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Perception of dairy farmers of Saharsa district of Bihar regarding clean milk production

Pramod Prabhakar and MK Bharti

Abstract
Dairy sector plays an important role in India's socio-economic development, and constitutes an important segment of the rural economy. Clean milk production is one of the most important aspects in enhancing the quality of milk. It is important to know farmers' perception about it. With this view, present study was undertaken with the objective of understanding perception of dairy farmers about clean milk production. The study was conducted in nine villages of Saharsa district of Bihar state. A total of 225 respondents were interviewed. Perceptions of the farmers regarding family manpower involved in dairy farming, personnel involved in milking, dairy income, intention to produce clean milk, price dependence for following clean milk production, reasons for following cleanliness measures in milk production, sale price received for milk and satisfaction for the price they received for milk were studied. Most of the dairy farmers expressed their willingness to follow clean milk production measures. Further, most of them were ready to follow such measures even if they were not paid more prices for milk. Farmers practiced clean milk production measures mainly to follow regulations at the dairy cooperative society followed by to avoid spoilage of milk. Milking was mainly a domain of men. Dairy farmers largely neglected impact of cleanliness on animals' udder and health. For over 80% farmers, dairy farming provided a moderate income as portion of their total family income. Majority of the producers were not satisfied with price they were getting for milk. Hence, the study recommends, requisite facilities and guidelines from the agencies concerned are needed to be provided to the dairy farmers to adopt clean milk production practices. Proper education to the farmers regarding importance of clean milk production from health, marketing and animal health point of views needs to be given. The study also suggests offering satisfactory price for milk to hasten the process of adoption of clean milk production practices by the dairy farmers.

Keywords: Dairy Farmer, Clean Milk Production, Milk Contamination, Society

Introduction
India is bestowed with highest cattle (190.1 million) and buffaloes (108.7 million) population (GoI 2012), but the quality and productivity per say is very poor which is major cause of concern in Indian livestock and dairy sector (Chander *et. al.* 2010). Clean milk can be defined as milk from healthy milch animal possessing normal flavour, devoid of dirt and filth with permissible limit of bacteria and essentially free from adulterants, pathogens, various toxins, abnormal residues, pollutants and metabolites (Gupta 2003, Das 2003, Barbuddhe and Swain 2008). The quality of raw milk is determined by its bacterial count and the somatic cell counts. Milking is an art requiring experience and skill. Milking should be conducted gently, quietly, quickly, cleanly and completely. Cows remaining comfortable yield more milk than a roughly handled and excited cow. Maintenance of clean condition in the milking barn results both in better udder health and production of milk that remains wholesome for longer time. The act of milking should be finished within 5 to 7 minutes, so that the udder can be emptied completely. Milch animals are sensitive animals. They get accustomed to certain routines and any sudden change in the routine will disturb them resulting in reduced yield.

Dairy sector plays an important role in India's socio-economic development, and constitutes an important segment of the rural economy. Dairy industry provides livelihood to millions of homes in villages, ensuring supply of quality milk and milk products to people in both urban and rural areas. Indian dairy industry has been growing rapidly keeping pace with increase in milk consumption. This sector also plays significant role in supplementing family incomes and generating gainful employment in the rural sector, particularly among the landless labourers, small and marginal farmers and women, besides providing nutritional food to millions of people at equitable price.

Milk production gives employment to70 million dairy farmers. In terms of total production, India ranks first with a production of 155.5 million tons annually. There is a lot potential in India to increase milk production. No doubt, India has made rapid strides in enhancing the

quantity of milk produce.But it is lagging behind with regard to quality. Major constitutes for milk production in dairy industry in India are small and marginal farmers and unit of production is small (Khatkar, 2007). Further, dairying is considered as a subsidiary occupation to our farmers. Limited access to mass media and illiteracy among our farmers are the main causes of ignorance regarding the quality milk. In this context, clean milk production is one most important aspect in enhancing quality of milk. Like in adoption of clean milk production also has to undergo different steps in innovation decision process. First step in this is awareness of the farmer about the practice. It is also important to know his perception about it. Keeping in view this point, this study was undertaken with the objective of understanding perception of dairy farmers about clean milk production.

Besides, it is one of the largest producer as well as consumer of dairy products. Due to their rich nutritional qualities; the consumption of dairy products has been growing exponentially in the country. Though India is the largest milk producer in the world no Indian dairy made it to the top twenty, because of highly unorganized nature of the Indian dairy industry and also because it is driven by cooperatives and not companies. Indian organized dairy industry is largely, packed milk market. Packed milk captures two-third of the organized dairy market in India. This trend is epitomized by most of the leading dairy players in India. This is the reason for low realization per litre of milk handled by organized players in India. However, we see a trend of shift towards value-added products which will be 30 per cent of the organized dairy market in next five years. This will help improve the realization and the margins for the dairy players.

