PHYSICOCHEMICAL CHARACTERISTICS AND MICROSTRUCTURAL PROFILES OF COTTAGE CHEESE USING PINEAPPLE BROMELAIN ENZYME *[ananas comusus]* AS A NATURAL COAGULANT

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Abstract

Bromelin enzyme is a proteolytic that can help the hydrolisis of proteins into amino acids. In addition the bromelain enzym can also help the process of milk clumping, so that it can be aplied in cheese production. The research aims to analyse of the physicochemical characteristics and microstructural profile of cottage cheese using the enzyme bromelain from pineapple as a natural coagulant. The observed variables include protein, fat, moisture, ash, cheese yield . The research was conducted in a completely randomized design with 4 treatments [K0 =0%, K1 = 3%, K2 = 4%, K3 =5%], and 4 replications .All of the data were analysis of variance [Anova] and followed with significant difference[LSD] test. The results of the study concluded that a concentration of bromelin of 3% produced the best physicochemical properties of cottage cheese with the highest protein content and amendments as well as low water, fat and ash content, pH with a very noticeable difference of P≤0.01 from the treatment producing cheese containing 15.20±0.17% protein, fat content 2.12±0.01%, water content 44.31±0.12%, ash content 0.57±0.00%, yield of 10.18±0.09% and pH of 5.05. While the appearance of the microstructure indicates the presence of an interaction between the enzyme bromelin and the casein of milk protein. This suggests that the enzyme bromelin from pineapple extract can be used instead of cheap rennet in cheese making.

Keywords: *cheese, bromelin, pineapple, enzyme, proteolytic*