

# PENGARUH KONSENTRASI EKSTRAK BAWANG PUTIH (*Allium sativum* L.) TERHADAP MUTU MIKROBIOLOGIS TAHU SELAMA PENYIMPANAN

*(The Effect of Garlic (*Allium sativum* L.) Extract Concentration on Microbiological Quality of Tofu During Storage)*

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## **ABSTRACT**

*This study aimed to determine the correct concentration of garlic extract to maintain the microbiological quality of tofu during storage. The study used an experimental method with a single factor completely randomized design (concentration: 0%, 5%, 10%, 15%, 20% and 25% ) which was repeated 3 times to produce 18 units of the test. The parameters analyzed in this study were pH, protein content, total microbes, total *Escherichia coli*, and organoleptic include scoring and hedonik (aroma, color and texture) of tofu at 0, 24 and 48 hours of storage at room temperature. The data were analyzed using analysis of variance with a 5% significance level using software named Costat. If there is was a significant difference, a further test was carried the Orthogonal Polynomial test for chemical and microbiological parameters, and the Honest Real Difference (Beda Nyata Jujur/BNJ) for organoleptic parameters. The results showed that the concentration of 15% garlic extract was the best treatment for the microbiological quality of tofu during storage based on the total number of bacteria  $9.25 \times 10^5$  CFU / ml which is still below the maximum limit of total number of bacteria based on SNI 01-3142-1992, the total number of *Escherichia coli* 9.8 APM / g which is still below the maximum limit of total number of *Escherichia coli* based on SNI 01-3142-1998, protein content of 9,26 and pH of 5.91 as well as the organoleptic quality received by the panelists.*

**Keywords:** *Garlic (*Allium sativum* L.), storage, Tofu*

## **ABSTRAK**

Penelitian ini bertujuan untuk mengetahui konsentrasi ekstrak bawang putih yang tepat untuk mempertahankan mutu mikrobiologis tahu selama penyimpanan. Metode penelitian yang digunakan adalah metode eksperimental dengan Rancangan Acak Lengkap (RAL) faktor tunggal (konsentrasi: 0%, 5%, 10%, 15%, 20% dan 25%) yang diulang sebanyak 3 kali sehingga menghasilkan 18 unit percobaan. Parameter yang dianalisis pada penelitian ini adalah pH, kadar protein, total mikroba, total *Escherichia coli*, serta organoleptik skoring dan hedonik (aroma, warna dan tekstur) tahu pada 0, 24 dan 48 jam penyimpanan pada suhu ruang. Data hasil pengamatan dianalisis menggunakan analisis keragaman (*Analysis of Variance*) dengan taraf nyata 5% dengan menggunakan software *Costat*. Apabila terdapat beda nyata, dilakukan uji lanjut *Polynomial Orthogonal* untuk parameter kimia dan mikrobiologis, Beda Nyata Jujur (BNJ) untuk parameter organoleptik. Hasil penelitian menunjukkan bahwa konsentrasi 15% ekstrak bawang putih merupakan perlakuan terbaik terhadap mutu mikrobiologis tahu selama penyimpanan berdasarkan jumlah total mikroba  $9,25 \times 10^5$  CFU/ml yang masih di bawah batas maksimum total mikroba berdasarkan SNI 01-3142-1992, jumlah total *Escherichia coli* 9,8 APM/g yang masih di bawah batas maksimum total mikroba berdasarkan SNI 01-3142-1998, kadar protein 9,26 dan pH 5,91 serta mutu organoleptik yang diterima panelis.

**Kata Kunci:** Bawang putih (*Allium sativum* L.), penyimpanan, tahu