



Research article

DEVELOPMENT OF SYNBIOTIC MARSHMALLOW USING INDIGENOUS PROBIOTIC *LACTOBACILLUS PLANTARUM* DAD-13 AND KONJAC GLUCOMANNAN

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Abstract

A synbiotic food is a dietary product that combines probiotic and prebiotic properties. People prefer healthy food and snacks that offer health benefits. A synbiotic marshmallow incorporating *L. plantarum* Dad-13 and konjac glucomannan has been developed, yet sensory acceptance and characterization have not been conducted. This study aimed to examine consumer acceptance and the effect of konjac glucomannan substitution on the characteristics and sensory acceptance of synbiotic marshmallows. A consumer survey was conducted to evaluate consumers' knowledge of probiotics, prebiotics, and synbiotics and their intention to buy the product. Synbiotic marshmallows were produced by combining a sugar solution (sucrose and glucose) with gelatin and konjac glucomannan in certain concentration ratios of P1 (9%:0%), P2 (8.5%:0.5%), P3 (8%:1%), P4 (7.5%:1.5%), and P5 (7%:2%) (w/v), followed by the addition of probiotic powder *L. plantarum* Dad-13. The experiment was designed using a Completely Randomized Design, and the non-parametric data were analyzed using Kruskal-Wallis followed by the Mann-Whitney U Test. Sensory evaluation, including Just-About-Right (JAR) and penalty analyses, and the viability of *L. plantarum* Dad-13, were also evaluated. Survey results indicated that consumers had knowledge of the health benefits of probiotics, prebiotics, and synbiotics. The substitution of gelatin and konjac glucomannan at 8.5%:0.5% was the most preferred formula for all sensory attributes (color, aroma, texture, and taste). The addition of konjac glucomannan did not affect the viability, which remained at 6.33 ± 0.07 log CFU/g. However, JAR and penalty analyses indicated that the sweetness intensity of P2 required adjustment to improve consumer acceptance.