PENGARUH JENIS KEMASAN DAN LAMA PENYIMPANAN TERHADAP KUALITAS FISIKO-KIMIA DAN TOTAL BAKTERI *Pediococcus acidilactici* BE PADA SUSU BUBUK PROBIOTIK

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INTISARI

Penyimpanan susu bubuk probiotik dalam kemasan dan lama penyimpanan tertentu memungkinkan terjadinya perubahan kualitas. Penelitian ini bertujuan untuk mengetahui pengaruh jenis kemasan, lama penyimpanan, dan interaksi antara jenis kemasan dan lama penyimpanan terhadap kualitas fisiko-kimia dan total bakteri *Pediococcus acidilactici* BE pada susu bubuk probiotik yang disimpan pada suhu ruang. Penelitian ini menggunakan metode *Two-way* ANOVA dengan uji lanjutan *Duncan Multiple Range Test* (DMRT). Perlakuan pada penelitian ini dilakukan dengan menyimpan susu bubuk probiotik dalam jenis kemasan dan lama penyimpanan berbeda kemudian dilanjutkan pengujian fisiko-kimia dan total Bakteri Asam Laktat (BAL). Susu bubuk probiotik dibuat dengan penambahan kultur starter *Pediococcus acidilactici* BE. Susu bubuk probiotik disimpan dalam kemasan *alumunium foil* dan *kraft paper* dengan lama penyimpanan 4 minggu dan 8 minggu. Parameter yang diamati, yaitu *insolubility index, wettability,* warna (L*, a*, dan b*), kadar air, *total solid*, aktivitas air, pH, keasaman, bilangan peroksida, asam lemak bebas (oleat dan palmitat), dan total BAL susu bubuk probiotik. Hasil analisis menunjukkan bahwa penyimpanan susu bubuk probiotik dengan jenis kemasan dan lama penyimpanan berbeda berpengaruh nyata terhadap (P<0,05) *insolubility index, wettability,* warna (L*, a*, dan b*), kadar air, *total solid*, aktivitas air, bilangan peroksida, dan asam oleat. Penyimpanan susu bubuk probiotik dalam jenis kemasan berbeda berpengaruh nyata terhadap (P<0,05) *insolubility index, wettability,* warna (a* dan b*), kadar air, *total solid*, pH, bilangan peroksida, dan total BAL. Penyimpanan susu bubuk probiotik dengan lama penyimpanan berbeda berpengaruh nyata terhadap (P<0,05) warna (L*, a*, dan b*), aktivitas air, pH, bilangan peroksida, asam oleat, dan asam palmitat. Penyimpanan susu bubuk probiotik menggunakan *alumunium foil* lebih baik daripada *kraft paper*, penyimpanan susu bubuk probiotik selama 4 minggu lebih baik daripada 8 minggu, dan penyimpanan dalam *alumunium foil* selama 4 minggu merupakan interaksi paling baik.

(Kata kunci: Susu Bubuk, Probiotik, Kemasan, Penyimpanan)

THE EFFECT OF PACKAGING TYPE AND STORAGE TIME ON THE PHYSICO-CHEMICAL QUALITY AND TOTAL BACTERIA OF *Pediococcus acidilactici* BE IN PROBIOTIC MILK POWDER

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ABSTRACT

The storage of probiotic milk powder in certain types of packaging a long with keeping time allows for changes due to the properties of milk that are perishable. The aim of this research was to determine the effect of packaging type, storage time, and interaction between packaging type and storage period on the physicochemical quality and total bacteria of *Pediococcus acidilactici* BE in probiotic milk powder that stored at room temperature. This research was conducted using Two-way ANOVA method with the follow-up test Duncan Multiple Range Test (DMRT). The treatment in this study was carried out by storing probiotic milk powder in different types of packaging and storage time, then followed by physicochemical testing and total Lactic Acid Bacteria (LAB) testing. Probiotic milk powder is made with the addition of starter culture *Pediococcus acidilactici* BE. Probiotic milk powder was stored in alumunium foil and kraft paper with a storage time of 4 weeks and 8 weeks. The parameters observed were insolubility index, wettability, color (L*, a*, and b*), air content, total solids, water activity, pH, acidity, peroxide value, free fatty acids (oleic and palmitic), and total LAB of probiotic milk powder. The results of the analysis showed that the storage of probiotic milk powder with different types of packaging and storage time had a significant effect on ($P<0.05$) insolubility index, wettability, color (L*, a*, and b*), water content, total solids, activity water, peroxide value, and oleic acid. The storage of probiotic milk powder with different types of packaging had a significant effect on ($P<0.05$) insolubility index, wettability, color (a* and b*), water content, total solid, pH, peroxide value, and oleic acid. The storage of probiotic milk powder with different storage time had a significant effect on ($P<0.05$) color (L*, a*, and b*), activity water, pH, peroxide value, oleic acid, and pamitic acid. Probiotic milk powder storage using alumunium foil is better than kraft paper, probiotic milk powder storage for 4 weeks is better than 8 weeks, and storage in alumunium foil for 4 weeks is the best interaction.

(Key Words: Milk Powder, Probiotic, Packaging, Storage)