SHELF STABILITY OF PASTEURIZED VACUUM-PACKAGED TEMPE AT ROOM TEMPERATURE

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ABSTRAK

MELATI APRILANI PUTRI. Stabilitas Tempe Pasteurisasi Dikemas Vakum Selama Penyimpanan pada Suhu Ruang. Dibimbing oleh SUGIYONO.

Tempe, pangan fermentasi kapang asal Indonesia, merupakan sumber protein nabati yang bergizi, terjangkau, dan ramah lingkungan. Namun, distribusinya terbatas karena umur simpannya hanya 2 hari pada suhu ruang, sehingga diperlukan studi untuk memperpanjang umur simpan tempe dengan penerapan teknologi minimal yang mudah direplika oleh pengrajin tempe. Tujuan dari penelitian ini adalah menganalisis stabilitas tempe yang dikemas vakum dan dipasteurisasi selama penyimpanan pada suhu ruang. Penelitian ini terdiri atas dua tahap utama, yakni, pemilihan perlakuan waktu pasteurisasi tempe yang dikemas vakum dan penentuan umur simpan tempe pasteurisasi pada suhu ruang. Pada tahap pertama, tempe dipasteurisasi dalam air mendidih selama 10 (Pt1) dan 15 (Pt2) menit. Pemilihan waktu pasteurisasi dilakukan dengan uji sensori. Pada tahap kedua, dilakukan penyimpanan tempe pasteurisasi yang dipilih dari tahap pertama pada suhu ruang selama 4 hari. Selama penyimpanan, tempe pasteurisasi dianalisis pH, tekstur, angka lempeng total (ALT) dan sensori. Hasil penelitian tahap pertama menunjukkan tidak ada perbedaan nyata antara perlakuan Pt1 dan Pt2, sehingga keduanya dilanjutkan ke tahap kedua. Hasil penelitian tahap kedua menunjukkan bahwa selama penyimpanan pH dan tekstur tempe pasteurisasi cenderung tetap, dan terdapat perbedaan nyata nilai sensori antara tempe pasteurisasi dan tempe kontrol (tidak dipasteurisasi). Berdasarkan skor sensori, tempe pasteurisasi Pt1 dan Pt2 masih dapat diterima panelis setelah 4 hari penyimpanan pada suhu ruang, sedangkan tempe kontrol tidak dapat diterima oleh panelis setelah 2 hari penyimpanan. Tempe dengan perlakuan pasteurisasi 15 menit menunjukkan hasil pengamatan selama penyimpanan yang lebih baik dan seragam, serta memenuhi pemanasan minimum 6D terhadap *Clostridum botulinum* tipe E dengan nilai pasteurisasi suhu 85°C selama 7.2 menit. Penyajian tempe pasteurisasi disarankan untuk tidak dimakan secara langsung, melainkan harus dimasak terlebih dahulu.

Kata kunci: tempe pasteurisasi, kemasan vakum, stabilitas penyimpanan, suhu ruang, evaluasi sensori

ABSTRACT

MELATI APRILANI PUTRI. Shelf Stability of Pasteurized Vacuum-Packaged Tempe at Room Temperature. Supervised by SUGIYONO.

Tempe, a fungi-fermented soybean product from Indonesia, is a nutritious, affordable, and sustainable source of plant protein. However, its distribution is limited due to its short shelf-stability of 2 days at room temperature, entailing studies to extend its shelf-stability using minimal technology that is replicable for tempe producers. The study aimed to analyze the shelf-stability of pasteurized vacuum-packaged tempe at room temperature. The study consisted of two main stages: the selection of pasteurization time for vacuum-packaged tempe and the shelf-stability determination of pasteurized tempe at room temperature. In the first stage, tempe was pasteurized in boiling water for 10 (Pt1) and 15 (Pt2) minutes. Pasteurization time was selected through sensory testing. In the second stage, the pasteurized tempe selected from the first stage was stored at room temperature for 4 days. During storage, the pasteurized tempe was analyzed for pH, texture, total plate count (TPC), and sensory attributes. The first stage result showed no significant difference between Pt1 and Pt2 treatments, so both samples proceeded to the second stage. The second stage results indicated that during storage, the pH and texture of pasteurized tempe remained stable, with significant differences sensory assessments between pasteurized tempe and control tempe (non-pasteurized). Based on sensory evaluation, Pt1 and Pt2 pasteurized tempe had a good acceptability to the panelists after 4 days of storage, while control tempe was not acceptable anymore after 2 days of storage. Tempe with 15 minutes pasteurization treatment shown better and consistent result during storage, altogether fulfilling the minimum heat of 6D for *Clostridium botulinum* type E with pasteurization value of 7.2 minutes. Pasteurized tempe is not recommended to be served as raw, rather to be cooked before serving.

Keywords: pasteurized tempe, vacuum-packaging, shelf stability, ambient temperature, sensory evaluation

SHELF STABILITY OF PASTEURIZED VACUUM-PACKAGED TEMPE AT ROOM TEMPERATURE

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PREFACE

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May this research be beneficial for those in need and for the advancement of production and distribution of tempe in Indonesia,

Bogor, 15 August 2024

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