



## MILK SUPPLY, VARIOUS QUANTUM AND ITS UTILIZATION PATTERN IN BALLIA CITY

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### ABSTRACT

In the present investigation a survey was conducted to study the sources of milk supply and its uses for different purposes in Ballia city. It is observed that on an average 1.94 lakh of milk per day was supplied by organized sector namely Dugdh utpadak sahkari Sangh Ballia, Kautiki Agro Product Pvt. Ltd. Indara, Mau, Sudha Co-operative Dairy Aara, Bihar and Amul Gujrat Co-operative Milk Marketing Federation Ltd. Anand, Gujrat. An average technical efficiency level of 72% which implies approx. 38% inefficiency level was observed in milk farmers. The milk is transported to Ballia city from distance through Railways (8,256 litre) and Roadways (14,218 litre per day). Over all 89.00% of milk is being utilized as fluid milk, 2.80% as Dahi, 1.60% as Khoa 1.60% Ghee/Butter, 1.50% as Ice-cream, Chhana 0.90% and rest for tea, sweetened milk etc.

**Key word :** Milk utilization, fluid milk, milk products.

India is predominantly an agriculture based economy where about 70% of population engaged in agriculture. The contribution of agriculture in national GDP is declining; however the contribution of live stock sector is increased. The major chunk of rural population consist of landless laborers, marginal and small farmers is engaged in livestock sector and this is the major resource for their livelihood in Ballia district of Eastern Uttar Pradesh. Today India is first in milk production the world but per capita availability of milk is low and return to the producers from the milk is less. Therefore present investigation was carried out to access various sources and the pattern of milk utilization in five different zones of Ballia city.

### MATERIALS AND METHODS

Ballia city was divided into five zones namely Central, Eastern, Western, Northern and Southern zones and a survey was conducted to study the sources of milk supply such as organized like Parag Dugdh Utpadak Sahkari Sangh Ballia, Kautiki Agro Product Pvt.Ltd. Indara, Mau, Sudha Co-operative Dairy Aara, Bihar & Amul Gujrat Co-operative Milk Marketing Federation Ltd. Anand, Gujrat and unorganized sector milk producers dairies of various sizes based on number of animal like small (<10), medium (10-15) and large (<50) milch cows included in dairies and milk vendors. The sources through which milk is transported to Ballia city from distant place was also divided like railway and roadways. A survey was conducted zone wise and every milk supplier was contacted for three days simultaneously and to study the milk utilization pattern

the quantities used in various products liked fluid milk, Dahi, khoa, Ghee/ butter, paneer, Chhana, ice-cream, tea, sweet milk and kulfi were surveyed and averages were calculated on the basis of three consecutive days.

### RESULTS AND DISCUSSION

The results of the survey showed that 1.05 lakhliters of milk/day was used in Ballia city, out of which 52.13%were supplied by organized sector and only 47.86% milk/day was supplied by the unorganized sector the contribution of milk producers dairies was 26.24%, However. India is the world leader in milk production and Punjab is the 2<sup>nd</sup> largest produceing state in India producing 10 % of country's milk (Pratibha Goyal *et.al* (2010).

**1. Milk Supply in Ballia City in liters :** Among the organized sector the Parag Dugdh Utpadak Sahkari Sangh was first (20,000 liters milk/day) and was followed by Sudha Co-Operative Dairy Bihar (16,000 liters), Kautiki Agro dairy Pvt. Ltd (12,000 liters), Amul dairy Gujarat (6,700litrs). The milk procured by organized sector in Ballia city was utilized as 27,4000 liters as fluid milk 12,500 liters in Butter, 65,000 liters in Ghee, 5,000 liters in flavoured milk and only 4,100 liters per day for making milk cake.

**2. Milk Supply by difference Sized Dairies Spread Over Whole Ballia City in liters :** The total milk supplied by unorganized sector particularly private dairies was 50,219 liters/day, out of which the contribution by large dairies was maximum followed by medium and small dairies. The central zone of Ballia

**Table-1** : Milk supply by organised sector in Ballia city in.

Agencies	Brand	Fluid milk	Milk used for butter	Milk used for ghee	Flavour Milk	Milk cake	Total
Parag Dugdh Utpadak Sahakari Sangh Jeerabasti, Ballia	Parag	10000	5000	2500	1500	1000	20000
Kautiki Agro Product Pvt. Ltd. Indara, Mau	Quality	6000	2500	1300	1200	1000	12000
Sudha Co-operative Dairy Aara, Bihar	Sudha	8500	3500	1500	1300	1200	16000
Amul Gujrat Co-operative Milk Marketing Federation Anand Co-operative Ltd, Gujrat	Amul	2100	1500	1200	1000	900	6700
Total		27400	12500	6500	5000	4100	54700

