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Assessing Dairy Farmers' Knowledge after Exposure to Clean Milk Production Related Multimedia

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ABSTRACT

The study was conducted from August 2016 to June 2017 in West Bengal. The study was conducted in Nadia and North 24 Parganas districts of West Bengal by drawing a random sample of 120 respondents covering eight villages and four blocks. Milk is highly perishable commodity. Contaminated milk deteriorates quickly and produces diseases if consumed. Therefore, extreme care has to be taken in production, storage and transportation of milk. Data was collected by structured interview schedule. Most of the farmers were having low education status or studied up to lower level and mostly they were from medium to old age group, few farmers were exposed to magazine/bulletin pertaining to clean milk production. All the dairy farmers were having high post test knowledge scores irrespective of their category because of their immediate knowledge gain. Old age group farmers fell in high knowledge retention score category and all the young age group farmers fell in medium knowledge retention score category. Majority of the respondents have not seen any programme on clean milk production. As most of the farmers were having lower level of education, so there was a need to disseminate information through multimedia which could be effective to get desired change irrespective of education status of respondents.

Key words: Dairy, Knowledge, Clean milk production, Multimedia

The projected milk production of India is 200 million tons by 2020 (Anonymous 2015). This represents a steady growth in availability of milk and milk products for the growing population. Dairying has become an important secondary source of income for millions of rural households engaged in agriculture. The success of the dairy industry has resulted from the integrated co-operative system of milk collection, transportation, processing and distribution. To minimize seasonal impact on demand and supply proactive roles from every stakeholder associated with dairy sector are required. "Clean Milk" is generally defined as "milk drawn from the udder of healthy animals, which is collected in clean dry milking pails and free from extraneous matters like dust, dirt, flies, hay, manure etc. Clean milk has a normal composition, possesses a natural milk flavor with low bacterial count and is safe for human consumption" (Sinha 2000).

Milk is highly perishable commodity. Contaminated milk deteriorates quickly and produces diseases if consumed. Therefore, extreme care has to be taken in production, storage and transportation of milk. Clean milk does not mean making the milk free from extraneous matters by passing it through sieve or muslin cloth. It actually means the raw milk that has been produced in the udder of healthy dairy animals, handled under hygienic conditions and contains only allowed quantity of pathogens and chemicals. Keeping in mind hygiene aspect of milk production this study was undertaken to assess the dairy farmers' exposure to different extension aids/tools/methods pertaining to clean milk production and dairy farmers' knowledge after

exposure to clean milk production related multimedia. Land holding is a major constraint for the dairy farmers as this fragmented land holding directly influence the availability of green fodder for the animals. Majority of the farmers are not having knowledge regarding scientific dairy farming practices that is the important point to focus and provide linkages to the farmers on improving knowledge in the scientific dairying.

MATERIALS AND METHODS

The study has been conducted in Nadia and North 24 Parganas districts of the West Bengal. Four blocks has been selected randomly; two from each district; namely Ranaghat 1 and Chakdah from Nadia and Gaighata and Swarupnagar from North 24 Parganas respectively .Two villages have been chosen from each block by random sampling method. So total of eight villages have been selected for the study. From each village fifteen farmers has been selected randomly. Thus a total of 120 farmers from the study area have been selected as respondents. The farmers who were engaging in dairying since last 5 years and having at least few animals are in milk were selected from each village .The data were collected by personal interview method using structured interview schedule. The frequency, percentage, mean and standard deviation were employed to analyze the data.

