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Effect of Ultrasound Treatment on Some Physical Properties of Wheat Flour

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Abstract

Ultrasound treatment of wheat flour at 20 kHz for 30 min increased the water absorption capacity of the flour from 1.2 to 1.5 g water/g flour. The treatment also increased the swelling power and solubility of the flour at 60 °C by 18% and 12%, respectively. The gelatinization temperature of the treated flour was lowered by 2 °C, while the peak viscosity increased by 15%. The results indicate that ultrasound treatment can improve the functional properties of wheat flour for bakery applications.

Keywords: Ultrasound treatment, wheat flour, water absorption capacity, swelling power, solubility, gelatinization temperature, peak viscosity, functional properties.