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PRODUCTION, MARKETING AND CONSUMPTION PATTERN OF MILK IN URBAN, PERI-URBAN AND RURAL AREA DAIRY FARMS IN THE JOBNER OF JAIPUR IN RAJASTHAN

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ABSTRACT

Present study was conducted in Jaipur and jodhpur district of Rajasthan. A total of 150 households had been selected randomly depending on the number of households that own crossbred dairy cattle for cross sectional survey to produce information on dairy production & main difficulties and marketing methods hindering dairy development. Dairy farm was chosen to complete the proposed research. The study revealed that the overall extent of association of respondent to milk Production in urban, peri-urban and rural Area Dairy was found to be overall 78 percent while 87 and 60percent in urban / peri urban and rural respectively with the average crossbred cattle population of 2.96 TLU in the area. Women play major role in milking, milk processing, cleaning and care of animals while men (95.5 percent) was solely responsible for taking breeding decisions. Marketing of milk was to the retailers milk purchaser i.e. shopkeepers (68 percent) and merchants (32 percent) while the butter purchaser were direct buyers (79.3 percent) and retailers (20.7 percent). Consumption of milk is mainly in the form of tea for adults while children were consuming milk directly.

KEYWORDS: Milk, production, consumption, marketing, rural.

INTRODUCTION

India is the largest milk producer country in the world, contributing 23 per cent of global milk production. Milk production in the country has grown at a compound annual growth rate of about 6.2 per cent to reach 209.96 million metric tonnes in 2020-21 from 146.31 million metric tonnes in 2014-15. Approximately, 46 percent of the milk produced is consumed either at the producer level or sold to consumers in rural areas. India is the largest milk producing country in the world with production of 146.3 million tones during the year 2015-16. 36 per cent of the milk production is contributed by indigenous buffaloes followed by 26 per cent by crossbred cattle. The indigenous cattle contribute 12 per cent of the total milk production in the country whereas non-descript cattle contribute 9per cent milk production and non-descript buffaloes contribute 13 per cent milk production (Anonymous, 2017).

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Livestock is the major source of animal protien to the population. The dairy sector in Rajasthan plays a major role in improving socio-economic status of the dairy farmers. About 35 percent of income of small and marginal farmers comes from dairy and animal husbandry (RAJRAS, Internet). The state is 2nd highest in milk production in the country. Of the total milk production, 53% is buffalo milk, 36% is cattle milk and 11% is goat milk. Dairy is one of the most important activities in the rural and periurban area of Rajasthan. It is interlinked with farming systems. Apart from ensuring nutrient supplies to the families it offers an employment and income to the family members. The dairy farms located in the periphery of urban areas sale milk in the nearby market place. The peri-urban farms have special advantage because of their easy access to the market centre.

In various study, it has been observed that the highest per capita milk consumption is not linked with the market system (Singh, 2000). If milk is to flow from rural areas to the urban ones, its availability and consumption rate at the production place will decrease considerably. This ought to affect the health of producer families for whom milk is the only food of animal origin with exceptionally high nutritive value. The first to be affected by reduced milk consumption are the children for whom milk is complete food of high quality protein. This is the inadequately addressed issue. Therefore in the planning of dairy development, when milk is being diverted from its production place to the market place, income and other factors affecting producer family must be taken in to consideration with the dairy development processes. Need base approach of dairy development, extension, awareness and training of the farmers who are involved in dairy farming or business can improve the production, consumption and marketing of milk significantly.

MATERIAL AND METHOD

Present study was conducted in Jaipur and jodhpur district of Rajasthan. A total number of 150 households were selected through random sampling technique and interview ed in structured survey questionnaire.

Depending upon the number of households that own crossbred dairy cattle for cross sectional survey to produce information on dairy production, main difficulties and marketing methods hindering dairy development. Multistage stratified sampling techniques were used to collect the data. The region was stratified into 2 production subsystems dependent on its good ways from the Jaipur town, market direction, improved breed accessibility, and production and utilization system. For family overview, the number of households selected from each Jodhpur and Jaipur was corresponding to size (about 10percent of the total households were selected randomly from farmers registered as milk producers of the separate (Jodhpur) of which 40-half were females (both female headed households and female inside male headed households).

The research zone was restricted to dairy farm of Jobner (Jaipur) where crossbreeding was begun in the year 1991-1992. The heifers and cows were inseminated with frozen semen of Holstein Friesian bulls. All crossbred cows were having fifty percent exotic (Holstein Friesian) blood and were kept up under semi-dry conditions.

