COMPANY PROFILE

CHAPTER - III

COMPANY PROFILE

Belgaum District is North Western Border District of Karnataka, 512 km away from Bangalore a capital city of Karnataka and it is on the border of Maharashtra and Goa States. The geographical area of Belgaum District is 13415 Sq km with an 1138 inhabited villages. The rain fall in a District is 594.90 mm. Belgaum is specially known for production of Kunda.

3.1 VISION, MISSION AND QUALITY POLICY OF THE BEMUL:

VISION STATEMENT:

Belgaum milk union in committed to conserve energy and maintain in the areas of plants by educating all the connected staff and thereby gaining competitive edge by reducing operation cost control, increasing market share of milk and milk products for prosperity of producers, consumers and employee for mutual help for nation and organizations.

MISSION STATEMENT:

At BEMUL we Endeavor to satisfy the taste and nutritional requirements of the customers. Through excellence in marketing by BEMUL committed team, BEMUL committed to offering quality products that provide best value for product.

QUALITY POLICY:

To ensure pure, hygienic milk and milk products through continuous improvement of quality standards.

VALUES :

- Cleanliness
- Total quality maintenance
- Discipline and time management
- Mutual co-operation and respect to each other.
- Transparency
- Honesty, Hard work and sincerity

3.2 AIMS AND OBJECTIVES OF BEMUL:

- To build village level institution in co-operative sector to manage dairy activities.
- To ensure provision of milk production inputs processing facilities and dissemination of knowhow.
- Providing hygienic and good quality of milk to the consumers.
- To build the economic strength of the milk products in villages by providing assured and remunerative market.
- To eliminate middlemen's in the business so that the milk products receive there appropriate share of bread.
- To educate the villages about the adulteration of milk and its harmful effect on the body.
- To see that every citizen becomes healthy by consuming good quality of milk.
- To make villagers self-viable and build self image by providing opportunity for self employed at village level, preventing migration to urban areas, introducing cash economy and opportunity for stead income.

3.3 FUNCTIONS OF BEMUL

- The main function of is to procure milk from villagers and pay them the right price.
- To educate the villagers about milk and its quality
- To make 'Nandini' as a part of daily life.
- To provide good quality of cattle feed, fodder, veterinary in properly and in an efficient manner.
- To see that the DCS's are carrying out their activities properly and in an efficient manner.
- To see that the milk is brought from DCS's to the chilling centers in the prescribed time.

- To look the account of the DCS's supervised the purchase process and market the milk and milk products.

3.4 NATURE OF BEMUL:

Organization in general means the sequential or logical arrangements of elements, organizational management terms refer to the group of individuals into a unified and common effort. The organization may be formal or informal organization. Here we are referring the Belgaum Milk Union Limited.

Belgaum dairy was established in the year 1972 under KCS act by Karnataka Government, later on it was taken over by KMF in the year 1985 and it was transferred to Belgaum Milk Union on 1st Step 1988.

The BEMUL is union member of KMF and registered on 24th Dec 1985. It is a co-operative organization. It covers entire Belgaum district along with neighboring state. It is situated at North West part of Karnataka bordering Maharashtra and Goa BEMUL was covered under the Operation flood III programme and new Dairy of 60 LTPD capacity was established at a cost of 5.53 crores with a share capital of Rs 100 lacks. In this Rs 50 lacks belong to "A" grade shares and Rs 50 Lacks belong to "B" grade shares. The union is having the authorized capital of Rs. 10 crores. During the year it collected the Rs.11.73 lakhs and at the end of the year total share capital was Rs 161 Lacks. The union is having the chilling center at Gokak with capacity of 20,000 liters. It is also having bulk coolers with capacity of 6,000 liters at Ramdurg and with 8,500 liters at Athani.

At present 456 Dairy co-operative are registered and among these 330 societies are functioning. The total number of members as on 2008-09 was 69,172.At the end of the year 2008-09, the union is having the 43 milk procurement routs and 26 milk distribution routs. From functioning societies total average procurement is around 63,741 LTPD with a strong sale of 62,079 LTPD. BEMUL has strong base of the technical input services like veterinary health coverage under fodder supply centers. Immediate (Urgent) care facility is being provided to various farmer members of the society. Totally 142 AI

(Artificial Insemination) center are functioning. 1, 17,564 AI are done and through which 2,310 calves were born. The BEMUL is providing e cattle feed, fodder and mineral mixer at reasonable prices at village level. In current year 5,813 metric tones of cattle feed, 2, 31,000 metric tones fodder (root Slips), 27.34 metric tone of mineral mixture and 5,043 Kgs of seeds were supplied to farmers.

Different types of methods are used to educate the farmers regarding cross breed, cow and rearing and milk production, varieties of training programmers are being arranged to DCS, daily advertising campaigns are conducted to promote sales. The sales manager routinely conducts meetings and discuss with his team regarding sales activities is demand and supply of the products. The marketing supervisors are appointed to manage and supervise sales force for proper distribution of milk and milk products.

3.5 FACTORS BEHIND THE ESTABLISHMENT OF BEMUL:

In 1946 December 14 one co-operative society was established in Anand. This society earned more popularity within a year. This society was helpful not only to farmers but also city people.

In June 1974 an integrated project was launched in Karnataka to restructure and reorganize the dairy industry. The co-operative principle laid foundation for new direction in dairy development. The first World Bank aided development projected was established in 1975. Starting this project covered only 8 Districts of Karnataka.

At the end of September 1984, the World Bank aided project of 51 crores was ended and the dairy development activity continued. These activities were extended to cover the entire Karnataka state. These dairy development activities were continued in the second phases from April 1984.

On the 1st February 1985 the KMF was came in to the existence for the help of national dairy development board in Karnataka. This background on 24th December 1985 started BEMUL with the help of Karnataka Milk Federation Bangalore.

BEMUL is functioning in the milk rich District Belgaum. Its area includes whole District of Belgaum, where it is selling milk and milk products in all major towns in Belgaum District, Goa and parts of Maharashtra like Sawantwadi.

