

Retention of sialic acid content in Malaysian edible bird's nest by heat pump drying

ABSTRACT

This paper presents the results of an experimental attempt to improve the drying kinetics for the retention of colour and sialic acid in edible bird's nest through heat pump drying. Kinetics of hot air drying and heat pump drying were studied by performing various drying trials on edible bird's nest. Isothermal drying trials were conducted in hot air drying and heat pump drying at a temperature range of 40 °C-90 °C and 28.6 °C-40.6 °C, respectively. Intermittent drying trials were carried out in heat pump drying with two different modes, which are periodic air flow supply and step-up air temperature. Experimental results showed that heat pump drying with low temperature dehumidified air not only enhanced the drying kinetics but also produced a stable final product of edible bird's nest. Heat pump-dried edible bird's nest samples retained a high concentration of sialic acid when an appropriate drying mode was selected.

Keyword: Edible bird's nest; Heat pump drying; Hot air drying; Colour change; Sialic acid retention