

Determination of frying constant for vacuum fried pineapple at three levels of feeding capacity

A. Latriyanto, S. Soeparman, R. Soenoko, H.S. Sumardi

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Abstract

Vacuum frying is frying under vacuum pressure to prevent the quality deterioration of fried foods due to the excessive heat caused by high frying temperature. This process is suitable for fruit and vegetable frying to produce fruit and vegetable chips. The objective of this research was to determine frying constant of pineapple chips under vacuum. Pineapple slices in 40×20×4 mm size were fried under equilibrium pressure at 10 kPa abs and temperature of 85±3°C. Processing was conducted in three levels of feeding: 50, 75, and 100% of vacuum fryer capacity. The water removal rate was observed during the process by the measurement of the condensate formation. Vacuum frying constant K from the exponential decay equation: (*equation available in full text*) was then calculated. The results showed that K values at the feeding levels of 50, 75 and 100% were respectively 0.078, 0.068 and 0.065 min⁻¹ with each regression coefficient of 0.9677, 0.9668, and 0.9749. In conclusion, the frying constant K in pineapple vacuum frying could be determined by the exponential decay equation, and the constant value became greater at smaller feeding levels.