

ABSTRAK

SARAH ROSA ELKANA MANALU, 2025, ANALISIS KUANTITATIF PENGARUH KONSENTRASI GARAM TERHADAP KANDUNGAN PROTEIN PADA TEMPE KEDELAI DENGAN METODE KJELDAHL, KARYA TULIS ILMIAH, PROGRAM STUDI D-III ANALIS FARMASI DAN MAKANAN, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI. Dibimbing oleh apt. Dian Marlina, S.Farm.,M.Sc., M.Si., Ph.D.

Tempe kedelai merupakan salah satu produk pangan fermentasi tradisional yang kaya akan protein dan berkontribusi dalam pemenuhan gizi masyarakat. Praktik pengolahan tempe dengan perendaman dalam larutan garam sering dilakukan sebelum konsumsi, namun dampak penurunan kadar protein tempe kedelai setelah perendaman garam belum banyak diteliti. Penelitian ini bertujuan untuk mengetahui pengaruh perendaman tempe dalam larutan garam konsentrasi 1%, 3%, dan 5% terhadap kadar protein tempe kedelai.

Metode yang digunakan adalah eksperimen laboratorium dengan desain perlakuan perendaman dalam larutan garam selama 30 menit pada konsentrasi 1%, 3%, dan 5%, serta kontrol tanpa perendaman larutan garam yang dilakukan pada suhu ruang. Analisis kadar protein dilakukan menggunakan metode Kjeldahl, yang mencakup tahapan destruksi, destilasi, dan titrasi. Data dianalisis menggunakan uji ANOVA satu arah dan uji lanjut Tukey HSD dengan tingkat signifikansi 5%.

Hasil menunjukkan kadar protein tempe tanpa perendaman larutan garam sebesar 10,67%, sementara tempe yang direndam dalam larutan garam 1%, 3%, dan 5% masing-masing memiliki kadar protein sebesar 6,07%, 8,92%, dan 9,35%. Hasil uji ANOVA menunjukkan adanya perbedaan yang signifikan antar perlakuan ($p < 0,05$). Perendaman dalam larutan garam berpengaruh signifikan terhadap kadar protein tempe, dengan konsentrasi 1% menyebabkan penurunan kadar protein tertinggi.

Kata kunci: tempe kedelai, perendaman garam, kadar protein, metode Kjeldahl, uji ANOVA

ABSTRACT

SARAH ROSA ELKANA MANALU, 2025, QUANTITATIVE ANALYSIS OF THE EFFECT OF SALT CONCENTRATION ON PROTEIN CONTENT IN SOYBEAN TEMPEH USING THE KJELDAHL METHOD, SCIENTIFIC PAPERS, DIPLOMA OF PHARMACY AND FOOD ANALYSIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Supervised by apt. Dian Marlina, S.Farm.,M.Sc., M.Si., Ph.D.

Soybean tempeh is a traditional fermented food product rich in protein and contributes to the nutritional needs of the population. One common post-fermentation processing practice is soaking tempeh in salt solutions prior to consumption; however, its effect on protein content has not been widely studied. This study aimed to determine the effect of soaking tempeh in salt solutions with concentrations of 1%, 3%, and 5% on the protein content of soybean tempeh.

The research was conducted through a laboratory experimental design, in which tempeh samples were immersed in salt solutions with the specified concentrations for 30 minutes at room temperature. A control group, consisting of tempeh without salt solution immersion, was included for comparison. Protein content was determined using the Kjeldahl method, comprising the processes of digestion, distillation, and titration. Data were statistically analyzed using one-way ANOVA and Tukey's HSD post hoc test at a 5% significance level.

The results demonstrated that the control sample had a protein content of 10.67%, while the samples immersed in 1%, 3%, and 5% salt solutions showed protein contents of 6.07%, 8.92%, and 9.35%, respectively. Immersion in salt solution significantly affected protein content ($p < 0.05$), with 1% concentration yielding the greatest reduction.

Keywords: soybean tempeh, salt soaking, protein content, Kjeldahl method, ANOVA test