RESULT AND DISSCUSSION

LIVESTOCK POPULATION AND LIVESTOCK HOLDING

Table 1 indicates that the average livestock unit of local and crossbred cattle in rural and urban/periurban area were found to be 4.14

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and 2.96 total livestock unit (TLU) per household, respectively. Whereas the average TLU was found to be 3.88, 4.39 for local cattle and 3.20 and 2.72 for crossbred cattle in urban/peri urban and rural areas respectively. The average livestock holding per households in urban/peri-urban and rural production systems were 8.02 and 8.13 TLU, respectively.

Table 1.Livestock holding per households (TLU)

Production systems			
	Urban/peri-urban (n=50)	**Rural (n=100)**	**Overall (N=150)**
Livestock type	Mean±SE	Mean+SE	Mean+SE
Total cattle (TLU)	7.08±0.75^{b}	7.11±0.43^{a}	7.10±0.59
Local cattle (TLU)	3.88±0.32^{b}	4.39±0.26^{a}	4.14±0.29
Crossbred cattle (TLU)	3.20±0.43^{a}	2.72±0.17^{b}	2.96±0.30
Sheep (TLU)	0.14±0.02	0.16±0.01	0.15±0.01
Goats (TLU)	0.15±0.05	0.12±0.01	0.13±0.03
Equines (TLU)	0.65±0.05	0.74±0.04	0.70±0.04
Total livestock (TLU)	8.02±0.87^{b}	8.13±0.49^{a}	8.08±0.67

N=number of respondents; s.e=standard error; a-b means with different superscripts for the same variable across the same row are not significantly different (p>0.05).

It was also found from the study that average total cattle unit in urban/peri-urban and rural production systems were 7.08 and 7.11 TLU respectively. Amongst total livestock population on an average 0.13, 0.15 and 0.70TLU were goat, sheep and equine respectively.

The picture of livestock composition, in fact, is varying from area to area. The picture revealed that in the urban and peri-urban areas, families had milch animals in large proportion, as the milk produced can be immediately transported to the nearby market and they can get immediate return from milk sale.

DAIRY CATTLE BREEDS

Table 2 indicates that the major cattle breeds of the study area included Local, Local×Jersey and Local x Holstein Friesian crossbreds. In urban/ periurban and rural area maximum cattle was with 50 to 75 percent blood level followed by 50 percent blood level in both types of production system.

Table 2.Number of crossbred cattle owned by sampled households

Parameter		**Cattle type**			
Production system	**Blood Level**	**Cows**	**Heifer**	**Bulls**	**Calves**
Urban/peri-urban	50percent	20	6	-	14
	50-75percent	34	15	3	9
Rural	50percent	36	27	-	29
	50-75percent	17	13	-	8

FARMING ACTIVITY

It can be found from table 3 majority of the respondents were basically associated with milk production (78 percent) in urban / peri urban (87) and rural (60) areas followed by poultry production (14.7percent) and goat production (7.3 percent). In case of goat or small ruminant percentage was slightly higher in rural (7 percent) area as compare to urban/peri urban (6 percent) areas. Study indicated that main source of income for majority of farmers (57.7

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percent) were livestock and agriculture followed by Crop, livestock & off-farm activity, livestock, livestock and off-farm percent, 16.1, 14.6 and 11.6 percent respectively. Therefore, it can be concluded that major source of income in the family was livestock and off farm activity (30 percent) in urban and periurban area while livestock and agriculture (74 percent) in rural area.

Table 3.Income Sources & Livestock Production

Variables	Urban/ peri-urban (%)	Rural (%)	Overall (%)
Livestock farming			
• Milk production	87	60	78
• Poultry production	34	6	14.7
• Small ruminant production	6	7	7.3
Income sources			
• Livestock production only	18	13	14.6
• Livestock & agriculture	26	74	57.7
• Livestock & off-farm activity	30	2	11.6
• Crop, livestock & off-farm activity	26	11	16.1

ROLE OF FAMILY MEMBERS IN MILK PRODUCTION

Table 4 indicates the role of family members male, female and children over six years old in milk production. It can be found from the study that care of calves is generally responsibility of women (32.5 percent). Majority of children were engaged with herd management (47 percent male child and 15 percent female child) and taking care of calves were practiced by women and male children 32.5 and 28.7 percent, respectively. Milking (70.9percent), milk processing (80.8percent), cleaning (63.6) and selling of milk (63.9percent) is generally performed by female while Male played major role in breeding decision (80.8percent). The respondent who were having hired labour their major responsibilities was herd management or taking animals to the grazing and feeding of the animals.

