

# ESTIMATION COST OF MILK PRODUCTION IN DISTRICT HYDERABAD SINDH

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**ABSTRACT:** In order to analyze milk marketing in peripheral areas of Hyderabad town of Sindh province, a survey study was carried during the year 2015-16. Primary data were collected from 100 respondents which included 25 milk producers, 25 milk traders, 25 milk hawkers and 25 milk retailers. The results revealed that the average price of milk paid by a milk trader to the milk producer was Rs. 47/liter, while the marketing costs were Rs. 1.45/liter which were incurred on the processing, transportation and taxation etc. Hence, the total outlay of the milk was enumerated to be Rs. 48.45/liter and subsequently sold to milk hawker at the rate of Rs. 51/liter. The marketing margin and net margin of milk trader were estimated at Rs. 4/liter and Rs. 2.55/liter, respectively. The milk hawker sold the milk at the rate of Rs. 56/liter to retailer and the retailer sold at the rate of Rs. 60/liter to the consumer. Marketing expenditures incurred by hawker and retailer were estimated at Rs. 1.55/liter and Rs. 2.25/liter, respectively. Marketing margin and net margin of hawker were found to be Rs. 5/liter and Rs. 3.45/liter. The breakdown of consumer's rupee revealed that 78.33 percent was taken by the milk producer, while the shares of milk trader, milk hawker and milk retailer were 6.67, 8.33 and 6.67 percent, respectively. The most dominant issues were standard management practices (80%), difference of skilled labor (80%) followed by modern technologies (50%), nutrition (40%), disease control (40%) and lack of credit facility (40%). The minor problem of milk production was found to be shade (20%), breeding to improve milk productivity (20%) and milk marketing and price (20%), respectively. It was concluded that marketing system for milk was not identical; the marketing structure was found completely non-commercialized. The milk traders were engaged in distinct types of operations; they purchased and processed milk and sold it to milk hawker, and also to the retailer. Similarly, milk hawker purchased milk from producers and also from milk trader, and sold to retailers and also to consumers. Finally, the retailers purchased milk from hawker and also from milk trader and sold it to consumers.

**Keywords:** Milk, Marketing, Trader, Hawker, Retailer and Producer.

## INTRODUCTION

Milk plays a vital role in building a healthy society and can be used as vehicle for rural development, employment and slowing down the migration of the rural population. Milk is produced for meeting one's own household needs, either in the form of milk or in the form of products made of milk (yogurt, butter milk or lassi, butter/butter oil or ghee); and majority of the rural households possesses milch animals to meet their daily food requirement; and milk or milk products are rarely sold [1]. Milk and milk products provide nearly one third of world's intake of animal protein. This may not be true for Pakistan where milk provides more than half of the 17.49 of animal protein available for each person daily. The total milk yield in Pakistan is 33.20 million tons and entire dairy processing industry was using only about 15% of it [2]. The importance of milk as a cash crop is always neglected in the past. While comparing the value of milk with other cash crops, it has been stated that milk has a value about 60% higher as compared to wheat and cotton together [3]. If per capita availability of milk (169 litres) is right then it should be visible in our daily food items. Point to understand is whether our common man is consuming such amount of milk or he is striving for minimum milk quantity needed for daily requirement. It indicates that we are still not self-sufficient in milk. Furthermore, quality of available milk is still a big question. The gross milk production in Pakistan during the year 2015-2016 was 18.706 thousand tons and the contribution of cow to this total milk production was 52.632 thousand tons and buffalo contributed 32.180 thousand tons. The milk produced by sheep and goat during the current year was 38 thousand tons and 845 thousand tons, respectively [4]. It is acclaimed that Pakistan is at 4<sup>th</sup> position in milk producing countries of the world. Pakistan is 2<sup>nd</sup> in buffalo

