

ABSTRACT

Siti Rohmah Nur Syayyidah, 2026, The Utilization of Natural Colorants on the Physical Characteristics of Yogurt and Ice Cream Based on Red Kidney Bean Milk (*Phaseolus vulgaris* L.). Supervised by Prof. Dr. Hj. Mia Nurkanti, M.Kes., and Dr. Fitri Aryanti, S.T., M.Pd.

*Red kidney bean milk (*Phaseolus vulgaris* L.) is a plant-based food ingredient with the potential to be processed into yogurt and ice cream. The use of natural colorants in food products has increasingly developed as an alternative to synthetic colorants that are safer for health. This study aimed to determine the physical characteristics of red kidney bean milk-based yogurt and ice cream under control treatment (without colorant), addition of purple cabbage extract, and addition of carrot extract. The research employed an experimental method with three treatments and nine replications. The observed parameters included yogurt pH and viscosity, as well as ice cream overrun and melting time. Data were analyzed using descriptive analysis, One-Way Analysis of Variance (ANOVA), and Duncan Multiple Range Test (DMRT). The results showed that the treatments had a significant effect ($p < 0.05$) on all observed parameters. The yogurt pH ranged from 5.44 to 5.49, yogurt viscosity ranged from 2560.11 to 4856.33 cP, ice cream overrun ranged from 14.94% to 44.82%, and melting time ranged from 1933.00 to 2317.89 seconds. The purple cabbage extract treatment produced the highest overrun value of 44.82%, while the carrot extract treatment resulted in the longest melting time of 2317.89 seconds. It can be concluded that the utilization of natural colorants from purple cabbage extract and carrot extract affects the physical characteristics of red kidney bean milk-based yogurt and ice cream and has the potential to be used as an alternative natural colorant in food products.*

Keywords: Carrot, Ice Cream, Natural Colorant, Purple Cabbage, Red Kidney Bean Milk, Yogurt.