

## **A field study on dairy farmer knowledge in block Khanpur of district Haridwar**

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### **Abstract**

*Farmers understanding about various management practices related to animals play a vital role in viable farming management aspects like green fodder availability, breeding, nutrition, health etc. is directly related to the production and profitability of a dairy business. In view of above present study is emphasised to access the status of knowledge of dairy farmers. The study was conducted in Khanpur Block of district Haridwar, Uttarakhand in the year 2014-15 to discover the extent of scientific livestock rearing understanding among dairy farmers. The study inferred that on an average 54.06, 37.29 and 8.65 percent had low, medium and high level of knowledge regarding different scientific livestock management parameters. Accordingly majority of dairy owners of Khanpur block of the district Haridwar possess low level of knowledge regarding improved animal husbandry practices. So the study suggested that knowledge level of dairy farmers must be needed to improve through multifarious extension approaches.*

**Key Words:** Scientific livestock rearing, knowledge and dairy farmers

### **Introduction**

Haridwar district is known for its holy importance and quality of animal of Uttarakhand, although the livestock component has low share in the economy of state because of livestock rearing in this area is taken up as subsidiary to crop production. The livestock sector 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 national GDP 4.11% at current prices during 2012-13. Khanpur block basically part of tehsil Laksar which is comprises of 53 villages and as per 2012 census the tehsil Laksar having 33041 cattle and 50544 buffalo's population of different breeds. There are 3565 milk societies in Uttarakhand with members 135601 of Anchal dairy cooperatives (Uttarakhand census 2012). In spite of India's rank as the highest producer of milk, the average annual milk yield from bovines is only 1214 kg as against the world average of 2104 kg per lactation (Planning commission, 2012). As a fact the large quantity of milk

is handled by those farmers who are unaware about economic aspects of profitable and viable milk production. Adoption of dairying as commercial enterprise is a prerequisite of sustainable agriculture. However, majority of rural dairy farmers who rear dairy animals do not follow the recommended package of practices of livestock management on the scientific lines. So to sensitize the dairy farmers about the improved scientific technologies in dairy production in order to get maximum, it is necessary to know the existing level of scientific knowledge about livestock rearing among dairy farmers. The present study was undertaken with the objectives to study the knowledge status and socio-economic profile of dairy farmers and their elementary knowledge of scientific and improved animal rearing practices.

### **Materials and Methods**

The present study was conducted in Haridwar district of Uttarakhand in the year 2014-15 where, in general, after crop production, dairy farming is the main component of the existing agriculture production system. Khanpur block was selected among total of six blocks in Haridwar district for the study which is

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mainly known as low land area of the district. Randomly, a total of 120 dairy farmers of 12 villages were selected for the present study. Primary data were obtained by the means of a household survey with the help of a comprehensive questionnaire with co-operation of RAWE (Rural Agricultural Works Experience) personals on age, education, information sources, land holdings, crop irrigation systems, social participation approach, family size, main occupation, number and type of animals rearing, linkages, land distribution under crops, agriculture mechanization system, performance parameters of reared bovines and knowledge level etc. The elementary knowledge of a research innovation is prerequisite for technology adoption. To measure the knowledge level in context of scientific dairy farming practices, a bench marks knowledge survey based scale having component given in different tables was developed. On the basis of observations collected related to calf and heifer rearing knowledge, breeding policy adopted, green fodder production techniques, balance ration formulation, space requirement for animals etc dairy farmers were classified into three groups namely high, medium and low knowledge group.

## Results and Discussion

### *Socio-economic profile of the respondents:*

Majority (41.67%) of livestock farmers belongs to the middle aged group followed by young age group (31.67%) and old aged group (26.67%). These findings are in agreement with reported by, Toppo (2005) Bhatt (2006), Saha et al. (2010), Raval and Chandawat (2011), Sharma et.al.(2012), Kumar et al (2014, 2015) and Sarita (2016). About 51.67 percent of dairy farmers had obtained secondary education whereas 28.33 percent had primary level of education, followed by 15.83 percent who were found to be graduated. Thus 80.00 percent of dairy farmers were having primary and secondary level of education, which might be due to lack of awareness and available educational facility at village level. Similar findings have been reported by Gour (2002), Bhatt (2006), Sen (2007) and Sarita et al (2016).

Majority of respondents used television, news paper and magazines as sources of information regarding improved agricultural practices including animal rearing. Furthermore, it was observed that 10.0, 41.67, 34.17, 10.00, and 4.16 (%) of farmers were landless, marginal, small, medium, and large farmers. Majority (75.84%) of dairy farmers had 0-2 hectare of land holding. The smaller landholding sizes could be

Table 1: Dairy farmers distribution based on their delicate and socio-economic distinctiveness.

