

Antifungal citrus hystrix extract as natural food preservative

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Abstrak

During their storage, the traditional ready-to-eat food, such as sticky rice cake, are easily contaminated by spoilage pathogens. Hence, this study aims to evaluate the effect of Citrus hystrix extract in reducing spoilage pathogens in sticky rice cake during storage. The experimental sticky rice cake was prepared and formulated with Citrus hystrix extract at varied level of concentrations of 0.65%, 1.26% and 1.82% (w/w). Treated samples were stored at room temperature for 28 days and evaluated periodically for their microbial activity (total plate count), thiobarbituric acid reactive substances (TBARS), and sensory analysis. For its antifungal activity, the Citrus hystrix extract was also compared against *Penicillium* sp. and *Aspergillus nidulans* prior to formulation. Results exhibited a significant advantage of the added extracts to the sticky rice cake. All extract levels effectively eliminated the spoilage microorganism and significantly lowered the TBARS values. The physico-chemical properties of sticky rice cake including pH, water activity, and moisture content were equal among all the formulated samples and slightly different at 1.82% (w/w) extract level. Moreover, the addition of Citrus hystrix extract up to 1.82% did not affect the acceptability sensory attributes of the sticky rice cake as compared to the control which has no Citrus hystrix extracts ($p > 0.05$).