PERCEPTION OF DAIRY FARMERS TOWARDS ATTRIBUTES OF DAIRY INNOVATIONS IN NORTH INDIA

Prakashkumar Rathod and Mahesh Chander

Division of Extension Education

ICAR-Indian Veterinary Research Institute,

Izatnagar-243122, (U.P), India

Received 8-7-2015 ***Accepted 23-11-2015***

Corresponding Author : prakashkumarkr@gmail.com

ABSTRACT

An ex-post-facto exploratory study was carried out in four Indian States with the specific objective to know the perception of dairy farmers towards attributes of five identified dairy innovations of socio-economic importance. Concentrate feeding, artificial insemination (AI), vaccination, clean milk production (CMP) and use of mobiles in dairying were the innovations of the study. It was found that majority of the farmers across all states had medium level of favourable perception for all the dairy innovations. However, proportion of farmers with high level of favourable perception was seen among the farmers of Haryana and Punjab. Highly significant difference ($p< 0.01$) in terms of perception of farmers towards attributes of innovations across the states was observed. This might be due to variations in socio-economic and psychological characteristics of the respondents across the states. The study thus concludes that, attributes of dairy innovations must be duly considered for effective diffusion and adoption leading to improved quality and productivity in Indian dairy sector.

KEY WORDS: Attributes, Dairy innovations, Dairy farmers, Perception, North India

INTRODUCTION

The adoption of dairy innovations in developing countries including India can provide the basis for increased production and income. The diffusion and adoption of innovations or a particular technology depends greatly on factors like attributes of technology, socio-psychological and personal factors associated with the technology consumers, as well as support mechanisms such as communication networks and inputs. In this context, it is imperative to study what makes the process of diffusion and adoption work well in some countries or for some innovations in many countries. However, most of the adoption studies till date have largely focused on mere adoption and diffusion of technologies and not upon various attributes of innovations. With this theoretical background, the present study was carried out with the specific objectives to know the socio-personal, economic and psychological profile of dairy farmers and to note the perception of dairy farmers towards attributes of identified dairy innovations viz. concentrate feeding, AI, vaccination, CMP and use of mobiles in dairying as these five dairy innovations have been identified as the emerging innovations of socio-economic importance in India (Rathod and Chander, 2014).

MATERIALS AND METHODS

A combination of purposive and multi-stage random sampling was followed in the study to select the respondents. Four Agricultural / Veterinary Universities and Institutes, which are at the forefront of research in livestock sector, were selected. The districts in which these Veterinary Universities / Institutes are situated were thus selected for the study (Table 1). Two blocks were selected from each district, and further, three villages from each block were selected making a total of 24 villages. Fifteen farmers having at least two dairy animals were then selected from each village using random and snow ball method making ultimate sample size of 360 farmers in four states of North India. The data from the dairy farmers was collected either at their farm or home using pretested interview

Table 1: Locale of the study

Universities	Districts under study (for dairy farmers)	States	Geographical location
Indian Veterinary Research Institute (IVRI), Izatnagar	Bareilly	Uttar Pradesh (UP)	28.36^0 N 79.41^0 E
G.B. Pant University of Agriculture & Technology (GBPUA&T), Pantnagar	Udham Singh Nagar	Uttarakhand (UK)	28.98^0 N 79.40^0 E
National Dairy Research Institute (NDRI), Karnal	Karnal	Haryana	29.69^0 N 76.98^0 E
Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana	Ludhiana	Punjab	30.91^0 N 75.85^0 E

schedule by personal interview method during the study period of November, 2013 to June, 2014.

To study the attributes of identified dairy innovations under study, scores were assigned as indicated in Table 2. For each innovation under study, the minimum and maximum possible scores achievable were 06 and 18, respectively. The higher the score, more positive/ favourable were the characters of the innovation. The respondents were classified into low, medium and high favourable attribute categories based on mean and standard deviation. The data collected from sample respondents were coded, tabulated, analyzed and presented in the form of tables. The same criteria of mean and standard deviation was also used to categorise the socio-personal, economic and psychological characters of dairy farmers. Further, Chi-square test was applied to compare the perception of dairy farmers in different states using SPSS version 20.0 package. The inferences were drawn in light of the results obtained, keeping in view the objectives laid in the study.

Table 2. Attributes of innovations and their scores

Attributes	Score- 3	Score- 2	Score- 1
Relative advantage	Very advantageous	Advantageous	Not advantageous
Compatibility	Very compatible	Compatible	Not compatible
Simplicity	Very simple	Simple	Complex
Trialability	Very trialable	Trialable	Not trialable
Observability	Very observable	Observable	Not observable
Predictability	Highly predictable	Predictable	Not predictable

RESULTS AND DISCUSSION

Socio-personal, economic and psychological characters of dairy farmers

Table 3 depicts that majority of the dairy farmers in the study area belonged to medium age group and were mostly illiterate followed by education till high school level with agriculture as their main source of livelihood. The study also indicated that, majority of the respondents had medium level of land holding, livestock herd size, family annual income, information seeking, decision making, scientific orientation and economic orientation. The study also revealed that majority of the farmers did not have any social participation. There was highly significant difference among the respondents across the states with regards to all the studied variables except age of the respondents.

