

## **Effect of gum Arabic concentrations on foam properties, drying kinetics and physicochemical properties of foam mat drying of cantaloupe**

### **ABSTRACT**

The effect of gum arabic (GA) concentrations (0, 5, 10, and 15%) on the foam properties, drying kinetic, and effective moisture diffusivity of foam mat drying of cantaloupe (*Cucumis melo*) were analysed. Results showed that foam mat drying of cantaloupe puree with 10% GA has better foam density, foam expansion, and foam stability. The Page model fits the foam mat drying behavior of cantaloupe foam with different concentrations of GA at a constant temperature of 55 °C. The moisture content of foam mat dried cantaloupe powder was ranged from 3.29 to 4.64%. The powder flowability was significantly affected by the GA concentration. The powder produced at higher GA concentration showed good powder flowability and lower cohesiveness. Fresh cantaloupe fruit can be preserved into foam mat dried cantaloupe powder and used as a food ingredient in a variety of food products. Applications of foam mat dried cantaloupe powder in cake icing gave a natural colorant with antioxidants and no significant changes on flow behavior index of the icing viscosity.

**Keyword:** Rockmelon; Foam mat drying; Hydrocolloid; Foam properties; Drying models; Icing viscosity