

Details on cheese preparation

Introduction

Cheese is one of the oldest, versatile foods of mankind and it is the generic name for a group of fermented milk based food products. Cheese may be defined “as the curd of milk separated from the whey and pressed into a solid mass”. It is a rich source of fat and protein. During its manufacture, fat and casein is retained in cheese curd, while water soluble constituents (whey protein, lactose, water soluble vitamins) partition into whey. Fat has a major role in flavour, mouthfeel, adhesiveness and firmness of cheese. The typical aroma of some types of cheese develops only when the fat-in dry matter content is at least 40-50% because the aroma is mainly due to the breakdown products of fat during cheese ripening. Nutritional value of cheese depends on the milk characteristics and the cheese making conditions which determine unique and distinct nutritional properties for each cheese type. Cheese has been associated with several beneficial health properties – antihypertensive, anticariogenic and antiosteoporotic.

Food Safety and Standards Regulations (2011) define cheese as the ripened or unripened soft or semihard, hard and extra hard product, which may be coated with food grade waxes or polyfilm, and in which the whey protein/casein ratio does not exceed that of milk. Cheese is obtained by coagulating wholly or partly milk and/or products obtained from milk through the action of non-animal rennet or other suitable coagulating agents and by partially draining the whey resulting from such coagulation and/or processing techniques involving coagulation of milk and/or products obtained from milk which give a final product with similar physical, chemical and organoleptic characteristics. The product may contain starter cultures of harmless lactic acid and/or flavour producing bacteria and cultures of other harmless microorganisms, safe and suitable enzymes and sodium chloride. It may be in the form of blocks, slices, cut, shredded or grated cheese.

Technology & Equipments required

- Cheese Vat
- Heating Kettle
- Cheese press and hoops
- Packaging machine
- Miscellaneous: Wax heater, Cheese mill, Wires

Market Potential

India has originally been a paneer-consuming market however, in the recent years there has been an increase in the demand for cheese which can be attributed to changing food habits and rise in food service outlets like Pizza Hut and Domino's across the country. The Indian fast-food market is a major driver for India's cheese industry and is currently worth over a billion dollars and growing at 30 to 40% annually. Cheese is quite popularly used with a number of fast foods such as pizzas, burgers, garlic breads, and sandwiches. It is also being added as a taste enhancer in a number of traditional Indian recipes such as dosa, parathas and uttapam. Rising disposable income levels and government initiatives are also major factors contributing to the growth of cheese in the country (Dairy times report, 2015). Over the years the production and export of cheese has increased immensely. Eighty percent of the total cheese market in India is processed cheese which is mostly used by restaurants and fast food chains. Imported cheeses form a fraction of total Indian market and over the years the domestic cheese sales have increased abruptly with maximum purchase by restaurants and hotels.

Nowadays, many Indian dairy industries manufacture special foreign cheese varieties to meet up the demands of cheese loving consumers. Major players include Amul, Britannia, Gowardhan, Milky mist and Mother dairy. The processed cheese market which contributes about 2,000 tonne a year is dominated by Amul with a 75% share. Processed cheese is sold as slices, spreads, cubes, wedges, blocks and sauces to diversify the cheese market in India. The demand for natural cheese is also rising in the Indian cheese market. Cheese consumption is maximum in metropolitan cities viz., Delhi, Mumbai, Chennai, and Kolkata which consume over 60% of the total cheese sold in India. The total cheese production has been growing by about 25% per year and is estimated to be growing at a higher rate which is the driving force for micro food processors to start cheese business.