milk production and 12<sup>th</sup> in cattle milk production [1]. Milk production and marketing in Pakistan is dominated mainly by the informal private sector, consisting of various agents, each performing a specialized role at a particular point in the supply chain. These consist of producers, collectors, middlemen, processors, traders, and consumers. Only 3-5% of total production in the country is marketed through formal channels. The remaining 95-97% is produced and marketed in raw form by informal agents in the marketing chain [5]. To get a comprehensive understanding of the opportunities and problems associated with the dairy enterprise in Pakistan, it would be important to give here an overview of the role being played by both the informal and formal channels. Most of the dairying process exists at subsistence level in Pakistan and are responsible for 70% of the milk produced. Subsistent farmers maintain 1-5 milk producing animals on his farm [4]. These animals produce milk which is used to fulfill daily household requirements and excessive amount is sold to run daily household activities [6];[1]. Milk marketing in rural areas is mainly exploited by middlemen and smallholders have to rely on middlemen to market their produce. Middlemen always have a monopolistic approach and can exploit farmers by paying low prices, executing binding sales contracts and not passing on gains when prices are seasonally high in response to lower supply. On the other hand, in their capacity, middlemen also gives the advantage of providing support services in the form of credit, health care and other necessary services to the farmer community to strengthen their contacts [7]. As a result of a complex collection and distribution system, the current milk quality in Pakistan is below international standards [6]. The average milk price is generally associated with the availability and quality of milk

as well as the season. Variation of farm gate price is not linked to the quality of the milk. It is rather determined by two factors. One is the financial arrangement between the buyer and seller. The second factor is the geographical location. Currently, there are no policies to regulate milk prices at the farm level. The middlemen, contractors, Gawalas (local milk collection, transportation, and distribution people) processors, processed unpacked milk, loose milk, and processed milk are the segments of the dairy value chain [8]. Around one third of the total milk produced by the rural families flows out to urban consumers and processing industries. More than half of the milk collected by urban traders and processing industries comes from small herd families. The family's decision to sell milk and the amount to sell is clearly poverty driven. Small farmers sell milk only because they have no other source of cash income. Milk in urban areas is accessible to common consumers in two ways: loose, unprocessed milk and packed, processed milk. Each has its own price regime. The unprocessed milk passes through the middle persons before it reaches the urban retailer. The price of milk increases by one rupee per liter at every stage of sale. The 'Gawalas' generally have undocumented contracts with farmers for regular milk supply [3]. In view of the facts stated above, the study was carried out to analyze the milk marketing system in peripheral areas of Hyderabad town in Sindh province of Pakistan.

## MATERIAL AND METHOD

The study was carried out to analyze milk production in peripheral areas of Hyderabad town of Sindh province during the year 2015-16. The study describes the method of primary data collection using a questionnaire especially developed for this purpose and field observations. The secondary data were collected and analyzed for marketing analysis in the study area. In view of the objectives, the following methods of study were adopted.

### Sampling technique

The selection of a sample from the population is commonly used in economics, marketing and other disciplines because of limitations of covering the whole population. Barnett (1991) considered that cost is the main constraint in carrying out interviews of the whole population. Given disadvantage of studying population in terms of money, time, efforts and data management, a sample is a more appropriate method. Sampling not only saves cost and time but also gives more accurate results than a census. Because of limited time, finance, data management, and traveling, a decision was taken to interview 25 milk producers (a person who initially produces a commodity is called a producer), 25 milk traders (a person who carries milk from producer and deliver it to milk hawker, retailer, and sometimes a consumer), 25 milk hawkers (a person who receives milk from trader and/or milk producer), and 25 retailers (a person or agency that receives milk from trader and/or hawker). The sample size was considered adequate in terms of depth and accuracy required and in terms of the time and resources available for the research area. The respondents were selected through simple random sampling from the study area. A sample of 100 respondents in peripheral areas of Hyderabad town of Sindh province was selected randomly to have information in

different aspects of marketing of liquid milk. Details of agencies involved in marketing of the milk were obtained from 25 functionaries from each category i.e. selected randomly.

### Data collection

The primary data were collected throughout the year 2015 using a complete set of questionnaire was prepared (pre-tested before finalization) to record the interview of the randomly selected respondents. The questionnaire comprised of the queries about marketing association of milk market, marketing cost incurred by different agencies, buying and selling price of milk through various middlemen in the system and problems faced by a variety of sellers and buyers. Secondary data were collected from various sources of government publications, literature and internet as well.

### Marketing margins

Marketing margin is the distinction between sale prices (received price and paid price) of two or more than two agencies for equivalent quantity of a specific commodity. The formula used to calculate the marketing margins is as follows:

$$M_m = P_r - P_p$$

where,  $M_m$  stands for marketing margin,  $P_r$  indicates received price and  $P_p$  represents paid price.