**Table-2** : Milk supply by small, medium and large sized dairies spread over whole ballia city in liters.

Zone	Small dairy		Medium dairy		Large dairy		Total
	Cows	Buffaloes	Cows	Buffaloes	Cows	Buffaloes	
Central	800	1200	1000	1450	1200	1725	7375
Eastern	700	1100	1000	1230	1100	1365	6495
Western	300	700	550	825	500	1150	4025
Northern	600	900	650	1100	700	1225	5175
Southern	400	900	525	1000	570	1280	4675
Total	7600	9330	10815	27745			

was city supply highest milk per day and followed by the eastern, northern, southern and western zone.

**3. Milk Supply of Various Railways Station in Ballia City in liters :** The overall milk transported by various railways terminals was 1.272 lakh/day, out of which through Ballia city terminal supplied 1,766 liters and was followed by Phephna cant (1,430 liters), Rasra (1,353 liters), Chilkahar (1,285 liters), Suremanpur (1,281 liters) and Sagarpali (1,133 liters) per day, respectively.

**Table-3** : Milk supply of various railways station in Ballia city.

Railway Station	1 <sup>st</sup> DAY	2 <sup>nd</sup> DAY	3 <sup>rd</sup> DAY	Average
Rasra	1200	1300	1560	1353.00
Chilkahar	1200	1300	1350	1285.00
Phephna Cant	1350	1425	1551	1430.00
Sagarpali	1050	1125	1225	1133.00
Ballia city	1500	1850	1950	1766.00
Suremanpur	1175	1200	1275	1281.00
Total	7275	7900	8911	8248.00

**4. Milk Supply of Various Roadways Station in Ballia City in liters :** The total milk transported by roadways were 14,218 liters per day. The highest milk was transported from Nagra (1,518 liters) and followed by Basdih, Chilkahar, Rasra, Bhimpura and Sikandarpur Supply same quantity, Maniar, Bariya, Chitbadagaw, Garwar and Rewati, respectively.

**Table-4:** Milk supply of various roadways station in Ballia city in liters.

Roadways Terminal	1 <sup>st</sup> DAY	2 <sup>nd</sup> DAY	3 <sup>rd</sup> DAY	Average
Rasra	1225	1350	1400	1325.00
Chilkahar	1135	1415	1450	1333.00
Chitbadagaw	1025	1225	1320	1198.00
Maniar	1175	1225	1450	1283.00
Nagra	1440	1500	1615	1518.00
Bhimpura	1200	1325	1375	1300.00
Sikandarpur	1225	1300	1375	1300.00
Basdih	1350	1425	1500	1425.00
Garwar	1100	1125	1225	1158.00
Rewati	1000	1105	1225	1110.00
Bariya	1225	1250	1330	1268.00
Total	13100	14287	15268	14218.00

### Utilization Pattern of Milk

Milk utilized by various ways Gautam *et al.* (2011) reported that from rural and urban areas of Northern Tripura districts in 2008, utilized milk as 80% milk powder, 66% fluid milk, 64% sweets, 36% used as ghee and 34% in curd in rural areas and 90% households consumed milk powder, 80% sweets, 70% liquid milk, 42% used as ghee and 40% consumed curd in urban areas.

**5. Utilization Pattern of Milk in Central Zone of Ballia City :** The first position of milk utilization in Ballia city was observed as Central zone utilized 23,550 liters milk per day. Out of 93.50% utilized as fluid milk, 2.25% in Dahi, 0.20% in Tea, in 0.25% in Sweetend milk, 0.75% in Khoa, 1.35% in Paneer, 0.75% in Ghee/butter, 0.50% in Chhana, 0.35% in Ice-cream, and 0.10% in Kulfi of ice-cream.

**Table-5:** Utilization pattern of milk in central zone of Ballia city.

S. No.	Products	Amt. of milk in liters	Percent
1.	Fluid milk	22019	93.50
2.	Dahi	530	2.25
3.	Tea	47	0.20
4.	Sweetend milk	59	0.25
5.	Khoa	177	0.75
6.	Paneer	320	1.35
7.	Ghee/Butter	177	0.75
8.	Chhana	117	0.50
9.	Ice-cream	81	0.35
10.	Kulfi	23	0.10
	<b>Total</b>	<b>23550</b>	<b>100.00</b>

**6. Utilization Pattern of Milk in Eastern Zone of Ballia City :** In Eastern zone 21,983 liters milk per day. Out of total 19,883 liters as fluid milk utilization was accounted 90.45% and followed by Ghee/Butter (2.25%), Dahi (2.05%), Ice-cream (1.30%), Chhana (1.25%), Paneer (1.00%), Tea (0.75%), Khoa (0.45%) and 0.25% Sweetend milk, respectively.

