

Adi Saputra. NPM 21.03.3.1.100040. Efek Kombinasi Putih Telur Dan Lesitin Terhadap Sifat Fisik Bubuk Susu Kedelai Fermentasi. Di Bawah Bimbingan **Dr. Darimiyya Hidayati, S.TP., M.P. dan Mojiono, S.TP., M.Si.**

ABSTRAK

Produk pangan berbentuk bubuk, seperti bubuk susu kedelai fermentasi, memiliki keunggulan dalam hal daya simpan dan kemudahan konsumsi, namun kerap menghadapi persoalan terkait mutu fisik seperti warna yang pucat dan nilai gizi yang kurang optimal. Inovasi dengan penambahan kombinasi putih telur (*foaming agent*) dan lesitin (*emulsifier*) diharapkan dapat memperbaiki karakteristik fisik produk tersebut. Tujuan penelitian ini adalah menganalisis efek konsentrasi *foaming agent* (putih telur) dan *emulsifier* (lesitin) terhadap sifat fisik bubuk susu kedelai fermentasi, khususnya pada parameter *water solubility index* (WSI), *water absorption index* (WAI), *flowability*, dan warna. Metode yang digunakan adalah eksperimen dengan teknik *foam mat drying*, di mana variasi konsentrasi putih telur dan lesitin ditambahkan pada susu kedelai fermentasi sebelum proses pengeringan. Sampel kemudian dianalisis secara fisik meliputi nilai WAI, WSI, *flowability*, dan parameter warna dengan uji statistik untuk mengetahui signifikansi perbedaan antar perlakuan. Hasil penelitian menunjukkan bahwa penambahan putih telur mampu meningkatkan nilai rendemen serta menjaga warna dan tekstur produk, sedangkan penambahan lesitin tidak memberikan pengaruh signifikan pada beberapa parameter fisik, namun tetap berperan menstabilkan emulsi antara fase air dan minyak. Kombinasi konsentrasi tertentu antara putih telur dan lesitin memberikan hasil terbaik pada karakteristik fisik produk, utamanya pada *flowability* dan warna bubuk yang lebih menarik. Kombinasi penambahan putih telur dan lesitin pada proses *foam mat drying* efektif meningkatkan mutu fisik bubuk susu kedelai fermentasi. Penambahan putih telur berdampak signifikan dalam meningkatkan tekstur dan warna, sementara lesitin berperan sebagai emulsifier meskipun pengaruhnya tidak terlalu signifikan dalam beberapa parameter fisik, namun tetap membantu stabilitas emulsi produk akhir.

Kata Kunci : *Flowability*, Lesitin, Susu Kedelai, Warna

Adi Saputra. NPM 21.03.3.1.100040. *Effect Of The Combination Of Egg Whites And Lecithin On The Physical Properties Of Fermented Soy Milk Powder. Under the guidance of Dr. Darimiyya Hidayati, S.TP., M.P. and Mojiono, S.TP., M.Si.*

ABSTRACT

Powdered food products, such as fermented soy milk powder, have advantages in terms of shelf life and ease of consumption, but often face problems related to physical quality such as pale color and less than optimal nutritional value. Innovation by adding a combination of egg white (foaming agent) and lecithin (emulsifier) is expected to improve the physical characteristics of the product. The purpose of this study was to analyze the effect of the concentration of foaming agent (egg white) and emulsifier (lecithin) on the physical properties of fermented soy milk powder, specifically on the parameters of water solubility index (WSI), water absorption index (WAI), flowability, and color. The method used was an experiment with the foam mat drying technique, where various concentrations of egg white and lecithin were added to the fermented soy milk before the drying process. The samples were then analyzed physically including the values of WAI, WSI, flowability, and color parameters with statistical tests to determine the significance of differences between treatments. The results showed that the addition of egg white was able to increase the yield value and maintain the color and texture of the product, while the addition of lecithin did not have a significant effect on several physical parameters, but still played a role in stabilizing the emulsion between the water and oil phases. A specific combination of egg white and lecithin concentrations yields the best results for the product's physical characteristics, particularly flowability and a more attractive powder color. The addition of egg white and lecithin during the foam mat drying process effectively improves the physical quality of fermented soy milk powder. The addition of egg white significantly improves texture and color, while lecithin acts as an emulsifier, although its effects are less significant in some physical parameters, but it still contributes to the stability of the final product's emulsion.

Keywords: *Flowability, Lecithin, Soy Milk, Color*