

CLEAN MILK PRODUCTION THE KEY TO QUALITY MANAGEMENT IN DAIRY INDUSTRY

WHAT IS QUALITY?

Traditional definition of quality and the concept of quality that I will talk about today, are two very distinct aspects. "Quality" to most Dairymen and most definitely to consumers is synonymous with fat content & SNF. This is also the sole criteria used for determining quality, and thus, "Price" of the milk procured & sold. The need of the day is to look at "Quality" with a more fundamental approach and apply more scientific criteria for the same, e.g. the bacterial count in milk as quality criteria. The bacterial count is a reflection of the Hygienic quality of milk and the aspect has certainly been ignored. Having achieved the status of the largest milk producer in the world, the time has come to focus on achieving similar results on the quality front too.

IMPORTANCE OF HYGIENIC QUALITY

One may ask, is the hygienic quality that important, especially when all consumers want a thick layer of cream on their daily supply of milk? Here are several reasons why hygienic quality is important.

To strive for continuous upgradation Talks of export of dairy products from India have been going on for past few years. It as the theme of the annual dairy conference three years ago. If we want to export in a big way, we must certainly need to address the hygienic quality angle, considering the stringent quality standards adopted by leading dairying countries. With opening up of the dairy industry and several processors getting into the business, quality will be one of the USP's to beat competition.

* Manufacture of value added products such as cheese, necessarily demands a very high quality of milk. Poor quality milk poses great problems with processing.

AN EXAMPLE OF INTERNATIONAL STANDARD

Before getting into how best to achieve quality, I would like to present this example of international demands on hygienic quality. This would be the benchmark for us to work towards it.

A classification system based on bacterial count places milk in three classes. The best milk (Class 1) has less than 100,000 bacteria/ml, i.e. 0.1 million. Class II has 0.1 to 0.3 million/ml and more than 0.3 million/ml is for Class III. Payment system is linked to the class of milk. A bonus is paid for milk with Total Bacterial Count (TBC) of less than 30,000/ml. Deductions are made for Class II & III. Assistance is provided to dairy farmers delivering poor class of milk. There are warning and suspension rules. Farmers delivering persistent poor quality milk are suspended from delivery and restored when quality is brought back to Class 1. To give an indication of the challenge before us, it is not unusual for raw milk in our country to have approximately 8 to 10 million-bacteria/ ml when it arrives at the dairy gate, as against 0.1 million - the world standard. Some dairies have recognized the need and implemented schemes for upgrading hygienic quality with encouraging results.

FACTORS AFFECTING RAW MILK QUALITY

- * Barn environment-cleanliness level in the barn
- * Hygiene of the milker and milking practices followed.
- * Milking routines that cover preparation of udder for milking and post milking sanitation.
- * Milk handling and containers at every stage from milking to handling at collection center, during transportation and reception at the dairy.
- * Temperature of milk.
- * For those using mechanized milking, thorough cleaning of milking equipment is the crux. Machine contributes greatly to maintenance of hygiene. By introducing correct milking routines and due to the fact that milk is untouched by human hands, the quality' of milk is improved. However, cleaning the equipment thoroughly after every milking with warm water and detergent/sanitizer is a must.

Finally, having taken all precautions to keep bacterial count to a minimum, the way to retain quality is by storing milk at the correct temperature. This is especially true in our country having warm ambient temperatures. It is thus of utmost importance to cool the milk as quickly as possible to 4°C.

QUALITY & COOLING

This brings us to the concept of bulk cooling. In a series of studies conducted for a few dairies across the country, it was noted that in today's collection system run by the co-operatives, the average time lapse from udder of animal to dairy is 4 to 6 hours. At 35°C ambient (often higher), one can imagine the bacterial multiplication that will take place during this time. Cooling of milk thus becomes the first step towards quality upgradation.

WHERE SHOULD MILK BE COOLED?

To attain substantial improvement in the hygienic quality, quick cooling is necessary and this too "On the Farm". However, that may be impractical in today's context for India."At the Collection Centre" could be for the day, i. e. to ensure cooling of milk within 1.5 to 3 hours and to optimize advantages of quick cooling. This concept of bulk cooling at centers has been implemented by a few wherein bulk coolers are installed at centers, which has brought a difference in quality of milk.

BULK MILK COOLERS

Different types of bulk coolers manufactured locally within the country are available The direct expansion (DX), open t energy efficient with compact evaporators, easy to clean and n-Closed type tanks are good for capacities. Ice Bank versions of this t also available.

WHY BULK COLLECTION THROUGH BULK COOLING?

Let us look at the benefits of going Bulk collection. Apart from getting better milk, it also economizes on the collection:

- One can certainly expect a better milk.
- A reliable & systematic collection cooling, motivates farmers to produce and deliver more milk. Dairies who has for bulk cooling have reported in milk collection.
- It also makes it easier to include smaller producers in the scheme.
- Three times milking in case yielding cows becomes possible.
- Maintenance of good hygienic con is facilitated.
- A major saving in transport costs cooling and once a day collection instead of the present system of twice a day will reduce transport cost by half
- There is flexibility in milk deliver pick up times as there is no risk of spoilage.
- Handling of milk cans, both at collection center & dairy, is eliminated. This simple and cheaper handling of at dairy.

GOING BULK- EXISTING & NEW DAIRIES.

For new dairies, the exercise would be simple to include bulk cooling in the milk procurement scheme. For existing dairies, this infrastructural change can be brought about in a phased manner. A pilot exercise can be initiated in a chosen area. The choice of area can be made based on a few critical criteria viz., choose an area from where the milk is coming directly to the dairy, where the milk procured is substantial at each village/collection center. The farther away the chosen area from the dairy, better are the advantages. Access of the collection centre by road should be considered.

Another important aspect is a need for creating social awareness about milk quality. This would work as an incentive to dairymen as demand for better quality milk would automatically ensure better gains and a place in the global market.