3.6 MILE STONES OF THE ORGANIZATION (KMF):

- 1955 First dairy in Karnataka set up to Kodagu District.
- 1965 biggest dairy in Karnataka with 1.5 lakhs liters per day required milk-processing factory set up at Bangalore.
- 1974 Karnataka dairy development corporation (KDDC) is established.
- 1975 first registration of milk producer's co-operative society.
- 1976 first registration of union.
- 1980 Karnataka milk products limited established.
- 1983 corporate brand name "NANDINI" given.
- 1984 bull mother farm and frozen semen bank Commissioned.
- 1984 KDDC transformed to KMF.
- 1985 remaining government dairies transformed to KMF.
- 1988 dairies at Bangalore, Gejjalgere, Dharwad, Belgaum and Mangalore transferred to District milk unions.
- 1991 chilling and processing plants at Bijapur, Gulbarga, Bellary, Shimoga and Kolar transferred to District milk union.
- 1992 commercial production and marketing of NANDINI flavored milk launched.
- 1993 milk procurement on a single day cross million kg levels in December 1986 and average milk procurement per day for the year cross million kg levels.
- 1994 liquid milk sale crosses million liters per day.
- 1995 varieties of new NANDINI products like Nandini panner, burfi, khava and sweets and also curds launched.
- 1996 foundation stores laid for cattle feed plant at Hassan.
- 2009 purchasing new machinery for production of Mysore Pak.

3.7 DEVELOPMENT ACTIVITIES:

- The unit is conducting training program for the purpose of improvement in cattle feeding.
- It is helping milk producers and milk societies by giving them training in its own expenses.
- It is provides free aid of the hospital to workers.
- The unit is providing free subsidy for 2 months.

One of the core functions is procurement of milk, processing it and marketing milk and milk products. Bemul markets its products under the brand name Nandini and in earlier along with Nandini, the brand shubham is also used by it for sale of milk which contains 6.0% of Fat and 9.0% of SNF.

Table 3.1
Area Covered

Sl No	Items	
1	District Covered	Belgaum
2	Geographical Area (22.sq.km)	134
3	Inhabited Villages	1,138
4	Total Population (000)	3,584
5	Rural Population (000)	2,742
6	Rain Fall (MMS) Actuated 1995	701
7	Cattle Population (000)	1,091
	Including buffaloes	15
8	Cross Bred Cattle (000)	25
9	SHT team positioned (Year)	Oct 1983

Source : Collected from official records of BEMUL.

Table 3.2
Year-wise DCS Registered and Functioning

Year	DCS Registered	DCS Functioning	% of DCS Functioning to Registered
1999-00	504	342	67.85
2000-01	458	334	72.92
2001-02	455	321	70.55
2002-03	437	310	70.94
2003-04	443	317	71.56
2004-05	434	325	74.88
2005-06	442	318	71.95
2006-07	462	318	68.83
2007-08	443	324	73.14
2008-09	456	330	72.34

Source : Collected from official records of BEMUL for related years.

Table 3.2 reveals that over a period of 10 years, there is a fluctuation in year wise District Co-operatives (DCS) registered and functioning.

At the initial year 1999-2000, there are 342 DCS were functioning out of 504 registered DCS which is 67.85% of DCS functioning to registered.

In the year 2008-09, there are 330 DSC were functioning out of 456 registered DCS which is 72.34% of DCS functioning to registered.

Table 3.3
Year-wise Total Members of BEMUL

Year	SC People	ST People	Women	Others	Total Members
1999-00	3,574	1,961	7,871	43,421	56,827
2000-01	3,533	1,980	8,313	43,988	57,764
2001-02	3,501	1,985	8,716	43,121	57,323
2002-03	3,550	2,014	9,423	43,210	58,197
2003-04	2,523	2,356	13,468	46,520	64,867
2004-05	4,620	2,503	14,801	44,695	66,619
2005-06	4,690	2,553	15,834	45,182	68,259
2006-07	4,819	2,656	16,996	45,820	70,291
2007-08	4,720	2,586	17,082	43,237	67,625
2008-09	5,170	3,052	24,240	36,710	69,172

Source : Collected from official records of BEMUL.

Table 3.3 reflects that the over a period of 10 years, there is a fluctuating trend of total number of members of BEMUL.

At the initial year 1999-2000, total numbers of members were 56,827 and where as at the end of the year 2009-08, it was increases to 69,172.

Table 3.4
Milk Procurement Routes of BEMUL

Sl.No.	Routes	Sl. No.	Routes
1	Halashi	23	Godachi
2	Kodachwad	24	Katakol
3	Katridaddi	25	Shabari
4	TS Halli	26	Kamakeri
5	Sanikoppa	27	Munavalli
6	Iddalahonda	28	Athani-I
7	Bailur	29	Athani-II
8	Muragod	30	Athani-III
9	Jamboti	31	Athani-IV
10	Nidasosi	32	Bekkeri - I
11	Gokak - I	33	Bekkeri - II
12	Gokak - II	34	Kerur - I
13	Gokak-III	35	Kerur - II
14	Gokak-IV	36	Aladakatti
15	Gokak-V	37	Itagi BMC
16	Gokak-VI	38	Anigol BMC
17	Gokak-VII	39	Diggewadi BMC
18	Gokak- VIII	40	Khanatti BMC
19	Gokak- IX	41	Belawadi- I
20	Gokak-X	42	Belawadi -II
21	Gokak-XI	43	Belawadi -III
22	Surebhan		

Source: Collected from official records of BEMUL.

Table 3.4 shows the milk procurement routes of BEMUL. In the year 2008-09 it has 43 milk procurement routs. Highest quantity of milk is procured from Gokak and Athani, since, Gokak has 9 Procurement routes and Athani has 4 routes.

