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Value addition to ice cream by fortification with okara and probiotic

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**Authors:**

*Ilya Nasuha Ibrahim,  
Noor Azlina Kamaruding,  
Noraznawati Ismail,  
Shahrulzaman Shahrudin*

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**Abstract:**

Synbiotic ice cream offers sufficient viable probiotics and value-added nutrients to satisfy health needs. This study aimed to formulate the optimum synbiotic ice cream incorporated with okara (1–3%) and the probiotic, *Lactobacillus plantarum* (ATCC 8014). Results showed a viscous texture was produced when more than 2% okara was added to ice cream. This formulation also minimally caused ice cream to melt for around 90 min at a melting rate of 19–76%. Furthermore, ice cream incorporated with okara had an increase in protein content (>5%) and a decrease in fat content (>13%) compared with the control (no okara), indicating that it is a low-fat item. The addition of more than 2% okara increased the viability of *L. plantarum* on day 60. Overall, 1% okara addition showed significant acceptability for potential symbiotic ice cream formulation. Novelty impact statement: One of the greatest challenges in the ice cream manufacturing industry is the short shelf-life and fast melting rate of milk-based ice cream, as it lowers a storage period and affects the textural characteristic. To overcome the said problems, the use of soybean by-product (okara), a potential prebiotic for dietary fiber source, was found to minimally caused ice cream to melt and was able to increase the viability of *Lactobacillus plantarum*. The function of dietary fiber is not only able to support the growth of probiotics, but also scientifically proven to strengthen the digestive system and reduce the possibility of developing diseases including cardiovascular diseases, diabetes, constipation, and bowel cancer.