Table 3. Socio-personal, economic and psychological characters of dairy farmers (N=360)

Variables	Categories	Frequency (%)	Mean ± S.D	χ^2
Age (In years)	Young	82 (22.78)	48.20 ± 13.65	3.75
	Middle	206(57.22)		
	Old	72 (20.00)		
Education	Illiterate	144(40.00)		45.5**
	Primary	70(19.45)		
	High school	107(29.72)		
	College & above	39(10.83)		
Major occupation	Agri +A H	263 (73.06)		31.8**
	A. H	19 (5.28)		
	Business	23 (6.39)		
	Govt. service	11 (3.05)		
	Labour	43 (11.94)		
	Any other	01 (0.28)		
Land holding	Landless	31 (08.61)	4.83± 5.87	42.2**
	Small	68 (18.89)		
	Medium	226 (62.78)		
	High	35 (09.72)		
Livestock possession (In livestock units)	Low	07 (01.94)	4.59 ± 3.55	25.0**
	Medium	303 (84.17)		
	High	50 (13.89)		
Social participation	Nil	178 (49.44)		63.4**
	One Org.	155 (43.06)		
	Two or more	24 (06.67)		
	Public leader	3 (0.83)		
Information seeking behaviour	Low	69 (19.16)	19.37± 1.92	56.3**
	Medium	237 (65.84)		
	High	54 (15.0)		
Decision making ability	Low	83 (23.06)	21.59± 2.55	18.0**
	Medium	228 (63.33)		
	High	49 (13.61)		
Scientific orientation	Low	73 (20.28)	14.22± 1.73	127.6**
	Medium	197 (54.72)		
	High	90 (25.0)		
Economic orientation	Low	77 (21.39)	12.94± 1.72	83.7**
	Medium	206 (57.22)		
	High	77 (21.39)		

The study reported that across all states, majority of the dairy farmers belonged to medium favorable category followed by high and low favorable categories for concentrate feeding, AI and CMP, vaccination and use of mobiles in dairying. However, percentage of farmers with high level of favourable percepation was considerably high in the states of Haryana and Punjab. It might be due to the fact that the farmers of these states have realized the importance and benefits of using dairy innovations, and hence practiced them in their farms to a greater extent which might be one of the reasons for progressive dairying in these states.

Table 4. Farmers' perception towards attributes of selected dairy innovations (N=360)

Innovations	Categories	States				Pooled (360)	Mean ± S.D	χ^2
		UP (90)	UK (90)	Haryana (90)	Punjab (90)			
Concentrate feed	Low	31 (34.44)	13 (14.44)	05 (5.56)	0 (0)	49 (13.61)	11.11 ± 2.28	77.4**
	Medium	55 (61.12)	70 (77.78)	66 (73.33)	59 (65.56)	250 (69.45)		
	High	4 (4.44)	07 (7.78)	19 (21.11)	31 (34.44)	61 (16.94)		
Artificial insemination	Low	31 (34.44)	19 (21.11)	02 (2.22)	0 (0)	52 (14.44)	12.12 ± 2.38	91.7**
	Medium	56 (62.23)	64 (71.11)	65 (72.22)	54 (60.0)	239 (66.39)		
	High	03 (3.33)	07 (7.78)	23 (25.56)	36 (40.0)	69 (19.17)		
Vaccination	Low	44 (48.89)	30 (3.33)	01 (1.11)	0 (0)	75 (20.83)	13.28 ± 2.06	116.3**
	Medium	45 (50.0)	58 (64.45)	68 (75.56)	69 (76.67)	240 (66.67)		
	High	01 (1.11)	02 (2.22)	21 (23.33)	21 (23.33)	45 (12.5)		
Clean milk Production	Low	23 (25.56)	14 (15.56)	0 (0)	0 (0)	37 (10.28)	9.72 ± 1.79	97.2**
	Medium	65 (72.22)	73 (81.11)	61 (67.78)	54 (60.0)	253 (70.28)		
	High	02 (2.22)	03 (3.33)	29 (32.22)	36 (40.0)	70 (19.44)		
Use of Mobiles	Low	31 (34.44)	19 (21.11)	05 (5.56)	01 (1.11)	56 (15.56)	10.89 ± 2.26	58.4**
	Medium	54 (60.0)	64 (71.11)	67 (74.44)	66 (73.33)	251 (69.72)		
	High	05 (5.56)	07 (7.78)	18 (20.0)	23 (25.56)	53 (14.72)		

(Figures in the parenthesis indicate percentage)

There was a wide variation with regards to attributes of dairy innovations which might be due to variations in socio-economic and psychological characteristics of the respondents. These factors might have contributed for highly significant difference ($p< 0.01$) across the states. In a similar study, Rao *et al.*(1995) reported that rate of adoption was influenced by the farmers' perception about the technology characteristics, while, Dearing (2007) stated that attributes were associated with

particular innovation for diffusion and adoption. In a study of 'T&D pig' adoption in India, Seth *et al.* (2014) revealed that due to desired innovation attributes like relative advantage, observability, cultural compatibility and trialability, there was faster rate of adoption of 'T&D pig'.

CONCLUSION

The study reported that majority of the farmers across all states belonged to medium favorable category of attributes for all the dairy innovations. The study also depicted highly significant difference ($p < 0.01$) across the states which might be due to variations in socio-economic and psychological characteristics of the respondents of different states. The study concluded that, attributes of dairy innovations must be considered on priority basis for effective diffusion and adoption leading to improved quality and productivity in Indian dairy sector.

REFERENCES :

Dearing, J. W. (2007). Measurement of innovation attributes.www.research-practice.org.

Rathod, P. and Chander, M. (2014). In: E. Karamidehkordi (eds), Proceedings of the First International Conference of the Asia and Pacific Islands Rural Advisory Services (APIRAS) and the Fifth Congress of Extension and Education in Agriculture and Natural Resources Management, 2-4 September, 2014, University of Zanjan, Iran. pp-101.

Rao, S. V. N., Rangnekar, D. V., Dey, R. and Van Den Ban, A. W. (1995). Farmers' perception of innovations. Hand book for Straw Feeding System, 107-16.

Seth, P., Chander, M., Rathod, P. and Bardhan, D. (2014). African J. of Agric. Research., **9**(3): 407-

❑