Characteristics	Respondent	%age
<b>Age</b>		
Young Age Group (18-38 Years)	38	31.67
Middle Age Group(39-58 Years)	50	41.67
Old Age Group(Above 58 Years)	32	26.66
<b>Education</b>		
Illiterate Group	05	4.17
Primary Education Group	34	28.33
Secondary Education Group	62	51.67
Graduate	19	15.83
<b>Information sources used</b>		
News Paper	108	90.00
Radio	47	39.17
Television	119	99.17
Magazines/Charts	60	50.00
<b>Land Holdings</b>		
Landless	12	10.00
Marginal Farmers (Below 1.0 ha.)	50	41.67
Small Farmers (1.0 -2.0ha)	41	34.17
Medium Farmers (2.0-4.0ha)	12	10.00
Large Farmers (More then 4.0ha)	05	4.16
<b>Crop Irrigation System</b>		
No irrigation Facility	16	13.33
Tube well and Canal	-	-
Canal	-	-
Tube well	104	86.67
<b>Social Participation Approach</b>		
Village level	52	43.33
District Level	50	41.67
State Level	18	15.00
<b>Family Size</b>		
Small Family (Up to 06 Person)	74	61.67
Big Size (More Than 06)	46	38.33
<b>Worth Generator Person in Family</b>		
One member	56	46.67
Two member	48	40.00
More than two member	16	13.33
<b>Occupation</b>		
Agriculture and animal husbandry	50	41.66
Dairy Farming Alone	32	26.67
Agriculture, Dairy and Services	32	26.67
Agriculture, Dairy and Business	06	5.00
<b>Number of Animals</b>		
Two milch animal	26	21.67
Four milch animal	41	34.17
Six milch animal	18	15.00
Eight milch animal	21	17.50
Ten Milch Animals	4	3.33
More than ten milch animals	10	8.33
<b>Type of animals in herd</b>		
Only Cows	18	15.00
Only Buffalo	29	24.17
Both buffalo and Cows	73	60.83
<b>Linkages with Animal Husbandry officials</b>		
Veterinary Officers	50	33.33
LEOs	56	46.67
Para vets	94	78.33
KVK Scientists	59	49.17
Officers of dairy cooperatives	25	20.83
ITK Specialist	09	7.50
Other Extension Workers	44	36.67

Table 2: Land distribution under different agricultural activities

Characteristics	Average Area Distribution (ha)							
	Marginal Farmer		Small Farmer		Medium Farmer		Large Farmer	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Cash crops	0.44	44.00	1.00	50.00	1.76	58.67	2.36	59.00
Grain and Pulse	0.21	21.00	0.24	12.00	0.42	14.00	0.48	12.00
Plantation	0.07	7.00	0.35	17.50	0.40	13.33	0.75	18.75
Fodder crops	0.12	12.00	0.19	9.50	0.25	8.33	0.32	8.00
Vegetable	0.16	16.00	0.22	11.00	0.17	5.67	0.09	2.25

Table 3: Performance of milk producing animals

Parameters	Local Cows		Cross Bred Cows		Buffaloes	
	Frequency	%	Frequency	%	Frequency	%
Calving Interval (In Months)						
12-15 months	13	18.57	45	17.30	29	7.75
16-19 months	18	25.71	80	30.77	93	24.87
20-23 months	24	34.29	90	34.62	118	31.55
> 23 months	15	21.43	45	17.31	134	35.83
Age at First Calving (in Years)						
1.5-3.0 Years	04	5.71	49	18.85	07	1.87
3.0-4.0 Years	19	27.14	51	19.62	96	25.67
4.0-5.0 years	22	31.43	10	3.85	113	30.21
5.0-6.0 years	-	-	-	-	22	5.88
> 6.0 years	-	-	-	-	-	-
Lactation Length						
140-180 days	10	14.29	36	13.85	38	10.16
181-220 days	17	24.29	85	32.69	124	33.16
221-260 days	33	47.14	106	40.77	137	36.63
261-300 days	10	14.29	33	12.69	75	20.05
Parity Order						
One	15	21.42	36	13.85	48	12.83
Two	18	25.71	60	23.08	48	12.83
Three	14	20.00	60	23.08	103	27.54
Four	12	17.14	59	22.69	120	32.09
> Four	11	15.71	45	17.31	55	14.71
Average milk production (lit/day/animal)						
Up to 04 ltr	19	27.14	23	8.85	64	17.11
4.1 to 06 ltr	34	48.57	53	20.38	77	20.59
6.1 to 8.0 ltr	13	18.57	57	21.92	136	36.36
8.1 to 12 ltr	04	5.71	76	29.23	45	12.03
> 12 ltr	-	-	51	19.62	52	13.90

on account of emergence of nuclear families in the village systems. These results were in support of study conducted by Bhatt (2006), Sen (2007), Shreesailaja and Veerabhadraiah (1992), Rathod et al (2012), Kumar et al (2015) and Sarita et al (2016).

