

Indigenous Probiotic Culture in Yogurt Added with Purple Sweet Potato Extract: Study on Microbiological and Physicochemical Properties

Agustina Intan Niken Tari*, Catur Budi Handayani, and Ali Mursyid Wahyu Mulyono

Study Program of Agricultural Product Technology, Universitas Veteran Bangun Nusantara, Jl. Letjen S. Humardani No 1 Jombor Sukoharjo 57521.
Email: intanniken@gmail.com

ABSTRACT

This study was aimed to determine the effect of indigenous probiotic lactic acid bacteria on quality of yogurt added with purple sweet potato extract in terms of microbiological, physical (pH, viscosity and chromatic colors), and chemical (content of titratable acid, moisture, ash, reducing sugar, soluble protein, and fat) properties. Single direction completely randomized design was used as experimental design with 4 treatments of various indigenous probiotic bacteria and purple sweet potato extract (10% v/v). Y0 was control sample of commercial culture, contained mixture of *Streptococcus thermophilus* FNCC 0040 (St) and *Lactobacillus bulgaricus* FNCC 0041 (Lb) in the ratio of 1:1; Y1 was mixture of commercial culture and indigenous probiotic *Lactobacillus plantarum* Dad13 with ratio of St : Lb : Dad13 1:1:0.5; Y2 was mixture of commercial culture and indigenous probiotic *Lactobacillus plantarum* Mut7 with St : Lb : Mut7 1:1:0.5; Y3 was mixture of commercial culture and indigenous probiotic *Lactobacillus acidophilus* SNP-2 with ratio of St : Lb : SNP-2 1:1:0.5, each treatment was repeated three times. Yogurt made using Y1 was the most preferable, with viable cell count of 10^9 CFU/ml after 2 weeks storage, pH of 3.78, viscosity of 519.667 cP, chromatic color of 18.559, moisture content t of 85.266%, lactic acid content t of 1.273%, 0.8041% ash content, reducing sugar of 3.3278%, soluble protein content t of 1.478% and fat content of 0.08%.

Keywords: indigenous, physicochemical, probiotic, purple sweet potato extract, yogurt