Manufacturing process

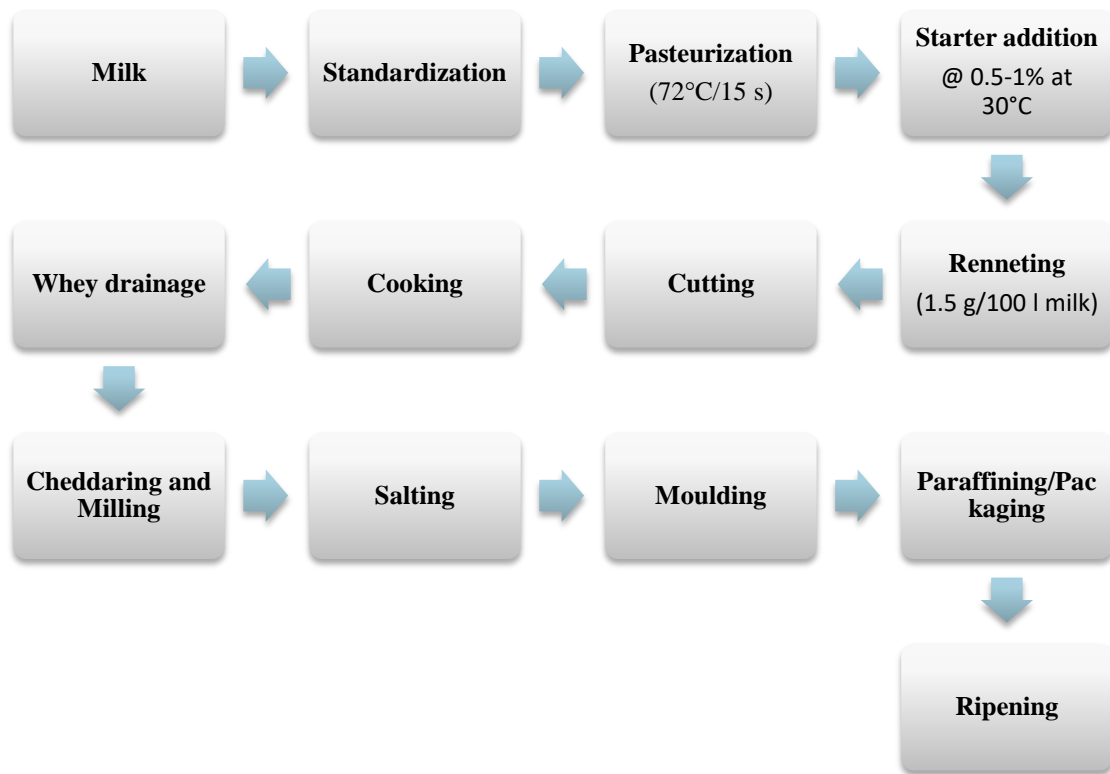


Fig. 1 Preparation of Natural Cheese

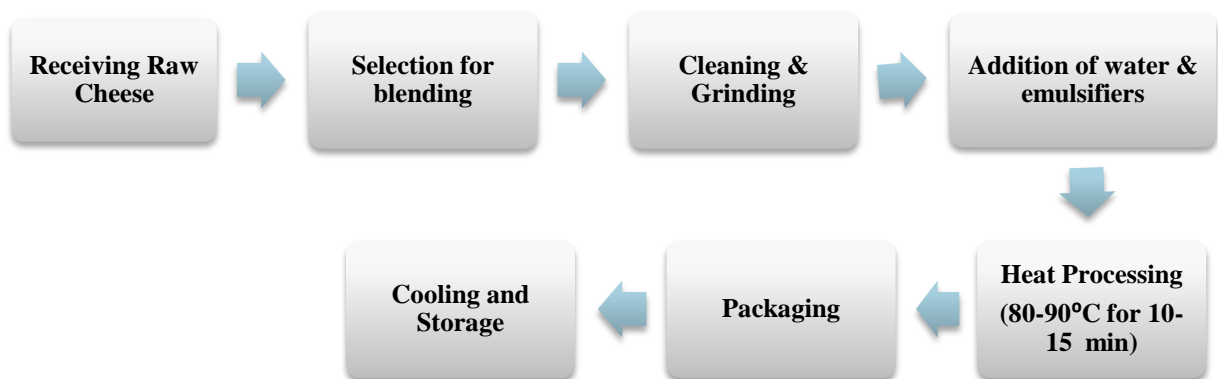


Fig. 2 Preparation of processed cheese

Assumptions made

A micro cheese processing plant can be installed with production capacity of 100-120 kg natural cheese and 50 kg processed cheese per day and it is assumed to gain profit of around 60-65% per day.