RESULTS AND DISCUSSION

Exposure of the respondents to different extension aids/tools/methods pertaining to clean milk production

The data presented in (Table 1) indicate that not even a single respondent was exposed to clean milk production related to multimedia. Only 6.66 percent of the farmers read magazine/bulletin regarding clean milk production. Only 3.33 percent of the respondents have listened programme on CMP. Majority of the respondents (97.50%) have not seen any programme on clean milk production. Dhaliwal *et al*. (2011) revealed that videos are an ideal medium to promote motivation, attitudinal change, behaviour reinforcement, community participation and entertainment. 98.34 percent of the respondents have not participated in awareness programme/training regarding clean milk production. Only 10 percent respondents interacted with specialist about clean milk production. Only 4.16 percent of the farmers came across to any literature on clean milk production. Negligible percentage of respondents (1.66 %) had travelled to know about clean milk production. Most (94.17%) of the respondents were not exposed to the concept of clean milk production during kisan/dairy mela. Kumar and Kumar (1992) stated that video with motion pictures and sound have been found effective in stimulating interest of learners, motivating them to learn and also imparting teaching skills.

This suggested that farmers were not exposed to clean milk production related multimedia due to paucity of good quality multimedia. As most of the farmers was thinking multimedia as a source of entertainment only so that there was a need to provide some information on clean milk production through multimedia. As most of the farmers were having low education status or studied up to lower level and mostly they were from medium to old age group, few farmers were exposed to magazine/bulletin pertaining to clean milk production. Radio is not much effective medium for getting information now a day because TV is available as advanced medium for getting information and only limited farmers were using radio. Very few farmers have seen any programme on clean milk production. The reason behind was that, male farmers were devating less time for watching TV as compared to female family members. Most of the farmers not participated in any awareness/training programme as they said that they were not having any information regarding the training centers. Most of the farmers were not interacted with any specialist on clean milk production as number of specialists was scanty and those specialists were also not given any inputs on clean milk production. Few farmers came across to literatures on clean milk production. Most of the farmers not participated in dairy/kisan mela and hence, they were not exposed to the concept of clean milk production, moreover in those dairy/kisan mela also no exposure has been given to farmers about clean milk production.

Table 1 Exposure of the respondents to different extension aids/tools/methods pertaining to clean milk production (n=120)

Items	Yes	No
Exposure to clean milk production related multimedia	0 (0)	120 (100.00)
Read any magazine/bulletin regarding clean milk production	8 (6.66)	112 (93.37)
Listened any programme regarding clean milk production on radio	4 (3.33)	116 (96.67)
Seen any programme regarding clean milk production on TV	3 (2.50)	117 (97.50)
Participated in any awareness programme/ training regarding clean milk production	2 (1.66)	118 (98.34)
Interacted with any specialist about clean milk production	12 (10.00)	108 (90.00)
Come across to any literature on clean milk production	5 (4.16)	115 (95.84)
Travelled to know about clean milk production	2 (1.66)	118 (98.34)
Exposed to the Concept of clean milk production during kisan/ dairy mela	7 (5.83)	113 (94.17)

Figures in parenthesis indicate percentage

Distribution of different categories of respondents according to post-test knowledge score

The data presented in (Table 2) indicate that all age group respondents fell in high post test knowledge score category out of which middle age group (77.50% of the respondents) was having highest percentage than others. All the farmers with different education status fell in high post test knowledge score category and primary level educated

farmers (35.00% of the respondents) were highest than others education status farmers. Similarly, respondents with different experience group fell in high post test score category, among these category majority (77.50%) were came from medium level of experience. All the respondents coming from different occupational background fell in high post test knowledge score category and majority of them (72.50% of the respondents) were having farming as major occupation. All the farmers with different land holding pattern fell in high post test knowledge score category and out of that 56.66 percent of the respondents belonged to medium land holding category. All the farmers from varied herd size group fell in high post test knowledge score category. All the farmers from different annual income group fell in high post test knowledge score category and 45.00 percent of the respondents belonged to low category of annual income. All the respondents from different extension contact and mass media exposure group fell in high post test knowledge score category. Sarangi (2006) reported that the knowledge level of dairy farmers regarding clean milk production was high level (16.66%), medium level (55.84%) and low level (27.50%).