Table 3.5
Milk Distribution Routes of BEMUL

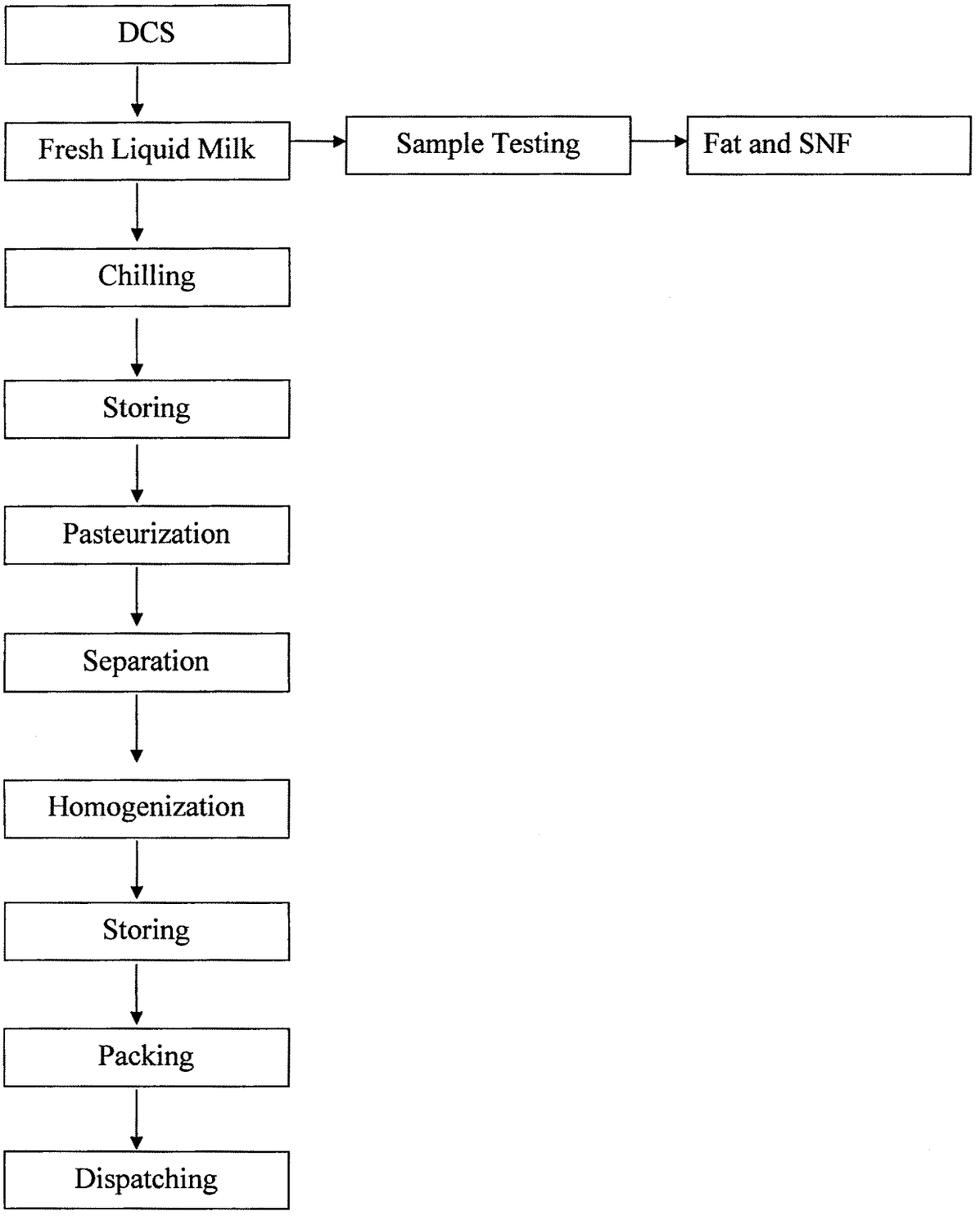
Sl. No	Routes	Sl. No	Routes
1	Belgaum-I	14	Vasco - I
2	Belgaum-II	15	Vasco - II
3	Belgaum-III	16	Madagon
4	Belgaum-IV	17	Savarda
5	Belgaum Auto (3 Autos)	18	Concon
6	Sulebhavi	19	Goa X
7	Military Dairy	20	Ponda – Madagaon Goa – V
8	Belgaum – V TCD	21	(AVG)
9	Gokak	22	Panjim Shivolim
10	Raibag	23	Panaji
11	Bhailhongal	24	Ponda / Tisk
12	T.S. Halli	25	Mad / Cafem
13	Ramnagar (Londa)	26	Bicholium Through TCD

Source: Collected from official records of BEMUL.

Table 3.5 shows milk distribution routes of BEMUL. In the year 2008-09 it has 26 milk distribution routes. Both Belgaum and Goa has 5 distribution routes.

3.8 Work Process at BEMUL :

Chart 3.1
Work Flow Model



Milk Buying Method in BEMUL:

There are various milk buying methods are employed like payment according to the weight or volume (also known as flat rate), payment according to the fat content of milk (known as straight fat method of payment), payment according to the use made of milk (mainly for milk products), payment of premiums especially for market milk based on quality of milk as measured by sediment test, flavored score, bacterial count or Methylene Blue Reduction time and also payment according to the cost of production.

Like other dairy the BEMUL has evolved an arbitrary system of milk pricing which seems to have no relation to the actual cost of milk production BEMUL have a differential pricing system for flush and lean months based on weight and volume and the fat and SNF contents of milk, with the provision for the payment of a premium for a higher fat & SNF content than the specified standard. BEMUL purchases milk by and large on a per kilo fat basis at different prices for different seasons.

The minimum standards prescribed by PFA (1970) rules for cow milk are 3.0 to 4.0 percent Fat & 8.5 to 9.0 percent Solids Non-Fat (SNF) while those for buffalo milk are 5.0 to 6.0 percent Fat and 9.0 percent SNF throughout the country with a view to encouraging milk production through high yielding indigenous and cross-bred cows, it is essential to adopt a pricing policy which would provide an adequate incentive to adopt a pricing policy which would provide a adequate incentive for production of cow-milk. In this context, the National Dairy Development Board has suggested the two-axis milk pricing policy such a policy ensures a payment for milk on its compositional quality evaluated rationally on its Fat and Solid Non-Fat components. This would discourage adulteration of buffalo milk & at the same time ensure a common pricing approach to milk and buffalo milks. The overall pricing policy for milk products should encourage efficiency of production, minimization of costs quality of product. The BEMUL try to create the feeling

that the price of producers milk is not predetermined unite rally at a fixed rate but varies rather with season and quality.

Milk Procurement Method in BEMUL:

In almost developed dairying countries, production of milk is confined to rural areas, while demand is mostly urban in nature. Hence, the milk has to be collected and transported from production point to the milk shed areas for processing and distributed points in cities.

The BEMUL follows the two types of milk procurement method such as by co-operative societies and by co-operative societies to milk collection cum chilling centers/depos to dairy.

1. Milk procurement from the co-operative societies:

The BEMUL directly receives the raw milk collected by District Co-operative societies exited at nearby villages. These societies are formed by group of member farmers.

2. Milk Collection Cum- Chilling Centre / Depots:

Some District co-operative societies of BEMUL are existed at distance place. The raw milk collected from such societies is to be supplying to the processing dairy. During this period, there may be a possibility of loss of quality of milk or it may destroy completely. This is due to containing of micro- organisms in milk when drawn from the udder. Their number will increase during subsequent handling. The common milk micronisms grow best between 20 and 40 degree Celsius. Bacterial growth is invariably accompanied by deterioration in milk quality due to development of off flavors, acidity etc.

