

## AN ECONOMIC ANALYSIS OF AANCHAL MILK PLANT IN UDHAM SINGH NAGAR DISTRICT OF UTTARAKHAND

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### ABSTRACT

The study was conducted in Udham Singh Nagar Dugdh Utpadak Sahakari Sangh Limited, Khatima. It is a district level milk co-operative union registered under the brand name 'Aanchal'. Curd, Ghee, Butter and Paneer were the major milk products whose cost and returns were worked out. Descriptive statistical tools, costs and net returns and Garrett ranking were used for the study. The most important cost component of major milk products was procurement cost. Diversification in products and lack of advertisement were the major constraints observed in marketing of milk products. Customer market-oriented research is required to attract the consumers and use of advertising strategies to make consumers aware about the milk products.

**Key words:** *Economics, AANCHAL Milk Plant, Descriptive statistical tools, Customer market-oriented research, Advertising strategies.*

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Uttarakhand Co-operative Dairy Federation Limited came into existence as a successor body to Uttar Pradesh Co-operative Dairy Federation Limited after the formation of Uttarakhand. It covers all the 13 districts of the state through its 11 District Level Member Co-operative Milk Unions among which one is Udham Singh Nagar Dugdh Utpadak Sahakari Sangh Ltd. located in Khatima. It is a district level milk co-operative union registered under

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the brand name 'Aanchal'. The dairy plant has a handling capacity of 5000 liters per day along with three chilling centres of 40000 liters per day capacity. Number of milk products are being established in the plant namely flavored milk, full cream milk, toned milk, standard milk, butter, ghee, curd, paneer, skimmed milk etc. Dairy has a lot of potential to improve rural income and nutrition hence, is a very critical area for investment. In spite of, its better quality and hygiene value it is not able to attract consumers due to its inefficient marketing strategies. Therefore, a study was conducted in Udham Singh Nagar Dugdh Utpadak Sahakari Sangh Ltd. to estimate the cost and returns of major milk products and to find out the constraints faced in marketing of milk products.

## **MATERIALS AND METHODS**

There is only one Uttarakhand Co-operative Dairy Federation plant i.e., Udham Singh Nagar Dugdh Utpadak Sahakari Sangh Ltd. (AANCHAL), in Udham Singh Nagar district. Therefore, the study was confined to Udham Singh Nagar Dugdh Utpadak Sahakari Sangh Ltd. The primary data was collected using well-structured survey schedule and the secondary data was collected from various published and un-published sources such as annual reports and official records of the dairy plant. To identify the marketing constraints, information was collected from the retail outlets of Khatima. The analytical framework adopted for the attainment of objectives is as follows:

### ***Estimation of Cost and Returns of Major Milk Products of Aanchal Milk Plant***

The major milk products identified after the survey were Curd, Butter, Ghee and Paneer. Following method was adopted to work out cost and returns:

**Total Fixed Cost:** It included depreciation on building, machinery, equipment and interest on fixed capital etc.

**Total Variable cost:** It comprised of raw material cost, packaging & marketing cost, electricity, telephone charges, transport charges and other miscellaneous costs.

Thus,

**Total cost** = Total Fixed Cost + Total Variable Cost

**Gross Returns:** The receipts from milk products were treated as returns. It included value of milk products produced, interest received and dividend realized from the share of other societies etc.

**Net Returns** = Gross returns – Total cost

### ***Constraints faced in marketing of milk products***

To accomplish this objective, Garrett ranking technique was used. The samples were asked to rank the given constraints related to marketing of milk products. Thereafter, ranks given by them were converted into the per cent position by using the following formula which were later again converted to scores by referring to table given by Garrett and Woodworth (1969).

$$\text{Percent position} = \frac{100 * (R_{ij} - 0.5)}{N_j}$$

Where,

$R_{ij}$  = Rank given to  $i^{\text{th}}$  constraint by  $j^{\text{th}}$  individual

$N_j$  = Number of constraints ranked by  $j^{\text{th}}$  individual

Later, for each constraint the scores of individual respondents were added and divided by the total number of respondents from whom scores were collected. The mean scores for the factors were arranged in descending order and thus constraints were ranked accordingly.