Table 2 Distribution of different categories of respondents according to post-test knowledge score (n=120)

Variables	Categories	Post-test scores			Total
		Low	Medium	High	
Age	Young (up to 35 years)	0 (0)	0 (0)	14 (11.66)	14 (11.66)
	Middle (35-60 years)	0 (0)	0 (0)	93 (77.50)	93 (77.50)
	Old (>60 years)	0 (0)	0 (0)	13 (10.83)	13 (10.84)
Education	Illiterate	0 (0)	0 (0)	38 (31.67)	38 (31.67)
	Primary	0 (0)	0 (0)	42 (35.00)	42 (35.00)
	Primary to 8th standard	0 (0)	0 (0)	26 (21.67)	26 (21.67)
	Matriculation	0 (0)	0 (0)	13 (10.83)	13 (10.83)
	Higher secondary	0 (0)	0 (0)	1 (0.83)	1 (0.83)
	Graduation and above	0 (0)	0 (0)	0 (0)	0 (0)
Experience	Low (<8 years)	0 (0)	0 (0)	15 (12.50)	15 (12.50)
	Medium (8-31 years)	0 (0)	0 (0)	93 (77.50)	93 (77.50)
	High (>31 years)	0 (0)	0 (0)	12 (10.00)	12 (10.00)
Occupation	Milkman	0 (0)	0 (0)	8 (6.66)	8 (6.66)
	Electrician	0 (0)	0 (0)	2 (1.66)	2 (1.66)
	Labour	0 (0)	0 (0)	17 (14.16)	17 (14.16)
	Farming	0 (0)	0 (0)	87 (72.50)	87 (72.50)
	Driver	0 (0)	0 (0)	3 (2.50)	3 (2.50)
	Service	0 (0)	0 (0)	1 (0.83)	1 (0.83)
	Business	0 (0)	0 (0)	1 (0.83)	1 (0.83)
	Tailor	0 (0)	0 (0)	1 (0.83)	1 (0.83)
Land Holding	Small (<1)	0 (0)	0 (0)	37 (30.83)	37 (30.83)
	Medium (1-3)	0 (0)	0 (0)	68 (56.67)	68 (56.67)
	Large (>3)	0 (0)	0 (0)	15 (12.50)	15 (12.50)
Herd Size	Small (<3)	0 (0)	0 (0)	42 (35.00)	42 (35.00)
	Medium (3-6)	0 (0)	0 (0)	57 (47.50)	57 (47.50)
	Large (>6)	0 (0)	0 (0)	21 (17.50)	21 (17.50)
Annual Income	Low (<59000)	0 (0)	0 (0)	54 (45.00)	54 (45.00)
	Medium (59000-77000)	0 (0)	0 (0)	53 (44.16)	53 (44.16)
	High (>77000)	0 (0)	0 (0)	13 (10.84)	13 (10.84)
Extension Contact	Low (<2.33)	0 (0)	0 (0)	31 (25.83)	31 (25.83)
	Medium (2.33-4.03)	0 (0)	0 (0)	88 (73.33)	88 (73.33)
	High (>4.03)	0 (0)	0 (0)	1 (0.84)	1 (0.84)
Mass Media	Low (<2.20)	0 (0)	0 (0)	15 (12.50)	15 (12.50)
Exposure	Medium (2.20-5.43)	0 (0)	0 (0)	67 (55.83)	67 (55.83)
	High (>5.43)	0 (0)	0 (0)	38 (31.67)	38 (31.67)

Figures in parenthesis indicate percentage

This suggested that all age group respondents fell in high post test knowledge score as they were exposed to multimedia and as a result immediate increase in their knowledge level on clean milk production was observed. Education level did not play major role in contributing gain in knowledge through multimedia, as a result of that, irrespective of education level of the farmers all fell in high post test knowledge score category. Majority of farmers were having medium to high level of experience on dairying. That indicated, they possessed some knowledge about CMP, as a result of that all the respondents fell in high post test knowledge score category. As most of farmers were

from farming occupation and when information was provided through multimedia they gained much more knowledge and all fell in high post test score category. Farmers fell in high post test score irrespective of their land holding. Dairying was normal task for the farmers as a result they were exposed to some facts about dairying and when the number of animals increased they tried to adopt more advanced practices hence, all the respondents with large herd size fell in high post test knowledge score category. Around half of the farmers fell in low income group but by providing information through multimedia enhanced their knowledge. In case of extension contact and mass media exposure, also similar trend was observed. Thus, it can be said that, after exposure to multimedia there was knowledge gain and after examining every variable studied, reflected that each category of respondents fell in high knowledge score. It can be said that knowledge can be enhanced through scientifically developed multimedia.