Hence, for this purpose, the chilling centers are established. At present the BEMUL is having three chilling centers at Gokak, Athani and Ramdurg. In these chilling centers, the milk is to be preserved by prompt cooling to a low temperature of 4 degree Celsius and also held this temperature till dispatch to the processing dairy.

Transportation:

In BEMUL the milk has to be regularly collected and transported twice a day (Morning and evening) by using milk van hired.

Receiving Milk:

In BEMUL milk reception should be so planned and the equipment so chosen that intake operations are expedited. Delays permit deterioration of milk waiting dumping, increases labour costs and may increase the operation cost of can washer. In BEMUL the deliveries of milk should follow schedule by receiving the milk during schedule period, the BEMUL ensuring no interrupted operations and employees in all sections are fully occupied.

The following are the milk receptions operation in BEMUL.

1. Unloading:

In BEMUL the milk is to be received from large road tankers. The tanker outlet must be connected to sanitary piping. The milk may be removed by a milk pump situated at a lower level than the tanker, or a compressed air line may be connected to the top of the tankers and the milk forced out by air pressure. Washing and sanitation of the tanker should follow immediately after emptying is complete. The measurement of milk delivered by tankers can be done either by using a weight-bridge or flow meter.

2. Grading:

In BEMUL the classification of milk is done on the basic of quality for price fixing purposes. The quality of processed milk and finished milk products are depend on quality of raw-milk. In BEMUL, for grading purpose the organoleptic (sensory) tests. Such as those for smell (odour) taste appearance and touch, acidity, sediment etc., are conducted. It is also included in platform test. This test is conducted to check the quality of the incoming milk on the receiving platform, so as to make a quick decision regarding its acceptance / rejection. They are performed on each tanker of milk with the object of

detecting milk of inferior or doubtful quality, so as to prevent it being mixed with high grade milk

The various platform tests are given below:

1. Smell (odour):

This furnishes an excellent indication of the organoleptic quality of milk. It can be ascertained very quickly (just a few seconds). The smell will be representative of that in the can / tanker. The top of the milk in the can may simultaneously be noted for smell. By replacing the lid and shaking the test may be repeated. An experienced milk grader with a trained nose usually relies to a great extent in the acceptance / rejection of the intake milk on the odour test alone. The milk should be free from off-favours.

2. Extraneous matter appearances:

This test is conducted by the chemist. He regularly observes the milk in each can after the odour test has been made and notes any floating extraneous matter, off-colour, partially churned milk. The milk should be normal in color, free from churned fat globules and reasonably free from any floating extraneous materials like dust flies etc. which leads to spoilage of milk.

3. Temperature:

The temperature at which is delivered is often an indication of its quality. A daily check on the temperature of milk is helpful in grading the milk on receiving platform. With practice, the grader can tell with a high degree of accuracy whether or not the milk is sufficiently cold by touching the side of the can. A temperature of 5 degree Celsius or below is satisfactory.

4. Sediment:

The sediment test shows the visible foreign matter container in the milk for this purpose, a reliable sediment tester (such as off the bottom sediment tester) by which the work may be expedited should be selected. The intensity of discoloration and sediment on the pad will depend to some extent upon the

manner in which the test is often taken. The reveal of maximum sediment should be considered satisfactory. A low sediment is desirable.

5. Acidic Test:

As the payment to the supplier or District Co-operatives depend mainly on FAT and Solid Non Fat (SNF) content in the raw milk. The supplier may add sugar to the milk so as to increase the FAT and SNF content. Hence, to avoid this adulteration sugar test is done. For this test, 10 ml. of milk is taken in a test tube and 1 ml. of hydrochloric acid few crystals of resorcinol is mixed to it. The solution is shaken well and heated for 5 minutes. If solution turns organ colour, it is deemed that sugar is mixed in the milk.

6. Lactometer Reading:

This test is applied for detection of adulteration of milk with water. The addition of water to milk results in the lowering of its lactometer reading. It does not take much time.

Sampling:

The first pre-requisite of sampling is through mixing of the milk. This can be done with a plunger or stirrer (agitator) operated manually or mechanically in the tanker. With the farmer, a representative sample may also be taken after quick dumping of the milk in to the weigh tank, whereby it gets mixed so thoroughly that, a representative sample may be taken without further mixing. This representative milk is to be placed in empty bottle before milk id added. A wide mouthed glass bottle with a rubber stopper has found to be the most reliable and practical container for keeping composite samples of milk or cream.

The common preservative used in BEMUL is formalin. This is a 40% solution of formaldehyde. Being in liquid form, it is very convenient to handle. However, it interferes with the fat test.

The composite samples should be stored in a cool place away from direct sunlight. Each bottle should be properly labeled.

Weighing:

This is an essential step in accounting for milk receipts and disposal, making payment for milk etc. In BEMUL, the milk in tankers may be measured by volume with an agreed density. HERE another common alternative is to use a way bridge, the tanker being weighed once when it is full and again after when it has been emptied. However any mud or snow on the tanker should be washed off before weighing, adjustment to fuel or water should not be made between weightings and the driver and his accoutrements should be either on or off the vehicle on both occasions.

Testing:

Apart from initially accepted / rejected lots of milk, there are always some doubtful qualities. All the accepted lots have already been properly sampled, these together with samples of the remaining two categories, have to be tested in the quality control laboratory for the final verdict of acceptance / rejections. Further, a record of the chemical and bacteriological quality of all accepted milk has to be maintained for making payments etc.

The common quality control tests for milk are acidity test, ethanol (Alcohol) test, Alcohol Alizarin test, COB (Clot on Boiling) Dye-reduction test, SPC (Standard plate count), Lactometer, Fat and or SNF. Among these, the BEMUL is using COB (Clot-on-Boiling) quality control test for milk to determine the heat stability of milk.

Pre-Heating:

The incoming milk from the District Co-operative Societies (DCS) and from Chilling Centers is pre-heated in BEMUL or Dairy for efficient filtration / clarification. The pre-heating becomes essential as the incoming milk is cold as it has been chilled in 4 degrees Celsius in chilling center, as otherwise the flow of milk was hampered. As the temperature of milk increases, the viscosity decreases and more efficient filtration / clarification result. The usual

temperature of pre-heating is 35 to 40 degrees Celsius and the equipment used may be a plate or tabular heater.

This filtration / clarifications are made to improve the aesthetic quality of milk by removing visible foreign matter which is unsightly and may therefore cause consumer complaints.