**Table-6:** Utilization pattern of milk in eastern zone of Ballia city

S. No.	Products	Amt. of milk in liters	Percent
1.	Fluid milk	19883	90.45
2.	Dahi	451	2.05
3.	Tea	165	0.75
4.	Sweetend milk	55	0.25
5.	Khoa	99	0.45
6.	Paneer	220	1.00
7.	Ghee/Butter	495	2.25
8.	Chhana	275	1.25
9.	Ice-cream	285	1.30
10.	Kulfi	55	0.25
	<b>Total</b>	<b>21983</b>	<b>100.00</b>

**7. Utilization Pattern of Milk in Western Zone of Ballia City :** In western zone 18,906 liters of milk was utilized. Out of which 83.15% was utilized as fluid milk, and 4.50% as Dahi, 2.75% in Ghee/Butter, 2.74% as Ice-cream, 2.25% as paneer, 1.50% Kulfi 1.25% in Chhana, 0.75% Tea, 0.55% Sweetened milk and 0.25% Khoa, respectively.

**Table-7:** Utilization pattern of milk in western zone of Ballia city.

S. No.	Products	Amt. of milk in liters	Percent
1.	Fluid milk	15,720	83.15
2.	Dahi	850	4.50
3.	Tea	142	0.75
4.	Sweetend milk	104	0.55
5.	Khoa	47	0.25
6.	Paneer	483	2.25
7.	Ghee/Butter	520	2.75

**8. Utilization Pattern of Milk in Northern Zone of Ballia City :** In this zone, 20,800 liters of milk was utilized as milk and various products. And milk was consumed as 85.15% in fluid milk, 3.20% in Dahi, 2.65% in Ice-cream, 2.25% in Paneer, 2.00% in Khulfi, 1.35% in Ghee/Butter, 1.30% in Khoa, 1.10% in Chhana, 0.75% Tea 0.25% in sweetened milk, respectively.

**Table-8:** Utilization pattern of milk in northern zone of Ballia city.

S. No.	Products	Amt. of milk in liters	Percent
1.	Fluid milk	17711	85.15
2.	Dahi	666	3.20
3.	Tea	156	0.75
4.	Sweetend milk	52	0.25
5.	Khoa	270	1.30
6.	Paneer	468	2.25
7.	Ghee/Butter	281	1.35
8.	Chhana	228	1.10
9.	Ice-cream	551	2.65
10.	Kulfi	416	2.00
	<b>Total</b>	<b>20800</b>	<b>100.00</b>

**9. Utilization Pattern of Milk in Southern Zone of Ballia City :** In southern zone a total of 19,680 liters of milk was utilized which accounted 91.52% of fluid milk per day, 2.15% as Dahi and as ice-cream 1.50%, 1.25% ghee/butter, 1.20% as Paneer, 0.75% as of ice-cream, 0.62% Chhana, 0.56% Tea, Khoa 0.25% and 0.20% as sweetened milk manufacturing.

**Table-9:** Utilization pattern of milk in southern zone of Ballia city.

S. No.	Products	Amt. of milk in liters	Percent
1.	Fluid milk	18011	91.52
2.	Dahi	423	2.15
3.	Tea	110	0.56
4.	Sweetend milk	39	0.20
5.	Khoa	49	0.25
6.	Paneer	236	1.20
7.	Ghee/Butter	246	1.25
8.	Chhana	123	0.62
9.	Ice-cream	295	1.50
10.	Kulfi	148	0.75
	Total	19680	100.00

## CONCLUSION

During the survey it was observed that 104,919 liters of milk per day was supplied in Ballia city daily. Out of which only 47.86% was supplied by the organized sector and rest account 52.14% milk supplied by unorganized sector. Among the unorganised sectors higher milk supplied by large sized dairies. In total utilization pattern, about 89.00% of milk was utilized as

fluid milk and rest accounted about 11.00% of milk was consumed as various milk products. Comparatively 2.7% as Dahi, 0.70% as Tea, 0.40% as sweetened milk, 0.60% as Khoa, 1.6% as paneer, 1.6% as ghee/butter, 0.9% as Chhana, ice-cream 1.5% and 0.90% as Kulfi. The central zone utilized the maximum 7,375 liters of milk and minimum 4,025 liters of milk utilized in western zone per day.

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