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POTENTIAL OF ENERGY SAVING MICROWAVE DRYING FOR WASTE *CUCUMIS METULIFERUS* SEEDS AS ALTERNATIVE TO FREEZE DRYING

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Abstract

In this study, the influences of microwave and freeze-drying methods on chemical composition, sensory, textural and antioxidative properties of the seeds of Kiwano and the potential of microwave drying as an alternative to freeze drying were investigated. For this aim, the Kiwano seeds were dried with freeze-dryer and microwave dryer. The protein, ash, fat, fiber, vitamin C, β-carotene, total phenolic content, antioxidant, textural and sensory properties of dried seeds were compared. Kiwano seeds dried at 180 W and freeze-dried seeds took the highest scores by the panelists ($p>0.05$). Microwave drying increased the total phenolic content of Kiwano seeds up to 35.54 ± 0.09 mg/g. As a practical and energy-saving method, microwave drying reduced the drying times. The results of present study revealed that microwave drying have a potential to be a promising innovative alternative for the rapid production of freeze-dried fruit materials while maintaining product quality.

Keywords: freeze-drying, Kiwano, microwave

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