In BEMUL, the filter is located in the raw milk line before the milk enters the pasteurizing plant. In other, the filter is located at a convenient point in the regeneration section where the temperature of milk may be 50 to 60 degrees Celsius.

Cooling of Raw Milk:

As soon as milk is received in the plant, it is chilled to 5 degrees Celsius or below and stored cool fill used to prevent deterioration in its bacteriological quality during the interim period.

The method used for cooling in BEMUL is surface cooler. In this method of cooling, the milk is distributed over the out surfaces of the cooling tubes from the top by means of a distributer pipe or through and flows down in a continuous thin stream. The cooling medium, mostly chilled water, is circulated in the opposite direction through the inside of the tubes. The cooled milk is received below in a receiving through, from which it is discharge by gravity or a pump. It may either an individual unit of clarinet type. The latter consists of two or more individual units, compactly assembled and enclosed in a cabinet. It is usually larger than those used on the form / chilling center.

Storage:

To maintain milk at low temperature, so as to prevent any deterioration in quality prior to processing product manufacture, to facilitate bulking of the raw milk supply, which will ensure uniform composition, to allow for uninterrupted operation during processing and bottling and to facilitate standardization of the milk, storage tanks are used in BEMUL for the storage of raw pasteurized or processed products in large volumes. Because of longer

period of holding storage tanks are among the most important items of equipment. They must be designed for ease in sanitization preferably by the circulation cleaning method. In addition, the tanks should be isolated or refrigerated, so that they can maintain the required temperature throughout the holding period. Agitation should be adequate for homogeneous mixing, but gentle enough to prevent churning and incorporation of air.

The horizontal and vertical type of storage facility is in BEMUL. Horizontal storage requires more floor space and less head space and vertical storage requires less floor space and more head space. Modern circulation cleaning methods have made very large vertical storage tanks.

Standardization:

The milk is to be standardized in BEMUL to make adjustment i.e. raising or lowering of the Fat and / or solid Non-Fat percentages of milk to a desired value so as to conform to the legal or other requirements prescribed. Milk is standardized by the addition of milk or cream with a higher or lower fat percentage than that of the material to be standardized .Some times the addition of skim milk will do. Then they find the relative amounts of the original material and the standardizing material to be mixed together to give a product with a desired fat content. This leads to easy calculation of exact amount of each which must be mixed together to give a certain weight of the finished product or the exact amount of standardizing material needed to use up a given weigh of milk or cream. A simple scheme, the Person's Square can be used to calculate there relative quantities of materials involved in a standardization problem. All measurements on these calculations are by weigh and not by the volume.

Pasteurization:

After testing the milk, it is to be pasteurized. In BEMUL High Temperature Short time (HTST) pasteurization method is followed. In this pasteurization process, every particle of milk is to be heated to 72.50 degree Celsius for 13 seconds and boiled in approved and properly operated

equipment. After pasteurization, the milk is immediately cooled to 4 degree Celsius temperature, means again it is to be chilled.

This pasteurization will help the dairy to render milk safe for human consumption by destruction of cent percent pathogenic micro organism and also it will improve the keeping quality of milk by destruction of almost all spoilage organisms (85 to 99 %).

Storage:

The last but not the process is the whole of production process is storage. The milk packed in 500ml and 1000ml pouches are arranged in the crates. Each cater contain 10 litters of milk. This caters are stored in cold room which has a temperature of about 5 degree Celsius or below.

Packaging:

After pasteurization, the milk is ready for sale; hence the packaging process will takes place. For this purpose, the dairy is using sachets (Plastic bags) which are flexible water proof bags. Sachets filling of milk usually follow a form / fill seal system. These sachets are formed from a reeled film over a shoulder and tube forming sealer. Their size is changed simply by pushing a button without stopping the machine. They are filled by time regulated value accurate within +3 ml or -3 ml / liter. Ultra violet light is used to sterilize inside of the film.

Distribution:

Distribution of milk is the last or the final stage of the market milk industry. The packed milk is to be reached to ultimate users only with the help of one middle men i.e. retailer who will sell directly to costumers. This elimination of wholesalers will help to increase the profit margin rate of member framers. According to the orders for milk received from the retailer, the milk is to be loaded and transported as per root wise. The BEMUL is distributing the market milk both in Karnataka and Goa. In Karnataka, the packed milk is distributed directly to retailers. In Goa, it has its sub dairy,

hence, instead of packed milk; bulk milk is to be transported. The packing and processing will conducted at Goa center. Again Goa center will receive the order for milk from local retailers and distribute the milk.

Due to the highly changeable temperature during the most seasons and the lack of refrigeration facilities at the average customer home in India, the BEMUL distribute the milk twice a day viz. morning and evening.

Sometimes, some portion of distributed milk remains unsold. Such unsold milk presents a problem of economic disposal. Under tropical conditions, as in India, the returned milk should not be sent again for sale as liquid milk since exposure to high temperature during its inward and outward journeys subject it to quality deterioration and hence they may cause consumer complaints. Such unsold milk is used in BEMUL for preparation of Dahi.

3.9 Product Profile:

Milk is the main product of BEMUL. Milk is an ideal food. It has high nutritive value It supplies body building proteins, bone forming minerals and health giving vitamins and furnishes energy giving lactose and milk fat. Besides supplying certain essential fatty acids and assimilable form, all these proteins makes an important food for pregnant mothers, growing children, adolescents, adults' invalid convalescents' patients alike.

Milk contains 83% to 84% of pure water and 16% to 17% solids. The solids include Fat and SNF (Solid Non Fat).

Fat content of milk (lipid) plays a significant role in nutritive value, flavour and physical proteins of milk and milk products. The most distinct role of which, fat plays a dairy products concerns flavour. This rich pleasing flavour of milk lipids is not duplicated by any other type of fat. Milk fat imparts a soft body, smooth texture and rich taste to dairy products. Lastly, milk lipids undoubtedly enhance the consumer acceptability of foods and also serve. The best interest of human nutrition through the incentive of eating what tastes good.

The SNF content of milk includes proteins, minerals and vitamins lactose. Milk proteins are containing all the essential amino-acids in fairly large quantity.

Practically all the mineral elements found in milk are essential for nutrition. Milk is an excellent source of calcium and phosphorus, both of which together with vitamin D, are essential for bone formation.

Milk is a good source of Vitamin A (provided the cow is fed sufficient green feed and fodder), Vitamin D (provided the cow is exposed to enough sunlight, thiamine, riboflavin etc).