## **RESULTS AND DISCUSSION**

***Estimation of cost and returns of major milk products of Aanchal milk plant:*** The amount of milk procured in the year 2018-19 was 18605318.60 kg with an average of 50973.47 kg milk procured per day. The total milk products produced in the dairy co-operative plant were 12043726.4 kg. Component wise cost per kg of major milk products is presented in Table 1.

**Curd production:** Curd is the one of the important dairy products produced in the Khatima dairy plant. It is sold at various places within the district at various milk parlors and retail shops. The most important cost component in curd production was the raw material cost which accounted for Rs. 19.29 per kg which was about 41.4 percent of the total cost. The total variable cost per kg for curd production was Rs. 42.10 and the total fixed cost being Rs. 4.52 per kg. The net returns obtained from total curd production in Khatima dairy plant for the year 2018-19 is Rs. 3.36 per kg which accounts for 3.2 percent of the gross returns of the dairy plant.

**Butter production:** The raw material cost in butter production accounted for Rs. 122.69 per kg which is about 41.38 percent of total cost and packaging and marketing cost accounted for Rs. 15.38 per kg. The variable cost accounted for Rs. 267.69 per kg which was about 90.30 percent of the total cost and total fixed cost was Rs. 28.75 per kg which was about 9.70 percent of the total cost. The net returns per kg obtained from butter production were Rs. 113.55 accounting for 3 percent of the gross returns of the dairy plant.

**Ghee production:** The agent price fixed for one kg of ghee is Rs. 440 and consumer price are Rs. 470 for one kg. In ghee production raw material cost accounted for 40.87 percent of total cost being Rs. 147.58 per kg and packaging and marketing cost accounted for 8.25 percent of total cost. The net returns obtained from ghee production were Rs. 108.99 per kg which accounted for 2.6 percent of the gross returns of the dairy plant.

**Paneer production:** The total amount of paneer prepared in Khatima plant in 2018-19 was 97932.2 kg. The total variable cost in paneer production accounted to Rs. 268.76 per kg and total fixed cost accounted to Rs. 32.56 per kg. The raw material cost accounted for Rs. 123.18 per kg which was about 40.88 percent of the total cost. The net returns obtained from paneer production were Rs. 23.67 per kg.

**Table 1: Component wise cost of production and returns from the major milk products**

(Rs. /kg)

| Cost Components | Curd production | Butter production | Paneer production | Ghee production |
|-----------------|-----------------|-------------------|-------------------|-----------------|
| Variable cost   |                 |                   |                   |                 |

|                            |              |               |               |               |
|----------------------------|--------------|---------------|---------------|---------------|
| Raw material cost          | 19.29        | 122.69        | 123.18        | 147.58        |
| Transportation             | 10.31        | 65.57         | 65.83         | 78.87         |
| Electricity/ Refrigeration | 1.88         | 11.98         | 12.03         | 14.41         |
| Fuel                       | 2.03         | 12.91         | 12.96         | 15.53         |
| Water                      | 0.07         | 0.5           | 0.51          | 0.61          |
| Labor Charges              | 2.01         | 12.81         | 12.86         | 15.41         |
| Repair and maintenance     | 3.89         | 24.77         | 24.87         | 29.8          |
| Packaging and marketing    | 2.41         | 15.38         | 15.44         | 18.5          |
| Other miscellaneous test   | 0.16         | 1.04          | 1.04          | 1.25          |
| <b>Total variable cost</b> | <b>42.1</b>  | <b>267.69</b> | <b>268.76</b> | <b>322</b>    |
| <b>Fixed cost</b>          |              |               |               |               |
| Depreciation               | 2.89         | 18.38         | 18.46         | 22.11         |
| Interest                   | 1.63         | 10.37         | 10.41         | 12.47         |
| Others                     | 0.57         | 3.67          | 3.69          | 4.42          |
| <b>Total fixed cost</b>    | <b>4.52</b>  | <b>28.75</b>  | <b>32.56</b>  | <b>39.01</b>  |
| <b>Total cost</b>          | <b>46.52</b> | <b>296.44</b> | <b>301.32</b> | <b>361.01</b> |
| Gross returns              | 50           | 410           | 325           | 470           |
| <b>Net returns</b>         | <b>3.36</b>  | <b>113.55</b> | <b>23.67</b>  | <b>108.99</b> |

**Constraints faced in marketing of milk products:** The identification and ranking of constraints faced in marketing of milk products was done at retail outlet level. Here, Table 2 represents identification and ranking of constraints faced in marketing of milk products at retail outlet level.

