

Physicochemical Properties, Fatty Acid Profiles, and Sensory Characteristics of Fermented Beef Sausage by Probiotics *Lactobacillus plantarum* IIA-2C12 or *Lactobacillus acidophilus* IIA-2B4

Abstract

Probiotics may be used to enhance the functionality and nutritional values of fermented sausages. This study aims to evaluate the physicochemical and sensory properties of beef sausages fermented by lactic acid bacteria of *Lactobacillus plantarum* IIA-2C12 and *L. acidophilus* IIA-2B4. These strains were isolated from beef cattle and have shown to display probiotic features. While the nutrient contents were not affected by the probiotics, the pH, texture, and color varied among the sausages. Further analysis on fatty acids showed different profiles of saturated (C14:0, C17:0, and C20:0) and unsaturated (C14:1, C18:1n9c, C18:2n6c, and C22:6n3) fatty acids in sausages with probiotics. Gas chromatography–mass spectrometry further revealed some flavor development compounds including acid, alcohols, aldehydes, aromatic, ketones, sulfur, hydrocarbons and terpenes, varied among the sausages. Hedonic test showed no difference in the preference toward aroma, texture, and color for untrained panelists.