The lactose (carbohydrate) content of milk helps to establish a mildly acidic reactions in the intestine (which checks the growth of photolytic bacteria) and facilitates assimilation.

The BEMUL is sells the following four types of Milk classified on the basis of Fat and SNF content:

	Fat	**SNF**
1. Toned Milk	3.1%	8.5%
2. Homogenized Milk	3.1%	8.5%
3. Standardized Milk	4.6%	8.5%
4. Full Cream Milk	6.1%	9.0%

1. Toned Milk:

Nandini Toned Fresh and Pure milk containing 3.0% fat and 8.5% SNF. Available in 500ml and 1litre packs.

It is milk obtained by the addition of water and skim milk powder to whole milk. In practice, whole buffalo milk is admired with reconstituted spray dried skim milk for its production.

Manufacturing Process:

The calculated amount of potable water is received in the pasteurizing vat/tank equipped with an agitator. The water is heated while the agitator kept

in motion to 38-43 degree Celsius. Then, the proportionate amount of spray dried skim milk is slowly added at the point of agitation and the mixture is thoroughly agitated till it dissolves completely. Calculated amount whole buffalo milk is now added and the mixture again agitated thoroughly till a homogeneous mixture is obtained. The mixture is pumped through a filter, pasteurized at 63 degree Celsius for 30 minutes, rapidly cooled in to 5 degree Celsius, packaged and kept at 5 degree Celsius or bellow unit distribution.

2. Homogenized Milk:

Nandini Homogenized Milk is pure milk which is homogenized and pasteurized. Consistent right through, it gives you more cups of tea or coffee and is easily digestible.

Homogenization is a process of forcing the milk through a homogenized with the object of sub-dividing the fat globules.

Manufacturing Process:

The milk should, at the time homogenization, be at temperature above the melting point of fat, viz, above 33 degree Celsius. This is because; the fat should be in the liquid state for proper sub-division. The enzyme lipase should be inactivated, preferably prior to homogenization or immediately afterwards. This can be achieved by heating the milk to a temperature of 55 degree Celsius or above. In routine practice, the milk is heated to 64-70 degree Celsius for homogenization.

The pre-heated (60 degree Celsius) milk is homogenized at 2500-3000 pressure in a single stage homogenizer. This causes sub-division of the original fat globules to less than two micro sizes (diameter), which is considered satisfactory.

3. Standardized Milk:

Standardized milk contains 4.5 % of Fat and 8.5 % of SNF. This is milk who's fat and/or solid-non-fat content have been adjusted to a certain pre-determined level. The standardization can be done by partially skimming the

fat in the milk with a cream separator or by admixture with fresh or reconstituted skim milk in proper proportion.

Standardized milk may be marketed as such or used for making certain products; in the latter case, the fat and SNF contents may be varied according the product requirement.

Uses of Standardized milk:

1. It ensures a milk of practically uniform and constant composition and nutritive to the consumer.
2. The surplus fat can be converted in to butter and ghee.
3. Possible to supply cheaper milk.
4. More easily digestible (because of reduced fat content)

4. Full Cream Milk:

Full Cream milk contains 6% Fat and 9 % SNF.A rich, creamier and tastier milk, Ideal for preparing home-made sweets & savories.

Cow's pure milk, UHT processed bacteria free in a tamper-proof tetra-fino pack which keeps this milk fresh for 60 days without refrigeration until opened. Available in 500ml Fino and in 200ml Bricks

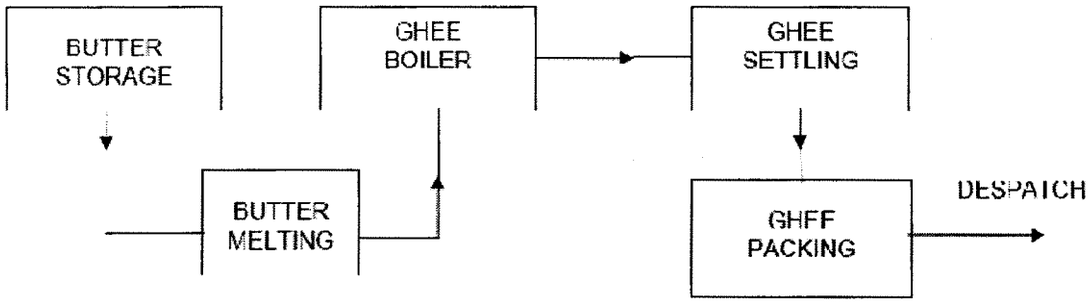
Milk Products:

The BEMUL manufactures and sells the following milk products:

1. Nandini Peda
2. Nandini Kunda
3. Nandini Ghee
4. Nandini Curd
5. Nandini Lassi
6. Nandini Butter Milk
7. Nandini Flavoured Milk

