
EXPERIMENT 15 STUDY OF MANUFACTURE OF SPRAY DRIED MILK POWDER

Structure

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15.1 INTRODUCTION

Spray dried milk is commonly available in the market. It is used as an ingredient in the preparation of several formulated dairy and other food products. It is also used in the preparation of recombined and reconstituted milk. Liquid milk is highly perishable and uneconomical to transport over a long distance because of the presence of large content of water in it. The presence of water facilitates many types of microbial and enzymatic changes in milk, which bring about its spoilage. Therefore milk is dried to increase its shelf-life and also to reduce the cost of storage and transportation. The drying process ensures that the dried milk when reconstituted gives almost near to normal milk. In this exercise the students will study the manufacturing procedure of spray dried milk.

15.2 OBJECTIVE

- 1 To study the manufacture and storage of milk powder

15.3 EXPERIMENT

1. Equipment/materials required:

- 1 Spray-drier, Milk-condensing unit

2. Procedure

Observe and record the following:

Particulars of milk

Type _____

Quantity _____

% Fat _____

% SNF _____

Particulars of concentrated milk

Forewarming temperature _____ °C

Forewarming time _____

Quantity of concentrated milk _____

% fat _____ % SNF _____ % T.S _____

Particulars of milk powder

Yield _____ % Moisture _____ % Total solids _____ %

Recovery of total solids _____ %

Fat _____ % SNF _____ % Insolubility index _____ %

Spray drying

Capacity _____ Kg/water/hr

R.P.M. of atomizer _____ Temperature of inlet air / hot water _____ °C

Temperature of chamber _____ °C Temperature of exhaust air _____ °C

Temperature of milk powder _____ °C