

ABSTRAK

(Aristawidya Ambara Tanaris. 26060122140084. Pendugaan Umur Simpan Bubuk Flavor Udang Rebon (*Acetes* sp.) dengan Metode *Accelerated Shelf Life Testing* (ASLT) melalui Pendekatan Kadar Air Kritis. Lukita Purnamayati dan Slamet Suharto).

Produk bubuk flavor udang rebon merupakan produk bubuk yang ditambahkan ke makanan untuk menciptakan rasa umami khas udang. Produk ini sangat berpotensi untuk diproduksi dan dipasarkan oleh masyarakat sebagai penyedap rasa alami pengganti penggunaan MSG. Produk bubuk memiliki sifat higroskopis yang menyebabkan penggumpalan, sehingga diperlukan pendugaan umur simpan agar mutu produk tetap terjaga hingga sampai ke tangan konsumen. Penelitian ini bertujuan untuk mengetahui pengaruh RH penyimpanan yang berbeda terhadap umur simpan bubuk flavor udang rebon dan menentukan umur simpannya. Pendugaan umur simpan menggunakan metode *Accelerated Shelf Life Testing* (ASLT) dengan pendekatan kadar air kritis. Tahapan penelitian meliputi pembuatan flavor bubuk udang rebon kemudian dilakukan kontrol RH lingkungan penyimpanan. Kadar air kritis dianalisis melalui kurva Isoterm Sorpsi Lembab (ISL). Hasil penelitian menunjukkan kadar air awal produk sebesar 3,90% (bk) dan kadar air kritis 5,51 % (bk). Model Henderson dipilih sebagai persamaan isoterm sorpsi terbaik dengan nilai *Mean Relative Deviation* (MRD) terkecil sebesar 2,41 dan *slope* (b) sebesar 1,8653. Permeabilitas kemasan sebesar 0,0744 g/m².hari.mmHg dengan luas kemasan 0,0588 m², diukur pada tekanan uap jenuh pelarut 31,82 mmHg. Penelitian ini menghasilkan umur simpan 28 bulan pada RH 74% yang dikemas menggunakan *standing pouch* aluminium foil. Bubuk flavor udang didapatkan selang kepercayaan sebesar $8,32 \leq \mu \leq 8,82$ (disukai panelis) dengan warna kuning-kemerahan, kadar protein sebesar 57,53% - 61,80%; lemak sebesar 3,26% - 5,02%; asam amino dominan yaitu asam glutamat, asam aspartat dan leusin serta TPC sebesar $5,7 \times 10^3$ - $1,6 \times 10^4$.

Kata kunci : *Accelerated Shelf-Life Testing* (ASLT), Flavor, *Relative Humidity*, Udang rebon, Umur simpan.

ABSTRACT

(Aristawidya Ambara Tanaris. 26060122140084. Shelf Life Estimation of Rebon Shrimp (*Acetes* sp.) Flavor Powder Using the Accelerated Shelf Life Testing (ASLT) Method with Critical Moisture Content Approach. Lukita Purnamayati and Slamet Suharto).

Rebon shrimp flavor powder is a product added to food to create the umami taste of shrimp. This product has significant potential to be produced and marketed by the public as a natural flavor enhancer to replace the use of MSG. Powdered products have hygroscopic properties that cause caking, shelf-life estimation is needed to maintain product quality until it reaches consumers. This study aims to determine the effect of different storage Relative Humidity (RH) on the shelf life of rebon shrimp flavor powder and to determine its shelf life. Shelf-life estimation was conducted using the Accelerated Shelf Life Testing (ASLT) method with a critical moisture content approach. The research stages included the preparation of rebon shrimp flavor powder, followed by controlling the RH of the storage environment. Critical moisture content was analyzed through the Moisture Sorption Isotherm (MSI) curve. The results showed an initial moisture content of the product of 3.90% (db) and a critical moisture content of 5.51% (db). The Henderson model was selected as the best sorption isotherm equation, with the smallest Mean Relative Deviation (MRD) value of 2.41 and a slope (b) of 1.8653. The packaging permeability was 0.0744 g/m².day.mmHg with a packaging area of 0.0588 m², measured at a saturated solvent vapor pressure of 31.82 mmHg. This study produced a shelf life of 28 months at 74% RH when packaged using an aluminum foil standing pouch. The shrimp flavor powder had a confidence interval of $8.32 \leq \mu \leq 8.82$ (favored by panelists), a reddish-yellow color, protein content of 57.53% - 61.80%, fat content of 3.26% - 5.02%, dominant amino acids being glutamic acid, aspartic acid, and leucine, and a TPC of 5.7×10^3 - 1.6×10^4 .

Keywords : Accelerated Shelf-Life Testing (ASLT), Flavor, Rebon shrimp, Relative Humidity, Shelf life.