Chart 3.2 and 3.3

GHEE MAKING



PEDA & KUNDA

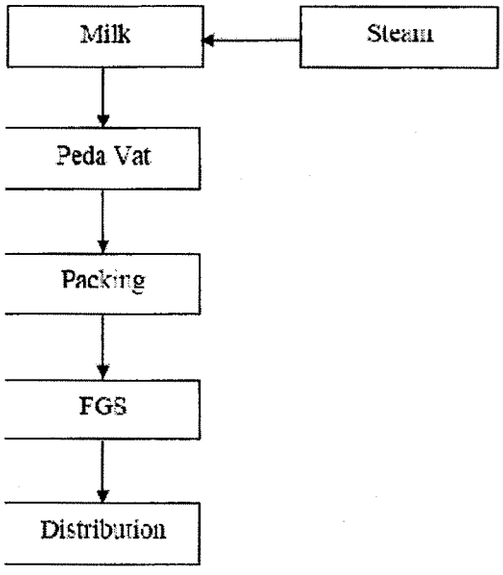
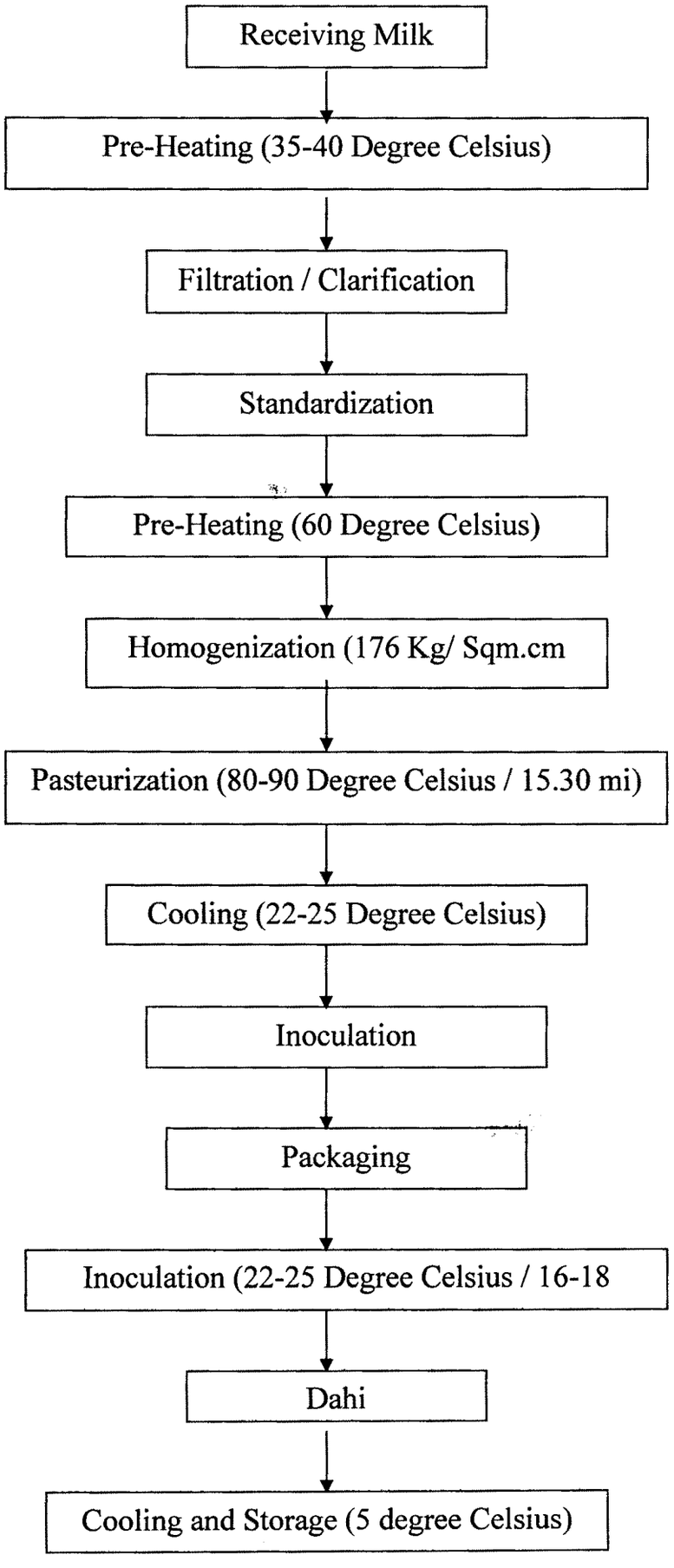


Chart 3.4 Curd



The BEMUL buys the following products from KMF and sells in its market.

1. Jamun Mix
2. Badam Powder
3. Sterilized Flavoured Milk
4. Flavoured Milk Tetra Pack
5. Coffee/ Choco Tetra

3.10 Brief history about competitors of BEMUL:

The Belgaumers taste new brands of milk every year. Right now/ till date there are 16 competitors in the market apart from Nandini. The 5 major brands which are very competitive for Nandini are Mayur, Mahalaxmi, Arokya, Sahyadri and Aditya.

Arokya Dairy:

It procures most of the milk from south side of the Belgaum. It procures 10,000 liters of milk every day. It is located near Desur a village of Belgaum district 10 kms away from city on NH4 A- they supply most of the procured milk to the city.

Mayur Dairy:

It procures milk mainly from Talukas in Belgaum district namely Chikkodi, Raibag & Athani they procure 25,000 liters per day. It is located in Kolhapur & the supply milk to Belgaum as well as Kolhapur district.

The standard milk of Mayur dairy contents a fat of 6.5% & 9% with this fat and S.N.F they supply nearly 10,000 LTPD.

Sahyadri milk:

The dairy is located in Shinnolli Taluka, Chandgad & district Kolhapur. This is 15 kms away from Belgaum city. It procures dairy about 30,000 LTPD which will be supplied in the Belgaum city as well as in the Maharashtra state.

Mahalaxmi Dairy:

The Mahalaxmi dairy plant is located near Kolhapur, Maharashtra state which procures round about 15,000 to 20,000 LTPD & its target market area in

Belgaum district, Gokak & in Maharashtra state. Besides the above main brands, the other competitive brands like, Krishna, Gopal, Aditya, Arokya etc.

Infrastructural facilities:

Infrastructural facilities of BEMUL are as follows.

- Security facilities.
- Canteen facilities.
- Shifts facilities-3 shifts per day.
- Land 22 acres

3.11 Future growth and prospectus:

Government of Karnataka and NDDB has signed a memorandum of understanding during February 2000, for further strengthening the dairy development activities in Karnataka with an outlay of Rs.250 crores. Consequent to the announcement of new lending terms and conditions by NDDB through an evolution of an action plan–perspective 2010 to enable dairy co-operative to face the challenges of an increased demand for milk and milk products by focusing efforts. Enhancing productivity, managing quality and building national information network plans are under implementation.

- Repairing for ISO-9001 certification.
- Marketing quality improvement.
- Developing HACCP-hazards Analysis and Critical Control Points.
- Getting export grade milk powder
- Expansion of Gokak chilling centers

3.12 DEPARTMENTS OF THE UNION:

1. Production department
2. Administration department
3. Engineering department
4. Procurement & input department
5. Stores department
6. Security department

7. Processing department
8. Quality control department
9. Finance and accounts department
10. Marketing department
11. Management Information Department
12. Animal Husbandry Department

3.13 Supports to Training and Employment Programme (STEP) :

The Belgaum Milk Union Limited (BEMUL) is implementing a special programme named as "Support to Training and Employment Programme (STEP) for overall development of women folk in rural areas. The STEP is launched during 1997 with the financial assistances of Ministry of Human Resource development, Department of Women and Child Development Government of India.

Objectives of the Programme:

The programme of STEP advocates the objectives of extending training for up gradation of skills and sustainable employment for women through a variety of action-oriented projects, which employ women in large number.

The scheme covers 8 traditional sectors of employment. Dairying and Animal Husbandry is one such sector, which gives sustainable employment and income.

The STEP programme is implemented with 90% financial assistance from Government of India's Human Resource Development Division, Women and Child Development Department. And 10% contribution should be made by the implementing agencies.

