ANALISIS MUTU ORGANOLEPTIK DAN PENDUGAAN UMUR SIMPAN BISKUIT SUBSTITUSI HATI AYAM DAN BIJI SAGA POHON SEBAGAI ALTERNATIF SELINGAN PENCEGAH ANEMIA DEFISIENSI BESI

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ABSTRAK

Latar Belakang: Riskesdas 2018 menunjukkan tingginya prevalensi anemia remaja putri sebesar 32%. Pencegahan anemia dapat dilakukan melalui pendekatan berbasis pangan sumber zat besi. Biskuit berbahan dasar hati ayam dan biji saga berpotensi sebagai produk kaya zat besi. Namun demikian, biskuit yang dihasilkan harus tetap memperhatikan segi organoleptik dan keamanan pangan.

Tujuan: Mengkaji mutu organoleptik dan umur simpan biskuit substitusi hati ayam dan biji saga dengan metode ASLT (*Accelerated Shelf-Life Test*) model *Arrhenius*.

Metode: Formulasi biskuit substitusi tepung hati ayam dan tepung biji saga yaitu F0=0:0, F1=15:15, F2=20:10, dan F3=25:5. Uji mutu organoleptik menggunakan uji hedonik, mutu hedonik, dan JAR (*Just About Right*) 9 skala. Penentuan formulasi terbaik metode *Multi-Attribute Decision Making* (MADM). Pengujian aktivitas air menggunakan Labswift-aw novasina dan Asam Lemak Bebas (ALB) metode titrasi pada sampel umur simpan tiap 3 hari selama 18 hari suhu 25°C, 35°C, dan 45°C.

Hasil: Formula F1 paling disukai warna dan tekstur namun formula F2 paling disukai aroma dan rasa. Formulasi terbaik berdasarkan MADM ialah F1. Penentuan umur simpan berdasarkan persamaan regresi ordo nol parameter dengan energi aktivasi terkecil y=-976,98x-0,7571. Dugaan umur simpan biskuit yaitu 53, 47, dan 43 hari pada suhu 25℃, 35℃, dan 45℃.

Simpulan: Semakin rendah substitusi hati ayam dan semakin tinggi substitusi biji saga, mutu organoleptik parameter warna dan tekstur biskuit semakin disukai. Pendugaan umur simpan biskuit metode ASLT model *Arrhenius* ialah 53 hari pada suhu 25°C.

Kata Kunci: mutu organoleptik, hati ayam, biji saga, biskuit, umur simpan

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ANALYSIS OF ORGANOLEPTIC QUALITY AND SHELF LIFE ESTIMATION OF IRON-DEFICIENCY ANEMIA PREVENTATIVE BISCUITS WITH CHICKEN LIVER AND SAGA TREE SEEDS SUBSTITUTION

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ABSTRACT

Background: The 2018 Riskesdas survey shows a high prevalence of anemia among adolescent girls at 32%. Prevention of anemia can be achieved through an iron-rich food-based approach. Biscuits made from chicken liver and saga seeds have the potential to be iron-rich products. However, the produced biscuits must still consider organoleptic qualities and food safety.

Objective: To assess organoleptic quality and shelf life of biscuits substituted with chicken liver and saga seeds using Accelerated Shelf-Life Test (ASLT) with Arrhenius model.

Methods: Organoleptic quality of biscuits with varying substitutions of chicken liver and saga seeds (F0=0:0, F1=15:15, F2=20:10, F3=25:5) was evaluated using hedonic tests, hedonic quality, and Just About Right (JAR) at 9 scale. The best formulation was determined through Multi-Attribute Decision Making (MADM) method. Water activity was tested every 3 days using a Labswift-aw Novasina, and Free Fatty Acids (FFA) were assessed through titration on samples stored at 25°C, 35°C, and 45°C for 18 days.

Result: Formula F1 is the most preferred in terms of color and texture, while Formula F2 is the most preferred in terms of aroma and taste. According to MADM, F1 was the best formulation. Shelf life was estimated using zero-order regression equations, with the lowest activation energy equation being y=-976,98x-0,7571. The estimated shelf life of biscuits is 53, 47, and 43 days at 25°C, 35°C 45°C.

Conclusion: Biscuits with lower chicken liver and higher saga seed substitutions were preferred for their color and texture. The estimated shelf life using the ASLT Arrhenius model is 53 days at 25°C.

Keywords: Organoleptic quality, chicken liver, saga seeds, biscuits, shelf life

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