

Pendugaan Umur Simpan Biskuit Berbasis Mocaf (*Modified Cassava Flour*) dan Biji Labu Kuning (*Cucurbita moschata* Durh) dengan Parameter Kadar Air dan Asam Lemak Bebas

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ABSTRAK

Latar belakang: Anemia defisiensi besi merupakan salah satu masalah gizi yang rentan terjadi karena penyerapan zat besi yang buruk, serta kurangnya asupan zat besi dan protein dalam makanan sehari-hari. Mengonsumsi makanan fortifikasi berupa biskuit merupakan salah satu strategi pencegahan dan penanggulangan anemia yang dapat dilakukan. Biskuit memiliki umur simpan yang relatif lama, namun tetap memiliki batas waktu tertentu untuk dapat dikonsumsi secara aman.

Tujuan: Menganalisis lama umur simpan biskuit berbasis mocaf dan biji labu kuning menggunakan metode *Accelerated Shelf-Life Testing* (ASLT) dengan persamaan Arrhenius.

Metode: Biskuit dikemas menggunakan kemasan *metalize plastic*, kemudian disimpan di inkubator dengan suhu 25°C, 35°C, dan 45°C selama 28 hari dan dilakukan pengujian kadar air dan kadar asam lemak bebas setiap 7 hari.

Hasil: Parameter yang digunakan untuk pendugaan lama umur simpan adalah kadar asam lemak bebas, melalui reaksi ordo 1 dengan $R^2=0,9409$, didapatkan hasil pendugaan umur simpan 187 hari di suhu 25°C, 126 hari di suhu 35°C, dan 87 hari di suhu 45°C.

Simpulan: Pendugaan lama umur simpan biskuit berbasis mocaf dan biji labu kuning dalam kemasan *metalize plastic* menggunakan metode ASLT dengan persamaan Arrhenius adalah selama 187 hari (15,6 bulan) di suhu 25°C.

Kata kunci: biskuit, umur simpan, ASLT, kadar air, kadar asam lemak bebas

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Shelf-life Prediction of Biscuits Made from Mocaf (Modified Cassava Flour) and Pumpkin Seeds (*Curcubita moschata* Durch) Based on Moisture Content and Free Fatty Acid Levels

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ABSTRACT

Background: Iron deficiency anemia is a nutritional problem due to poor iron absorption and insufficient iron and protein intake in daily meals. Consuming fortified foods such as biscuits is one of the strategies for preventing and combating anemia. Biscuits have a relatively long shelf life but still have a certain time limit for safe consumption.

Objective: Analyzing the shelf life of biscuits made from mocaf and pumpkin seeds using the Accelerated Shelf-Life Testing (ASLT) method with the Arrhenius equation approach.

Methods: The biscuits were packaged using metallized plastic and then stored in an incubator at 25°C, 35°C, and 45°C for 28 days. Moisture content and free fatty acid levels were tested every seven days.

Result: The parameter for estimating shelf life is free fatty acid levels, through a first-order reaction with $R^2 = 0.9409$, the estimated shelf-life results are 187 days at 25°C, 126 days at 35°C, and 87 days at 45°C.

Conclusion: The estimated shelf life of biscuits made from mocaf and pumpkin seeds in metallized plastic packaging using the ASLT method with the Arrhenius equation is 187 days (15.6 months) at 25°C.

Keyword: biscuits, shelf life, ASLT, moisture content, free fatty acid levels

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