### Price spread

Price spread (Ps) is a term frequently been used to represent the combined margins of several types of dealers. This term also applied sometimes to designate absolute margin earned by some specific dealer. Price spread analysis helps in examining price levels of particular commodity at various stages of marketing. Price spread consumption was made after [9].

$$P_s = P_r - P_p$$

Where  $P_s$  denotes price spread,  $P_r$  stands for price received and  $P_p$  symbolizes price paid.

### Marketing cost

Marketing cost is referred as allocate spending incurred by different marketing participants from the time as the milk go away the farm-gate to arrive at marketing agents for processing. Marketing costs were incurred by the produces as well as all the intermediaries participating between producers and consumers in the flow of commodity. The standard components of marketing cost included loading, unloading, transportation, commission and processing and marketing tax. These costs were computed on liter of milk. Every functionary was required regarding the amounts spent on each liter.

### Net Margin

The net margin of a specific agency is the net earnings, which it earns after paying all marketing costs. Net earnings of different market agencies concerned in the marketing of milk were computed with the following rule:

$$N_m = P_r - P_p - M_c$$

where,  $N_m$  stands for net margin,  $P_r$  indicates sale price,  $P_p$  represents buying price and  $M_c$  represents marketing costs incurred by the same agency.

### Breakdown of consumer's rupee

The term "Breakdown of consumer's rupee" refers to the distribution of one unit of currency (rupee in case of Pakistan) paid by the final consumer for a commodity (in the form of expenses and margins) among producer and various marketing middlemen involved before it reach in the hands of consumer.

In other words, it shows the pattern that how various intermediaries have contributed in the marketing chain (like milk trader, milk hawker and retailers, etc.) and the extent of profits earned by them. The following formula was used to estimate the breakdown of consumer rupee.

Where “BD<sub>cr</sub>” stands for breakdown of consumer rupee spent on specific commodity , “Ps” indicates price spread (Ps or absolute margin both are same) and “RP” represents retail price.

**Cost benefit ratio**

It is defined as the amount received in the shape of profit on the cost of one rupee is called as cost benefit ratio. The Cost Benefit ratio was computed by the method adopted by [7].

$$Cbr = \frac{Nr}{Tc}$$

Cbr = Respondents cost benefit ratio.  
 Nr = Stands for net returns.  
 Tc = Denotes total cost.

The data so collected were analysed and interpreted on the basis of aforementioned formulae. Moreover, in view of the research findings, the conclusions were drawn and suggestions were offered for improvement.

**RESULTS**

It is evident from the data that there was observed in Table-1. The farmers were interviewed for educational level viz., illiterate, primary, middle, matriculation and above. The majority (30%) farmers possess a middle class level followed by (25.00) under illiterate level, 25.00 and 20.00% were primary school and up to matriculation level in the district Hyderabad. Moreover, the respondent majority of 60.00% were age group of 35 to 50 years, followed by 35.00% farmers were aged up to 35 years and 5.00% farmers were above 50 years of age.

The results presented in table-2, revealed that overall the milk prices at retailer level Rs. 60.00 per liter were considerably higher than received by the producer Rs.47.00 per liter. The main jumps in milk prices were observed from producer to milk trader, milk hawker and milk retailer. The producer brings production from farm to market and later intermediaries carry milk from the market to retailer, consumer or near the doorstep of consumer. The purchase price of milk trader to pay the producer for one liter milk was Rs. 47.00,

**Table-1: Distribution of respondent for their educational level and age level.**

Characteristics	Frequency	Percent age
Educational level	-	-
Illiterate	25	25.00
Primary	25	25.00
Middle	30	30.00
Matriculation	20	20.00
Total	100	100.00
Age level	-	-
Upto 35 years	35	35.00
35 to 50 years	60	60.00
Above 50 years	05	5.00
Total	100	100.00%

while milk trader paid Rs. 51.00 per liter; while the retailer areas of Hyderabad town of Sindh province spent Rs. 56.00 for purchasing one liter liquid milk. However, the consumer paid Rs. 60.00 for purchasing one liter milk from the retailer. Moreover, the analysis of price spread as reported in Table-3 showed that the price spread between milk producer and the milk trader was estimated to be 30.77 percent; and between milk trader and milk hawker, the price spread was 38.46 percent of the total price spread. However, te price spread between milk hawker and milk retailer was estimated to be 30.77 percent of the total price spread. While the table-4 opted some of the marketing costs computed at each stage of the marketing chain based on the expenses incurred. Overall, milk trader was found to be spending Rs. 1.45 per liter. Likewise, the marketing costs of milk hawker and retailer were estimated as Rs. 1.55 and Rs. 2.25 per liter, respectively. The marketing costs of retailer were relatively higher than milk trader and milk hawker and associated with involvement of his shop rent, electricity and other fixed costs.