Distribution of different categories of respondents according to knowledge retention score

The data presented in (Table 3) indicate that all age group respondents fell in high post test knowledge score category out of which middle age group (77.50% of the respondents) were having highest percentage than others. All the farmers with different education status fell in high post test knowledge score category and primary level educated farmers (35.00% of the respondents) were highest than others education status farmers. Similarly, respondents with different experience group fell in high post test score category, among these category majority (77.50% of the respondents) were came from medium level of experience. All the respondents coming from different occupational background fell in high post test knowledge score category and majority of them (72.50% of the respondents) were having farming as major occupation. All the farmers with different land holding pattern fell in high post test knowledge score category and out of that 56.66 percent of the respondents belonged to medium land holding category. All the farmers from varied herd size group fell in high post test knowledge score category. All the farmers from different annual income group fell in high post test knowledge score category and 45.00 percent of the respondents belonged to low category of annual income. All the respondents from different extension contact and mass media exposure group fell in high post test knowledge score category. Roy (2004) reported that overall knowledge level of respondents after exposure to multimedia was high level (39.00%), medium level (30.00%) and low level (31.11%).

This suggested that all the old age group farmers fell in high knowledge retention score category and all the young age group farmers fell in medium knowledge retention score category. The reason was that the younger generation was not serious enough regarding clean milk production practices as compared to older generation, moreover; lack of concentration and 'taking things lightly' attitude of young generation may also contributed in the facts. Most of the literate farmers fell in high retention score category due to their knowledge and interest but it can be seen that most of the illiterate farmers were also fell in high retention score category. This was due to their interest and seriousness regarding clean milk production. Moreover, the application of multimedia to increase knowledge has been effective for both literate and illiterate respondents almost similarly. This was an encouraging fact that multimedia can be effective for gain in knowledge for illiterate farmers. All the farmers having low experience fell in medium knowledge retention score category whereas all the farmers having high experience fell in high knowledge retention score category. This indicates that, experience impacted knowledge retention level of clean milk production and more experienced respondents remembered more as they have experienced different intricacies of milk production. Respondents from farming occupation were mostly falling in high retention score category.

All the farmers having low land holding fell in medium retention score category whereas the farmers having large land holding fell in high retention score category because of the fact that small land holding farmers may believed that clean milk production was not essential to them. Most of the farmers having small herd size fell in medium retention score category whereas all the farmers having large herd size fell in high retention score category as small herd size farmers were thinking it may be costly or not effective for small herd size hence, they have not shown much interest on clean milk production. This was by evident by retention scores of the small herd size farmers. All the high annual income group farmers fell in high knowledge retention score category, as they believed that practicing clean milk production would enhance their animal's production and productivity, compared to low income group farmers as they fell in medium retention score category. The farmers having low extension contact fell in medium retention score category whereas most of farmers were having medium to high extension contact fell in medium to high retention score category as extension contact made more impact on retention of clean milk production. All the farmers exposed to high mass media also fell in high retention score category whereas farmers with low exposure to mass media fell in medium retention score category which suggested previous exposure to mass media has impacted on the retention of knowledge.

Based on this study it was seen that most of the farmers were having low education status or studied up to lower level and mostly they were from medium to old age group, few farmers were exposed to magazine/bulletin pertaining to clean milk production. Radio is not much effective medium for getting information now a day because TV is available as advanced medium for getting information and only limited farmers were using radio. Very few farmers have seen any programme on clean milk production. Most of the farmers not participated in any awareness/training programme as they said that they were not having any information regarding the training centers. Most of the farmers were not interacted with any specialist on clean milk production as number of specialists was scanty and those specialists were

also not given any inputs on clean milk production. Few farmers came across to literatures on clean milk production. Most of the farmers not participated in dairy/kisan mela and hence, they were not exposed to the concept of clean milk production, moreover in those dairy/kisan mela also no exposure has been given to farmers about clean milk production. Old age group farmers fell in high knowledge retention score category and all the young age group farmers fell in medium knowledge retention score category. Majority of respondents have not seen any programme on clean milk production. As most of the farmers were having lower level of education, so there was a need to disseminate information through multimedia which could be effective to get desired change irrespective of education status of respondents.