**Table 2: Identification and ranking of constraints faced in marketing of milk products at retail outlet level**

| Constraints                          | Score | Rank |
|--------------------------------------|-------|------|
| Insufficient storage facilities      | 70    | 3    |
| Shortage of electricity              | 36    | 14   |
| Lack of transportation facilities    | 29    | 17   |
| Lack of advertisement                | 71    | 2    |
| Consumer's preference                | 65    | 5    |
| Involvement of intermediaries        | 61    | 6    |
| Fluctuation in prices                | 47    | 10   |
| Dissatisfaction with testing methods | 44    | 11   |
| Foul smell                           | 56    | 7    |
| Product quality                      | 40    | 12   |
| Lack of variety in products          | 76    | 1    |
| Insufficient quantity                | 33    | 16   |
| Lack of taste                        | 34    | 15   |
| Brand image                          | 68    | 4    |
| Packing quality                      | 39    | 13   |
| Losses in handling                   | 48    | 9    |
| Seasonal variations                  | 50    | 8    |
| Unhygienic products                  | 26    | 18   |

Lack of variety in products was reported as the major constraint in the marketing of milk products with the score of 76 which indicates that the plant needs to manufacture variety of products so as to increase the sale of products. The lack of advertisement was the second major constraint with the score of 71 and insufficient storage facilities as the third constraint with the score of 70. The other constraints reported were insufficient storage facilities, brand image,

consumers preference, involvement of intermediaries, foul smell, seasonal variations, losses in handling, fluctuation in prices with their scores being 70, 68, 65, 61, 56, 50,48, 47 respectively.

Although, unhygienic products and lack of transportation facilities were considered to be the minor constraints with the respective scores of 26 and 29.

As most of the dairy farmers in Uttarakhand are in the category of small and marginal farmers undertaking dairy activity at subsistence level. The economic analysis indicates varied nature of cost and returns for different milk products. Butter production being most profitable one (Rs 113.55 net return per kg) followed by Ghee production (Rs 108.99 net return). Least profitable products were observed paneer and curd. Analysis indicates still huge potential exists in the dairy sector as net return received from milk product marketing. People are still unaware about the benefits that they can avail from this sector.

Interventions are required to educate the milk producers about technicalities of the enterprise and for effectively implementing the policies devised for the dairy development of the state. In order to expand the sale of milk products, there is a need to provide diversification in the products and advertising strategies are to be used so as to make consumers aware about the product and its health benefits. These advertising and promotion techniques would build a brand image of the product and increase the demand of milk products in the market. Customer oriented market research should be employed to attract consumer.

## REFERENCES

- Sharma, M. L., Saxena, R., Mahato, T., & Das, D. (2007). Potential and Prospects of Dairy Business in Uttarakhand: A Case Study of Uttaranchal Cooperative Dairy Federation Limited. *Agricultural Economics Research Review*, 20, 489-502p.
- Rangasamy, N. (2006). Economic analysis of milk and milk products marketing by cooperative and private sector dairy plants in Tamil Nadu. Thesis, Ph.D. (Dairy Economics), National Dairy Research Institute, Karnal, 35-132p.

Ray, Jui. (2008). Economics of manufacturing indigenous milk products in west Tripura district. Thesis, Master of Science in Dairying (Dairy Economics), National Dairy Research Institute, Karnal, 20-61p.

Singh, Narinderpal. (2001). Economics of production, marketing and processing of milk in Punjab. Thesis, Ph.D. (Agricultural Economics), Punjab Agricultural University, Ludhiana, 40-124p.

T.S.Bhogal, S. A. (2013). Economics of Production And Marketing of Milk Products in Cooperative Sector. *Asian Journal Dairy and Food Research*, 32(3), 195-198.

