

The Study on UHT Processing of Milk: A Versatile Option for Rural Sector

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Abstract: India is the largest milk producing country in the world. Most of the rural poor people are involved in the milk production. India has a tropical climate; milk cannot be kept for more than three hours at ambient temperature immediately after milking. Cooling equipments are not available in many parts of the country and if available, which are not affordable to rural people. Milk preservation prior to distribution and sale is major problem in India. So it is necessary to develop a new scientific and efficient method to overcome such problems. If low cost and highly effective technology for preservation of milk can be implemented in rural areas, it can be beneficial to rural people. Ultra-high Temperature processing (or UHT) is the partial sterilization of food by heating it for a short time, around 1-2 seconds, at a temperature exceeding 135°C and then kept inside the aseptic package. Such a high temperature required to kill spores in milk. The high temperature also reduces the processing time, thereby reducing the spoiling of nutrients and has excellent keeping qualities and stored for long period of time at ambient temperature. Aseptic packaging machines are very expensive and UHT milk depends entirely on it. There is a need to reduce its cost so that UHT processing and packaging machine can be approachable to rural poor farmers in India.

Key words: UHT • milk processing • sterilization • rural

INTRODUCTION

Milk, the first food man takes on birth, is a 'treasure-trove' of more than 200 ingredients, many with unique functional and nutritional properties which modern processing is capable of isolating and refining for a multiplicity of uses in the food and related industries [1].

Largest milk producing country in the world, India, milk production is more than 80 million tones per year. Out of the entire production, 55 per cent are consumed as fluid milk and rest 45 per cent are sent for industrial processing. Most of the poor Indian communities, who are staying in rural areas, are involved in milk production. Though India is located in tropical climate. Sufficient cold chain and refrigeration facilities are not available in many parts of the country. These are very expensive for the rural poor people. Although milk is produced mostly in rural areas, its demand is high in urban areas. Milk preservation prior to distribution and sale is a major problem in tropical climate of India. So new scientific and efficient method is required to overcome such problems. Presently more than 77000 village dairy co-operatives societies have been

opened up in India, where more than 10.4 million farmers are members. If a low cost technology for preservation of milk can be implemented in rural areas, it will be a boom to rural people [2].

The advent of Ultra High Temperature (UHT) treatment of milk has added a new dimension to marketing of liquid milk in urban centers as well as remote areas. The distinctive feature of UHT processed milk is that it is sterile-not pasteurized - and so has long shelf life at room temperature. The UHT milk also known as long life milk is emerging as an attractive commercial alternative offering a hygienic product of unmatched quality which can be bought anywhere, at anytime and in any quantity [3].

UHT treatment to a product means exposing it to such powerful heat treatment that all micro-organisms killed and these products have excellent keeping qualities and can be stored for long period of time at ambient temperature. If such low cost technology is developed and used by farmers then he can earn more, improve social economy life, simplify deliveries, use simple and cheaper distribution vehicles and eliminate return of unsold products.