**Table-2: Average buying and selling price of milk by intermediaries in the peripheral.**

Market intermediaries	Buying price (Rs/liter)	Selling price (Rs/liter)
Milk producer	--	47.00
Milk trader	47.00	51.00
Milk hawker	51.00	56.00
Milk retailer	56.00	60.00

**Table-3: Price spread on marketing of fresh milk for various intermediaries.**

Agent	Price paid Rs.	Price received Rs.	Price spread	Percentage
Milk trader	47.00	51.00	4.00	30.77
Milk hawker	51.00	56.00	5.00	38.46
Milk retailer	56.00	60.00	4.00	30.77
Total	-	-	13.00	100.00

**Table-4: Marketing costs (Rs/liter) incurred on fresh milk by middlemen in the peripheral areas of Hyderabad town of Sindh province.**

Sr#	Market intermediaries	Marketing cost (Rs/liter)
1.	Milk producer	--
2.	Milk trader	1.45
3.	Milk hawker	1.55
4.	Milk retailer	2.25

In order to measure the business efficiency, the marketing margins earned by various agencies participating in the marketing of liquid milk in peripheral areas of Hyderabad town were calculated and these are shown in Table-5. The table depicted that the milk hawker got more marketing margin/absolute margin i.e. Rs. 5.00 per liter of milk as

compared to milk trader and milk retailer who receives equally Rs. 4.00 per liter. The net margin of the milk trader was calculated on a per liter basis. Similarly, the net margins of hawker, and retailer were calculated. It can be seen from the data in Table-6 that among all the intermediaries, the milk hawker achieved higher net margin as compared to milk trader and milk retailer. The average price of Rs. 47.00 per liter was paid by milk trader to the producer; whereas he incurred marketing costs of Rs. 1.45 per liter. The marketing costs include average costs of processing, transportation, marketing tax and others. Milk trader received Rs. 51.00 per liter, thus his net margin was Rs. 2.55 per liter. Likewise, milk hawker and retailer paid Rs. 51.00 and Rs. 56.00 per liter and spent Rs. 1.55 and Rs. 2.25 per liter and finally received Rs. 56.00 and Rs. 60.00 per liter, so their net margins were Rs. 3.45 and Rs. 1.75 per liter, respectively

**Table-5: Marketing margins/absolute margin earned by various agents of fresh milk in the peripheral areas of Hyderabad town of Sindh province.**

Agent	Paid price (Pp)	Received price (Rp)	Marketing margin/absolute margin (Pp-Rp)
Milk Producer	--	47.00	--
Milk trader	47.00	51.00	4.00
Milk hawker	51.00	56.00	5.00
Milk retailer	56.00	60.00	4.00

**Table-6: Net margin earned by various agents of fresh milk in the peripheral areas of Hyderabad town of Sindh province**

Agent	Paid price (Pp)	Marketing cost (Mc)	Received price (Rp)	Net margin (Nm=Rp-Pp-Mc)
Milk Producer	--	--	47.00	--
Milk trader	47.00	1.45	51.00	2.55
Milk hawker	51.00	1.55	56.00	3.45
Milk retailer	56.00	2.25	60.00	1.75

The consumers' one rupee expenditure on a particular commodity is divided between the producer and other marketing intermediaries. This was calculated by expressing the absolute margin of the middlemen as a proportion of the retail price of the specific commodity on per liter basis. When producer sold the milk to the trader, his share in consumers' rupee was reported to be greater i.e. 78.33 percent as compared to milk trader, milk hawker and the milk retailer, whose shares were observed to be 6.67, 8.33 and 6.67 percent, respectively (Table-7). The cost benefit ratio is basically a very simple technique for computing the costs with the benefits. It is widely used to examine the farm efficiency. Cost benefit ratio calculated in this study is summarized in Table-8. The results revealed that, on one rupee investment on milk marketing, the milk hawker

pocketed the highest benefit, i.e. Rs. 2.22 per liter, whereas, milk retailer received the lowest Rs. 0.77 per liter; while the milk trader earned Rs. 1.75 per liter. Relatively lower cost:benefit ratio of the retailer was the result of higher costs involved, such as shop rent, electricity bill and others etc. as compared to hawker and trader. The data in (Table-9) shows milk production issues of respondents. The most dominant issues were standard management practices (80%), difference of skilled labor (80%) followed by modern technologies (50%), nutrition (40%), disease control (40%) and lack of credit facility (40%). The minor problem of milk production was found to be ashade (20%), breeding to improve milk productivity (20%) and milk marketing and price (20%), respectively.

