

Karakteristik Fisik dan Sensoris Keju Mozzarella Yang Diproduksi Dengan Penambahan Enzim Laktase

Physical and Sensory Characteristics of Mozzarella Cheese Produced with the Addition of Lactase Enzyme

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ABSTRACT

Mozzarella cheese is a fresh cheese characterized by its soft, elastic texture and milky savory flavor. This study aimed to investigate the effect of lactase enzyme addition on the physical and sensory characteristics of mozzarella cheese, as well as to determine the optimal enzyme concentration. A Completely Randomized Design (CRD) was used with five levels of lactase enzyme concentration: 0% (E1), 0.15% (E2), 0.30% (E3), 0.45% (E4), and 0.60% (E5), each with four replications. The observed parameters included enzyme activity, lactic acid bacteria (LAB) count, hardness, moisture content, total solids, meltability, stretchability, and sensory evaluation. The data were analyzed using Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that the lactase enzyme was active, producing 500 mg/dL of glucose through hydrolysis, and LAB counts ranged from 4,200 to 10,800 CFU/mL. The addition of lactase had a significant effect on hardness (up to $17,62 \pm 0,72$ mm), increased moisture content, decreased total solids, and improved meltability (up to 1.95 cm) and stretchability (up to 27.50 cm), with the best results observed in treatment E5 (0.60%). There were no statistically significant differences in sensory attributes among the treatments.

Keywords: *Lactase enzyme, Mozzarella cheese, Physical characteristics, Sensory evaluation*