Table 4.Role of family members in milk production

Percent of responsible family members					
Activity	**Men**	**Women**	**Male children**	**Female children**	**Hired labour**
Herd Management	12	3	47	15	23
Feeding	27.6	8.5	44.5	3.7	15.7
Caring of calves	11.4	32.5	28.7	17.5	9.9
Milking	12.6	70.9	4.2	8.5	3.8
Milk processing	1.5	80.8	2.6	12.4	2.7
Barn cleaning	1.3	63.6	6.5	22.7	5.9
Sale of milk products	5.5	63.9	8.4	18.0	4.2
Breeding decision	95.5	4.5	-	-	-

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MARKETING OF MILK AND BUTTER

It was found from table 6 that milk producers of Jobner region deliver milk items, yet in addition offer the milk and butter to customers, retailers and merchants. As described by the respondents, the retailers milk purchaser were shopkeepers (68 percent) and merchants (32 percent) while the butter purchaser were direct buyers (79.3 percent) and retailers (20.7 percent). Singh et al. (2018) reported that respondents were utilizing 19.27 per cent of daily milk production for making ghee and chhach. Wani et al. reported marketing agencies which were preferred by the members to dispose their surplus of milk comprised of private milk dairies (9.17%), milk vendors (6.67%) and direct consumers (5.83%) which was in contrast of present findings

Three methods of payment against buying milk were found to be cash, contract and cash in advance 88.7, 7.3 and 4 percent respectively. The common outlets for milk were found commercial center, door to door and farm /home 76, 16.7 and 7.3 percent respectively while the butter outlets were 77.3 percent in commercial center and 22.7 percent door to door supply.

Table 5.Types of Milk and butter buyers, mode of payment and milk product outlet

Milk buyer type	**N**		**Percent**	
Consumers	102		68	
Traders	48		32	
Butter buyer type	N		Percent	
Consumers	119		79.3	
Retailers	31		20.7	
Mode of payment	N		Percent	
Cash on the spot	133		88.7	
Cash in advance	6		4	
Contract	11		7.3	
Milk product outlets	Milk		Butter	
	N	Percent	N	Percent
Farm gate/homestead	11	7.3	-	-
Market place	114	76	116	77.3
Door to door delivery	25	16.7	34	22.7

FACTORS RELATED WITH PRICE, DEMAND AND SUPPLY OF MILK PRODUCTION

There were many factors related with price, demand and supply of milk and its products such as quality, fat, SNF, transportation, availability and access to producer and consumer with in time etc. Form the study it was found that in many areas majority of the adult people consumes milk through tea.

Large dairy owners were selling their milk to the dairies for processing of milk ointo ghee, butter, paneer etc. While processing of milk at home for the quantity not to be consumed directly is different than at a Dairy Processing Plant. In case of processing at home first of all, the milk and its cream was converted into curd. The curd then is churned using a traditional wooden churning instrument and the butter is separated, which is later on refined into ghee. About half of the butter is consumed and the remaining is refined into ghee at all dairy farms.

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Almost entire ghee produced at a peri-urban farm is consumed at home only. Market-oriented dairy farms do not rely on ghee selling. No other dairy products, like paneer, cheese, etc., are prepared at home in rural areas and sold while in urban or periurban areas milk products like butter, paneer and cheese preparation were practiced by respondent.

CONSUMPTION OF MILK

Large quantities of milk to be used in tea as use of coffee in rural areas was very rare unlike in the cities. Children were consuming milk in many families. Respondent were keeping milk at home for their own consumption and rest of the milk were selling by them.

CONCLUSION

An attempt was made to study production, consumption and marketing pattern of milk. Study indicates that production, consumption and marketing pattern of milk is quite different in urban/periurban and rural areas. Dairy farming in urban and peri-urban area is distinguishable from the rural area because of access and transport of milk to the market. As milk is perishable product therefore need a good network and access to the market places for quick transport. Therefore in rural areas respondent preferred door to door sale of milk while urban and peri urban respondent were selling milk to the cities and dairies for further processing. If market infrastructure and transport facilities are available than small dairy owners can produce more milk primarily for sale and earn cash income. In some cases, this trend, however, leads to the reduction in the milk to the market and to be retained at home for consumption by the household members. While, an increase in milk production will not only contribute to more cash income, but also ensure more amount of milk available for family consumption. Therefore there is need to improve transportation facilities and increase in milk collection and chilling centers in rural areas to motivate dairy as a business to generate income.

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