**Table-7: Breakdown of consumers’ rupee of producer and other intermediaries for marketing of fresh milk in the peripheral areas of Hyderabad town of Sindh province.**

Producer/Intermediaries	Net return (x) Rs.	Breakdown	
		Per rupee BD=Ps/Rp	BD=Ps/Rp*100
Milk producer	47.00	0.783	78.33
Milk trader	4.00	0.066	6.67
Milk hawker	5.00	0.083	8.33
Milk retailer	4.00	0.066	6.67
Total price or Retail price	60.00	1.00	100.00

**Table-8: Cost: benefit ratio of intermediaries for marketing of fresh milk in the peripheral areas of Hyderabad town of Sindh province.**

Agent	Net return (x) Rs.	Expenditure (y) Rs.	Cost benefit ratio (x) / (y) = z
Milk trader	2.55	1.45	1: 1.75
Milk hawker	3.45	1.55	1: 2.22
Milk retailer	1.75	2.25	1: 0.77

**Table-9:Shows that the issues faced by the milk production in the study area**

Marketing problems	Percentage	Ranking
Nutrition	40	C
Shade	20	D
Disease control	40	C
Standard management practices	80	A
Breeding to improve milk productivity	20	D
Milk marketing and price	20	D
Difference of skilled labor	80	A
Modern technologies	50	B
Lack of credit facility	40	C

**DISCUSSION**

The main objective of the study was to analyze milk production and marketing in peripheral areas of Hyderabad town of Sindh province. The primary data were analysed in order to assess the marketing structure, channels, price spread, margins, share in the consumers’ rupee and cost: benefit ratio of various marketing intermediaries. Results show that majority of the respondents had education up to the middle level, where the majority of them were between 35 to 50 years of age. The results indicated inefficient marketing channels for liquid milk due to lack of awareness among the milk producers. The milk producers were engaged in deal of fresh liquid milk for the generation of their income. The results estimated that overall milk prices at the retailer (Rs. 60.00/liter) were higher than the producer (Rs. 47.00/liter), the trader (Rs. 51.00/liter) and the milk hawker (Rs. 56.00/liter). The main jumps in the milk prices were observed from producer to milk trader (Rs. 4.00/liter), from milk trader to milk hawker (Rs. 5.00/liter) and milk hawker to retailer (Rs. 4.00/liter).The reasons for these differences are the costs paid by them in bringing the milk from the producer to market and retailer also pay the rennet of the shop, electricity and other general costs. These results are further supported by

[10], who investigated the production patterns and marketing of milk in Zhob district of Balochistan and found that the wholesaler sold milk at the price of Rs. 24.25/lit, while the retailer sold milk at the price of Rs. 26.42/lit; and wholesaler after deducting marketing costs, received a net margin of 63.18% of his marketing costs; while the retailer on absolute margin was 72.12% of his total marketing costs. Hence, the retailer got significantly better cost : benefit ratio (1:2.58) than the wholesaler (1:1.71). On spending one rupee marketing costs, the retailer pocketed 2 rupees and 58 paisa, while the wholesaler on 1 rupee marketing cost earned benefit of 1 rupee and 70 paisa. The high profits of retailer and the wholesaler than milk producer were associated with the lesser recurring costs than the milk producer. Similar results have also been reported by [11] who studied the marketing of milk in district Matiari and concluded that the wholesaler paid Rs. 24.76/litre to the producer, the retailer paid Rs. 28.36/litre to wholesaler and the end user paid Rs. 34.49/litre to retailer. Price spread between milk producer and wholesaler was 46.41% of the total spread, while the price spread between the wholesaler and the retailer was 53.59% of the total price spread. In te case of marketing margins, retailers earned remarkably highest percentage of marketing margins (17.76%), while the wholesaler received 12.72 % of the marketing margins; and similarly the retailer had the highest level of net margins (72.49 %) over the costs he paid, while the wholesaler had 64.72% net margins. The retailer also received a higher markup percentage (21.61%) over the price he paid for purchasing milk, while the wholesaler received 14.58 % markup. Moreover, retailer shared 56.39 paisa of the consumer’s rupee and wholesaler shared only 43.61 paisa of the consumer’s rupee. The cost:benefit ratio of retailer was 1:3.63 and of wholesaler 1:2.83. [12] carried out a economic analysis of milk production in selected areas of district Tando Allahyar and reported that cost : benefit ratios of small, medium size and large dairy herds from milk production and marketing were 1:0.31, 1:0.34 and 1:0.39 averaging 1:0.35, respectively. The findings of the present research are fully supported by the researchers reviewed in this chapter in all aspects; but these studies were carried out in the past when generally the milk prices were lower, which have been increased rapidly duringthe past few years. However, the differences in the milk price are associated with the fast increasing inflation which has resulted instability in the milk price and the every year the milk price is following increasing trend.