The programme of STEP aims top make a significant impact on women in traditional sectors (dairy and animal husbandry) by upgrading skills and providing employment to women on project basis by mobilizing women in viable groups, improving skills, arranging for productive assets (milch animals), creating forward and backward linkages, improving/arranging

support services, providing access to credit, awareness generation, gender sensitization, nutrition education, sensitization of project functionaries.

Thus STEP advocates an integrated package of inputs aiming at the integrated development of poor women in traditional sector, to enable them economically more viable, independent and raise their socio-economic status.

The main developmental objective is the organization of the Women District Co-operative Societies in rural areas by mobilizing women viable groups and generating self-employment opportunities and to take up dairying as their occupation

Table 3.6
STEP Dairy Co-operative Societies information

Sl. No	Particulars	31/3/2005	31/3/2006	31/3/2007	31/3/2008	31/3/2009
1	Total STEP dcs	70	73	73	79	86
2	Total women members	6180	6787	8980	9200	11200
3	Milk pourers	2100	2240	2430	2716	4200
4	Avg. milk procurement/dcs	130.00	140	150	155	160
5	Avg. milk / day / members	2.70	2.8	3.1	3.4	3.5
6	Total milk / day	5670	6272	2533	9200	11500
7	Avg. income/member/day	37.80	39.20	46.50	51.00	56
8	SHG deposit of members	NA	NA	NA	NA	1482000
9	Animals purchased under schemes	NA	NA	NA	NA	1385

Source : Annual reports of related years.
Note : NA = Not Available.

Table 3.7
Training Period Under STEP

Sl. No.	Particulars	Training Period (No. of days)
1	Management Training	3
2	Secretary Training	20
3	Milk Tester Training	6
4	Veterinary Training	10
5	Chairman Training	3
6	Dairy Animal Management Training (for 50 members)	3
7	Local training to all members at each village (for health and nutrition and legal awareness)	10 to 11

Source : Annual reports of related years.

Four stages of STEP plan were completed and fifth and sixth stages are in progress. Till the year 2008-09, Rs.180.63 lakhs were granted to STEP societies. Rs.2 lakhs were incurred directly and indirectly for societies.

Table 3.8
Amount of grant details related to STEP

Sl. No.	Stages of Plan	Grants from KMF (in lakh of rupees)	Amount of Grant Spent (in lakhs of rupees)	Remarks
1	1	57.73	57.73	Plan was completed
2	2	39.09	39.08	Plan was completed
3	3	50.00	49.98	Plan was completed
4	4	12.48	12.48	Plan was completed
5	5	11.92	14.08	Plan is in progress
6	6	9.41	5.64	Plan is in progress

Source : Annual reports of related years.

Table 3.9
Details of Amrut Plan

Sl. No.	Grants released			Achievement	
	Name of the plan	Physical	Financial (in lakhs of rupees)	Physical	Financial (in lakhs of rupees)
1	Amrut yojana	708.00	70.80	708.00	70.80
2	Special Unit Plan	171.00	20.79	171.00	20.79
3	Girijana Plan	33.00	4.95	33.00	04.95

Source : Annual reports of related years.

In the year 2008-09, the government of Karnataka released Rs.6.65 lakhs for dairy development activities. KMF granted Rs.6.55 lakhs for different activities of animal husbandry, in which BEMUL provided the veterinary facility at concession rate.

Yashaswini Farmer's Co-Operation Health Protection Plan:

It is one of the state government popular plans, which is a boon for health protection of rural co-operatives in the state. To get the benefit of the plan, the milk producers (farmers) should registered with the help of milk unions and district milk co-operatives. In the year 2008-09, there are 6,721 beneficiaries from 165 societies of Belgaum Milk Union were get registered. 18 members of them were get the facility of Open Heart Surgery, 16 women members were get veterinary operation and 32 members were get the facility of other operations. The BEMUL collected the amount of Rs.6, 32,120.00 from the milk producers comes under the area of its societies for Yashaswini Plan and provided the number of heath facilities of Yashaswini amounting to Rs.17.12 lakhs to its milk producers.

PROFILE OF BEMUL

Name	: Belgaum District Cooperative Milk Producers Union Limited.
Chairman	: Sri. Babu Basappa Galgali
Managing Director	: Sri. N.B. Marathe
Address	: Registered Office & Works, Belgaum district Cooperative milk Producers, Union limited Kanabargi Road, Mahantesh Nagar, Belgaum, 590016, Karnataka, INDIA
Registration No.	: J.R.L 9072: D.A.Y: 1985-86, 24-12-1985
Telephone	: +91 (0831) – 2454791, 2455036 +91 (0831) – 2405754, 2453442
Fax	: +91 (0831) – 2454791
E-Mail	: **bemul_m@yahoo.com**
Website	: **www.kmf.coop.org**
Year of Establishment	: 24.12.1985
Weekly holiday	: Sunday
Main raw-materials	: MILK.
Organization setup	: Land – 22 acres, labour – 305, Capital-5.82 Crores.
Major products manufactured (Types of Milk)	: Toned Milk, Standard Milk, Homogenized Milk & Full Cream Milk
Milk Products	: Crud, Lassi, Masala butter milk, Ghee, Kunda, Peda and Flavored Milk.
Total Employees	: 123
Company Bankers	: Belgaum Dist Co-operative Bank, State Bank of Mysore, Belgaum. Corporation Bank and Axis Bank
Auditors (Internal)	: M.D. Pise Associates, Dharwad.
Co-operative Auditors	: Assistant Director of Co-operative Audit

Board of Directors

Elected Directors : Sri. Babu B. Galagali, Chairman

Sri. Sanjaygouda R. Patil

Sri. Rajshekhar A. Patil

Sri. Somalingappa S. Mugali

Sri. Nagappa N. Patil

Sri. Babu B. Katti

Sri. Amar I. Nerli

Sri. Shankar M. Bolannavar

Smt. Veena S. Desai.

Sri. Narayan L. Patil

Sri. Udaysingh J. Shindhe

Sri. Vivekrao V. Patil

Nominated Directors : Sri. Laxaman V. Janavaadkar

Sri. Sukhadev S. Jadhav

Smt. Girija B. Bhimarani

Official Directors : Sri. G.M. Patil, Deputy Registrar

Dr. Manjunath Palegar, Deputy Director, Animal Husbandry.

Sri. C. Balamurugan, Senior Manager (CS) NDDB, Bangalore.

Sri. Ravikumar Kakade, Director Mother Dairy, Bangalore.

Sri. N.B. Marathe, Managing Director, BEMUL