



Effect of various packaging materials and storage temperatures on chemical quality of cow milk chhana

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ABSTRACT

In the present investigation, Chhana with a sample of 200 g each was packed in packaging material as P₁- Butter paper, P₂- Ploy vinyl chloride (PVC) film, P₃- PVC container, P₄- Tin can and stored under 3 different temperatures as T₁- 0°C with 95 per cent R.H., T₂- 4°C with 85 per cent R.H., T₃- 10°C with 70 per cent R.H. under study for the preservation of chhana. It was found that, the packaging material has significant effect on increase in acidity. There was significant increase in acidity in samples P₁, P₂, P₃ and P₄ with rise in temperature. Significant effect of temperature and packaging material was observed on the protein content of chhana. The lactose content was found in decreasing trend with increase in storage temperature. In all packaging materials, (P₂) PVC film package was having significantly superior acceptability score.

KEY WORDS : Chhana, Preservation, Packaging, Relative humidity, Temperature

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INTRODUCTION

Milk is nature's gift. It has excellent nutritional qualities which supplies body building proteins, bone forming minerals, vitamins and energy in the form of lactose and milk fat. As protective food of high palatability and digestibility for human, milk and milk products are the sources of animal protein to the lacto-vegetarians. Chhana is an acid coagulated indigenous milk product obtained after separating whey from coagulum.

The coagulants mostly used are sour chhana, lactic acid, citric acid and juice of citrus fruits. According to Prevention of Food Adulteration Act (1976), the product shall not contain more than 70 per cent moisture and less than 50 per cent fat on dry matter basis. Cow milk is most suited for making chhana. Proper packaging material and storage temperature would be definitely helpful in maintaining the hygienic condition and quality of chhana for longer duration. The present investigation was carried out with objectives to know the proper packaging material for

chhana and to compare the shelf-life of chhana stored at different temperatures.

MATERIALS AND METHODS

The study was undertaken in the Department of Animal Husbandry and Dairying, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. The cow milk obtained from livestock Instructional Farm of the department was standardized at 3.5 per cent fat. After analyzing the milk for knowing per cent contents of protein, fat, solid not fat, total solid, chhana was prepared by following the method described by De (1980). The standardized milk was heated at 100°C for 5 minutes then cooled to 80-85 °C and coagulated by addition of 1.5 per cent citric acid. After separation of solid material, chhana was drained out.

Chhana with a sample of 200 g each was packed in packaging material under study for the preservation of chhana.

- P₁- Butter paper
- P₂- Ploy vinyl chloride (PVC) film
- P₃- PVC container
- P₄- Tin can

Packed samples of chhana were stored under 3 different temperatures:

- T₁- 0°C with 95 per cent R.H

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