## CONCLUSION

It is concluded that the marketing system for milk was not identical; the marketing structure was found completely non-commercialized. Milk producers sold the milk to consumers directly as well as by means of intermediaries like milk trader, milk hawker and milk retailer, etc. It was observed that particularly, the milk trader and milk hawker directly offer milk price to the milk producers. The milk traders were engaged in distinct types of operations; they purchased and processed milk and sold it to milk hawker, and also to the retailer. Similarly, milk hawker purchased milk from producers and also from milk trader, and sold to retailers and also to consumers. Finally, the retailers purchased milk from hawker and also from milk trader and sold it to consumers. The milk traders' net earnings of milk was Rs. 2.55/liter, milk hawker Rs. 3.45/liter and net income of retailer was calculated as Rs. 1.75/liter. In this study area, it was found that, in general, the milk hawkers' net earnings was higher than the other agents involved in the marketing of milk which include milk trader and milk retailer.

## REFERENCES

- [1]Khan, S.U. Study on production patterns and marketing of milk in district Lasbela, Balochistan. Thesis submitted to Sindh Agriculture University Tandojam, Pp. 1-94 (2006).
- [2]Hemani, M. and R.A. Khan.. Workshop on dairy development. PDAIGTZIL & DD Department, Govt. of Punjab, Lahore, Pakistan (1997).
- [3]Tiwari, R., M.C. Sharma and B. P. SinghBuffalo calf health care in commercial dairy farms: a field study in Uttar Pradesh (India). *Journal of Livestock Research for Rural Development*. 10 (2): 652-660 (2007).
- [4]GOP, Pakistan Economic Survey. 2015-2016. Government of Pakistan, Finance Division, Economic Advisor's Wing, Islamabad (2016).
- [5]Athar, I.H. National demonstrations on the lactoperoxidase system of milk preservation. National Action Plan Pakistan. AG: TCP/RAS /3001. Ministry of Food, Agriculture and Livestock & FAO. Islamabad (2004).
- [6]Umme-e-Zia, Overview of the milk economy: Smallholder dairy development-Lessons Repository, National Consultant for Milk Marketing, Islamabad. <http://www.fao.org/docrep/011/i0588e/I0588E07.htm> (2010).
- [7]Buriro, M.A. Production and marketing of milk in district Matiari. M.Sc. Thesis submitted to Sindh Agriculture University Tandojam (2009).
- [8]Austin, J.E. A. The white revolution: Strategic plan for the Pakistan dairy industry. PISDAC-USAID Pakistan (2006).
- [9]Awan. E. A. 2006. Food laws manual. Revised Edition 2006. Nadeem Law Book House, Pp. 56-57.
- [10]Burki, M., Khan, M. & Bari, F. The state of Pakistan's dairy sector: An assessment. CMER Working Paper No. 05-34. Lahore University of Management Sciences (2005).
- [11]Gandapur, A.N. Study on production patterns and marketing of milk in District Zhob (Balochistan). M.Sc. Thesis submitted to Sindh Agriculture University Tandojam (2009).
- [12]Memon, M. Analysis of milk marketing in peripheral areas of hyderabad town in sindh. M.Sc. Thesis submitted to Sindh Agriculture University Tandojam (2009).