

Title Effect of Evaporative Dehydration of Banana Paste on Physiochemical Alterations
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Abstract

The objectives of this research were to construct a pilot-scale prototype of evaporative dehydrator and study the effect of accelerated vacuum drying on the physiochemical properties of banana paste as the functions of vacuum drying parameters. Using the designed prototype, the banana paste sample was effectively heated to achieve the desirable temperatures (30, 40, 60, 80 and 100 °C) prior to entering evaporative dehydration section. The moisture of the sample was allowed to rapidly evaporate and the effect of the quick evaporation was studied in terms of moisture content, water activity, color, viscosity and peroxidase activity of the final product. The vacuum treatment was compared with the atmospheric drying treatment using the same experimental setting. Using the atmospheric condition, the higher temperature treatment in the heating section was able to improve viscosity, lower moisture content, water activity and able to retain lightness of the final product. The peroxidase activity was completely deactivated at 75°C. Pretreatment with potassium metabisulfite was the most effective treatment to seize the browning progression. The use of vacuum treatment in the drying step was able to enhance the drying effect, cool down the final product to slow down chemical and physical degradations, and preserve the favorable attributes of the fresh banana.