Majority of farmers (86.67 percent) had crop irrigation facility with tube wells. About 41.66 percent of dairy farmers were engaged with mixed agriculture and animal rearing practices whereas 26.67 percent

of the respondents had animal rearing as the sole means of livelihood. Similarly 43.33 and 41.67 percent of the respondents actively participated in village and district level agricultural technology transfer programmes organized by different agriculture based departments including animal husbandry, respectively and had membership of various organizations like-Anchal milk cooperative societies, gram panchayat, village cooperative societies and FACs. This finding

Table 4: Distribution of dairy farmer on the basis of scientific dairy farming knowledge:

Characteristics	High		Knowledge Medium		Low	
	Number	%	Number	%	Number	%
Calf Management	06	5.00	52	43.33	62	51.67
Heifers Management	05	4.16	38	31.67	77	64.17
Breeding Management	00	0.00	32	26.67	88	73.33
Feeding Management	14	11.67	49	40.83	57	47.50
Water Management	19	15.83	59	49.17	42	35.00
Cattle shed Management	09	7.50	49	40.83	62	51.67
Health Management	05	4.17	34	28.33	81	67.50
Clean Milk Production	25	20.83	45	37.50	50	41.67

was in agreement with Gour (2002) and Sen (2007) Khokher (2008) but contradictory to those reported by Bhatt (2006).

It was observed that 61.67 percent of dairy farmers had small families with less than six members and 38.33 percent of dairy farmers had large family sizes with more than six members. It was observed that 46.67 percent of families having one worth generator person or earning member. About 40.00 percent with two worth generator person and only 13.33 percent families were there with more than two worth generator persons within the family. These findings are in view of family size contradictory to Sharma et al (2002). Dairy farmers (34.17 percent) had four milch animals followed by 21.67, 17.50, 15.00, 8.33 and 3.33 percent of farmers who reared two, eight, six, more than ten and ten animals, respectively. Majority of dairy farmers (60.83 %) reared both cattle and buffaloes and, 24.17 and 15.00 percent reared only buffaloes and cattle, respectively. These findings were in agreement of Gour (2002) and Kumar et al (2014, 2015) while contradictory to Sharma et al (2002).

It was observed that majority of dairy farmers had contact with the paravets, officers of dairy cooperatives, livestock extension officers and K.V.K scientists for obtaining information regarding animal husbandry practices. Similar findings were reported by Gour (2002), Bhatt (2006) and Sharma et al (2002).

#### *Land distribution under different agricultural activities:*

Majority of dairy farmers (Table 2) of all groups grew cash crops, mainly Sugarcane (44.0-59.0 percent) in their agriculture field. They used sugarcane top (residue) for their livestock feeding purpose during November to April month of the Year. The present study showed that area under sugarcane was higher (58.67-59.00 percent) in case of medium and large

farmers. Land area under plantation mainly poplar (18.75 percent) increased with the large farmer group. The land area under grain and pulse crops was higher (21.0 percent) in case of marginal farmers. Small and marginal farmers was kept more area (9.50 to 12.0 percent) under fodder crops for their livestock, which reflects that small and marginal farmer group were more interested to do dairy farming as viable business. These findings were in agreement of Kumar et al (2014, 2015).

#### *Average performance of dairy animals:*

The results shown in Table 3 reveal that almost half (51.93 %) of crossbreed cattle and two third (67.38 %) of buffaloes were distressed with long calving interval problems, which might be the biggest reason affecting milk production and adoption of commercial dairy farming as business. About 48.57 percent dairy farmers owned local cows with 4.0-6.0 liter milk per day and 27.14 % had animals up to 4.0 liter milk per day. Similarly 29.23 % had cross breed cows producing milk 8.0-12.0 liter per day while only 19.62 % had cross breed cows producing milk more than 12.0 liter per day. On the other hand 36.36 % farmers were keeping buffaloes with 6.0-8.0 liter milk per day followed by 20.59 % with 4.0 to 6.0 liter per day and 13.90 % with more than 12.0 liter per day production of milk. These findings were in agreement of Kumar et.al (2014).

#### *Knowledge of Dairy farmers about scientific livestock rearing practices:*

The data collected for the purpose on colostrums feeding to calf, balance ration to heifers, breeding policy, silage preparation etc. under different characteristics (Table 4) shows that the knowledge level of all the respondent farmers was low to medium in term of recommended package and practices for

viable commercial dairy farming. So that all the areas, related to recommended package and practices were required special attention to give for dairy farming in better ways. These findings are similar to those reported by Saha et al 2010 and Kumar et al (2014) and while contradictory to those reported by Kumar et al (2015).

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