

**PENDUGAAN UMUR SIMPAN SNACK BAR KEJU RICOTTA  
PROBIOTIK (*Lactobacillus plantarum* Dad-13) DENGAN METODE  
ACCELERATED SHELF LIFE TEST**

**INTISARI**

**Oleh:**

**MAYA PRILIA NUR FANA**  
**18/425407/TP/12108**

Kesadaran masyarakat untuk mengonsumsi camilan sehat semakin meningkat. *Snack bar* merupakan salah satu camilan sehat karena memiliki kandungan gizi lengkap. Saat ini telah dikembangkan *snack bar* berbahan dasar pangan lokal yang ditambahkan komponen probiotik untuk memberikan efek positif pada kesehatan yaitu *snack bar* dengan isian keju ricotta probiotik (*Lactobacillus plantarum* Dad-13). Klaim produk pangan probiotik dapat memberikan efek kesehatan apabila produk akhir memiliki jumlah sel antara  $10^7$ - $10^9$  CFU/gr. Jumlah tersebut dapat mengalami penurunan selama penyimpanan karena faktor lingkungan seperti suhu, aktivitas air, oksigen, dan derajat keasaman. Sehingga, perlu dikaji perubahan mutu yang terjadi guna pendugaan umur simpan produk untuk mengetahui batas konsumsi produk tersebut.

Penelitian ini bertujuan untuk menduga umur simpan produk *snack bar* dengan isian keju ricotta probiotik menggunakan metode ASLT model Arrhenius. Rancangan penelitian yang digunakan yaitu Rancangan Acak Lengkap (RAL) dengan 3 faktor. Faktor yang pertama yaitu metode pengemasan vakum (V1) dan non vakum (V2). Faktor kedua yaitu suhu penyimpanan 4°C (T1), 20°C (T2), 30°C (T3), dan 37°C (T4). Faktor ketiga yaitu lama penyimpanan yaitu H0, H7, H14, H21, dan H28. Parameter yang diamati meliputi viabilitas sel, angka peroksida, kadar air, aktivitas air ( $a_w$ ), dan nilai pH.

Hasil penelitian menunjukkan semakin lama penyimpanan, *snack bar* dengan isian keju ricotta probiotik mengalami peningkatan angka peroksida serta penurunan viabilitas sel, kadar air, aktivitas air ( $a_w$ ), dan nilai pH. Perubahan mutu yang terjadi selama penyimpanan dapat mempengaruhi umur simpan produk. Umur simpan *snack bar* keju ricotta probiotik kemasan vakum pada suhu 4°C, 20°C, 30°C, dan 37°C adalah 41 hari, 24 hari, 14 hari, dan 9 hari. Sedangkan, pada kemasan non vakum memiliki umur simpan selama 32 hari, 25 hari, 13 hari, dan 8 hari.

Kata kunci: ASLT, kemasan, mutu, *snack bar* probiotik, umur simpan

**ESTIMATION SHELF LIFE OF RICOTTA CHEESE SNACK BAR  
PROBIOTIC (*Lactobacillus plantarum* Dad-13) USING ACCELERATED  
SHELF LIFE TEST METHOD**

**ABSTRACT**

**By:**

**MAYA PRILIA NUR FANA**  
**18/425407/TP/12108**

Public awareness to consume healthy snacks is increasing. Snack bar is a healthy snack because it contains complete nutrition. Currently, a snack bar made from local food has been developed with probiotic components added to have a positive effect on health, that is snack bar filled with probiotic ricotta cheese (*Lactobacillus plantarum* Dad-13). Claims of probiotic food products can provide health effects if the final product has a cell count between  $10^7$ - $10^9$  CFU/gr. This amount may decrease during storage due to environmental factors such as temperature, water activity, oxygen, and acidity. So it is necessary to study the quality changes that occur in order to estimate the shelf life of the product to determine the consumption limit of the product.

This research aims to estimate the shelf life of a snack bar filled with probiotic ricotta cheese using the Arrhenius model ASLT method. The research design used was Completely Randomized Design (CRD) with 3 factors. The first factor is the vacuum (V1) and non-vacuum (V2) packaging methods. The second factor is storage temperature of 4°C (T1), 20°C (T2), 30°C (T3), and 37°C (T4). The third factor is storage time there is H0, H7, H14, H21, and H28. Parameters observed included cell viability, peroxide value, moisture content, water activity ( $a_w$ ), and pH value.

The results showed that the longer the storage time, the snack bar filled with probiotic ricotta cheese increased the peroxide value and decreased cell viability, water content, water activity ( $a_w$ ), and pH value. Changes in quality that occur during storage can affect the shelf life of the product. The shelf life of vacuum packaged probiotic ricotta cheese snack bars at 4°C, 20°C, 30°C, and 37°C were are 41 days, 24 days, 14 days, and 9 days. Meanwhile, non-vacuum packaging has a shelf life of 32 days, 25 days, 13 days, and 8 days.

**Keywords:** ASLT, packaging, quality, probiotic snack bar, shelf life