Table 1: Dairy farmer's perception of Saharsa district of Bihar state regarding clean milk production

Sl. No.	Perception Parameter	Perception	Frequency (N=225)	Percentage (%)
01.	Family manpower involved in dairy farming	Low	25	11.11
		Medium	160	71.11
		High	40	17.77
02.	Dairy Income	Low	15	6.66
		Medium	170	75.55
		High	40	17.77
03.	Personal involved in milking	Women	25	11.11
		Men	178	79.11
		Both	22	9.77
04.	Sale Price received for milk	Low	60	26.66
		Medium	100	44.44
		High	65	28.88
05.	Satisfaction for the price they received for milk	Not	95	42.22
		1/M	75	33.33
		Satisfied	55	24.44
06.	Reason for following cleanliness measures in milk production (1.To maintain health 2.To fetch more price 3.To follow regulation 4.To present disease 5.To avoid spoilage of milk)	1	10	4.44
		2	12	5.33
		3	105	46.66
		5	21	9.33
		2+3	5	2.22
		3+5	45	20.00
		4+5	5	2.22
		1+3+5	12	5.33
		1+2+3+5	10	4.44
07	Intension to produce clean milk	Intend	201	89.33
		Do not intend	24	10.66
08	Price dependence for following clean milk production	Price dependent	155	68.88
		Otherwise also will follow	70	31.11

Materials and Methods

The study was conducted in 9 (Nine) village of Saharsa district in Bihar state during Kishan Chaupal. From each village 25 dairy farmers were selected. Dairy farmers were selected through stratified random sampling method. First of all, dairy farmers were classified into low producing (producing less than1.5 lit/day), medium producing (1.5 to 3.5 lit) and high producing more than 3.5 lit) categories. This stratification was made to represent all categories of dairy farmers. Within each of these categories, 25 farmers were selected randomly. So in all there were 225 respondents. Information was collected with the help of a structured interview schedule. Perception of the farmers regarding family manpower involved in dairy farming, personnel involved in milking, dairy income, intention to produce clean milk production, reasons for following cleanliness measures in milk production, sale price received for milk and satisfaction for the price they received for milk were studied.

Result & Discussion

Distribution of the respondents in these three main categories according to perception of dairy farmers regarding milk production is presented in Table-1:

The family man power involved in dairy farming was predominantly medium (71.11%) to high (17.77%) in a very few instances it was low (11.11%). It means, dairy farming still at the stage where it is able to provide employment and income to the farmers. It is not a large scale commercial dairy farming unlike in other developed countries. For over 80% farmers, dairy farming provided a moderate income as portion of their total family income.

It strengthens the argument that dairy farming is still not a specialized activity for a large numbers of farmers in our country. It is undertaken largely as a component system of

crop livestock system.

Table-1 indicates, milking was mainly a domain of men (79.11%) but some families in women (11.11) and both men and women (9.77%) milked the animals depending upon the convenience. In some instances, labourers were milking the animals however in many training programmers to the dairy farmers. Majority of the farmers will be men. Most of the dairy farmers expressed their willingness to follow clean milk production measures. Further, these farmers were ready to follow such measures even if they were not paid more prices for milk. No doubt, price is an important factors in stimulation the farmers to adopt clean milk production measures. However it does not seem to be the single determining factor. But, provided the requisite facilities any guideline from the agencies concerned, farmers were more likely to adopt clean milk production practices.

Further, Examination of table-1 reveals, farmers practiced clean milk production measures mainly to follow regulations at the dairy co-operative society (minimum lactometer reading and fat percentage, more dirt was not allowed etc.). The other main reason was to avoid spoilage of milk. Thus, it shows, dairy farmers largely neglected impact of cleanliness on animals' udder and health. They also did not seem to know about milk contamination causing health hazards. On similar lines, Patil *et al*. (2009) reported that majority of the dairy farmers did not know that the milker should be healthy and free from bad habits. This might be because of their personal health and spread of zoonotic diseases through humanly infection via milk. Drawing from the experiences of (Khatkar, 2007), the study suggests for proper education to the farmers regarding importance of clean milk production from health, marketing and animal health point of views. Among the reasons for following clean milk production practices, price was not mentioned as a reason by most farmers.Because, the milk pricing policy both at dairy co-operative societies and private sectors was largely based on solids and fat content of milk. Concept of pricing based on cleanliness of milk was neither mooted by the market nor by the farmers. Further studies on relationship between pricing policy encompassing microbial quality of milk and cleanliness of milk need to be under taken. Majority of the producers (42.22%) were not satisfied with price they were getting for milk. Even though exact relationship between pricing of milk encompassing microbial quality and cleanliness of milk is not well established, as reported by Mohi and Bhatti (2006), to adopt something new practice like clean milk production, farmers satisfaction regarding price they get for milk may act as an influencing force.

Conclusion

A part from cleanliness of cows and their udders, the milkers as well as the milking pails should be clean. The milkers should wear clean dress and cover (hair heads with suitable caps, lest loose hairs may fall in milk. Their nails should be well trimmed and their hands clean and disinfected between each milking by washing in antiseptic solution. Dairy farmers largely neglected impact of cleanliness on animals' udder and health. They also did not seem to know about milk contamination causing health hazards. However, majority of them inclined to follow clean milk production measures. Requisite facilities and guidelines from the agencies concerned are needed to be provided to the dairy farmers to adopt clean milk production practices. Hence, the study suggests for proper education to the farmers regarding importance of clean milk production from health, marketing and animal health point of views. Milking was mainly a domain of men. The study suggests giving also importance to women because less involvement of female farmers in dairying. Majority of the producers were not satisfied with price they were getting for milk. The study also suggests offering satisfactory price for milk to hasten the process of adoption of clean milk production practices by dairy farmer.

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