Table 3 Distribution of different categories of respondents according to knowledge retention score (n=120)

Variables	Categories	Retention scores			Total
		Low	Medium	High	
Age	Young (up to 35 years)	0 (0)	14 (11.67)	0 (0)	14 (11.67)
	Middle (35-60 years)	0 (0)	25 (20.83)	68 (56.66)	93 (77.50)
	Old (>60 years)	0 (0)	0 (0)	13 (10.83)	13 (10.83)
Education	Illiterate	0 (0)	11 (9.16)	27 (22.50)	38 (31.67)
	Primary	0 (0)	14 (11.66)	28 (23.33)	42 (35.00)
	Primary to 8th standard	0 (0)	8 (6.66)	18 (15.00)	26 (21.67)
	Matriculation	0 (0)	5 (4.16)	8 (6.66)	13 (10.83)
	Higher secondary	0 (0)	1 (0.83)	0 (0)	1 (0.83)
	Graduation and above	0 (0)	0(0)	0 (0)	0 (0)
Experience	Low (<8 years)	0 (0)	15 (12.50)	0 (0)	15 (12.50)
	Medium (8-31 years)	0 (0)	24 (20.00)	69 (57.50)	93 (77.50)
	High (>31 years)	0 (0)	0 (0)	12 (10.00)	12 (10.00)
Occupation	Milkman	0 (0)	3 (2.50)	5 (4.16)	8 (6.67)
	Electrician	0 (0)	2 (1.66)	0 (0)	2 (1.67)
	Labour	0 (0)	5 (4.16)	12 (10.00)	17 (14.17)
	Farming	0 (0)	27 (22.50)	60 (50.00)	87 (72.50)
	Driver	0 (0)	1 (0.83)	2 (1.66)	3 (2.50)
	Service	0 (0)	1 (0.83)	0 (0)	1 (0.83)
	Business	0 (0)	0 (0)	1 (0.83)	1 (0.83)
	Tailor	0 (0)	0 (0)	1 (0.83)	1 (0.83)
Land Holding	Low (<1)	0 (0)	37 (30.83)	0 (0)	37 (30.83)
	Medium (1-3)	0 (0)	2 (1.67)	66 (55.00)	68 (56.67)
	High (>3)	0 (0)	0 (0)	15 (12.50)	15 (12.50)
Herd Size	Low (<3)	0 (0)	39 (32.50)	3 (2.50)	42 (35.00)
	Medium (3-6)	0 (0)	0 (0)	57 (47.50)	57 (47.50)
	High (>6)	0 (0)	0 (0)	21 (17.50)	21 (17.50)
Annual Income	Low (<59000)	0 (0)	39 (32.50)	15 (12.50)	54 (45.00)
	Medium (59000-77000)	0 (0)	0 (0)	53 (44.17)	53 (44.17)
	High (>77000)	0 (0)	0 (0)	13 (10.83)	13 (10.83)
Extension Contact	Low (<2.33)	0 (0)	31 (25.83)	0 (0)	31 (25.83)
	Medium (2.33-4.03)	0 (0)	8 (6.67)	80 (66.67)	88 (73.34)
	High (>4.03)	0 (0)	0 (0)	1 (0.83)	1 (0.83)
Mass Media	Low (<2.20)	0 (0)	15 (12.50)	0 (0)	15 (12.50)
Exposure	Medium (2.20-5.43)	0 (0)	24 (20.00)	43 (35.83)	67 (55.83)
	High (>5.43)	0 (0)	0 (0)	38 (31.67)	38 (31.67)

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