70	12.5	17.5	0.11	(-) 0.07
Clean milk production	67.5	20	12.5	0.11	0.08
Dairy management practices	15	45	40	0.35*	(-) 0.18
Dehorning of new born calf	75	12.5	12.5	(-) 0.09	0.17
Dry period to be allowed for lactating pregnant animal	82.5	7.5	10.0	0.11	(-) 0.04
Healthcare practices					
Diseases of animals	22.5	47.5	30	0.28	(-) 0.16
Foot and mouth disease	22.5	42.5	35	0.37*	(-) 0.13
Symptoms of haemorrhagic septicaemia	15	30	55	0.39*	(-) 0.01
Time of vaccination	62.5	17.5	20	0.18	(-) 0.03

*Significant at P <0.05

Effect of education on adoption level

In this study the adoption of various practices was found to be higher for high and secondary education level than primary, middle and college level dairy farmers (Table 8).

Milk production record was found to be significantly correlated with the education level whereas practices like deworming in calves, segregation of diseased animals and milking methods were negatively correlated. This shows that as

the education level go on increasing farmers become reluctant to do field operations. Moreover most of the dairy management practices were being carried out by the hired labourers.

CONCLUSION

The study showed that dairy farmers had medium level of knowledge regarding recommended management practices. So there was a lot of scope for increasing the existing level of knowledge

Table 7. Adoption level of various practices by the different age groups of farmers

Practices adopted	Age group of the farmers (years)			Correlation coefficient (r)
	20-30	30-40	>40	
Animal health record	20	17.5	25	(-) 0.12
Deworming of calves	20	27.5	35	0.06
Dehorning of calves	12.5	10	10	(-) 0.24
Expenditure record	15	20	27.5	0.00
Feeding colostrums to newly born calves	22.5	22.5	35	(-) 0.14
Full hand method of milking	15	17.5	25	(-) 0.09
Growing of green fodder	20	22.5	32.5	(-) 0.11
Improved dairy management	0	2.5	15	(-) 0.33*
Keeping watch on oestrous symptoms	12.5	27.5	30	0.10
Maintaining income record	22.5	17.5	20	(-) 0.32*
Milk production record	22.5	27.5	30	(-) 0.27
Practices of AI at proper time	20	22.5	30	(-) 0.12
Pregnancy diagnosis	15	22.5	27.5	(-) 0.06
Providing clean water to animals	25	30	37.5	(-) 0.23
Segregation of diseased animals	7.5	17.5	27.5	0.21
Treating of umbilical cord of newly born calves	17.5	10	12.5	(-) 0.23

*Significant at P <0.05

Table 8. Effect of education level on adoption of different practices by dairy farmers

Practices adopted	Education level					Correlation (r)
	Primary	Middle	High	Secondary	College	
Animal health record	5	7.5	12.5	22.5	15	0.29
Deworming in calves	5	10	12.5	12.5	10	(-) 0.12
Dehorning of calves	2.5	7.5	5	10	7.5	0.07
Expenditure record	2.5	10	20	17.5	15	0.29
Feeding colostrums to newly born calves	2.5	12.5	30	22.5	12.5	0.10
Full hand method of milking	5	5	15	15	12.5	(-) 0.09
Growing of green fodder	2.5	10	22.5	12.5	10	0.04
Improved dairy management	0	5	5	2.5	5	0.15
Keeping watch on oestrous cycle	2.5	7.5	27.5	22.5	10	0.16
Maintaining income record	5	10	15	17.5	15	0.15
Milk production record	2.5	5	27.5	25	15	0.34*
Practices of AI at proper time	2.5	10	22.5	27.5	10	0.20
Pregnancy diagnosis	2.5	5	30	20	5	0.01
Provide clean water to animals	5	10	17.5	27.5	12.5	0.26
Segregation of diseased animals	2.5	5	2.5	10	2.5	(-) 0.16
Treating of umbilical cord of newly born calves	2.5	5	32.5	7.5	5	0.07

*Significant at P <0.05

of dairy farmers about improved animal husbandry practices. More extension programmes were needed to be organized to increase the knowhow of the farmers. It was found that efforts were being made to impart trainings, demonstrations, practical skills etc to the educated young farmers whereas the day to day activities at the dairy farms were being carried out by the hired labour or the elder farmers. This extension strategy needs to be modified to a great extent and at the same time selection of actual beneficiaries is the challenging task before the extension workers.

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