

A Study on Spray Drying in Food Industry

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Abstract

Spray drying is a common drying technique in food industries to convert liquid to powder form. A good understanding on the dynamic behavior of the process is important to ensure proper control. The aim of this study is to develop empirical models for spray drying of whole milk powder and orange juice powder. A preliminary study on the effect of several inputs such as inlet air temperature, feed flow rate, the moisture content, the bulk density, and the solubility of powders. The selection of suitable inputs is important to ensure the desired quality of final products (moisture content). It was found that inlet air temperature gave more significant effect on outlet air temperature and powder moisture compared to other two inputs. Inlet air temperature and outlet temperature were selected as the manipulated variable and controlled variables respectively. spray drying system proved advantageous over the standard laboratory dryer.

Reference

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