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As a Oral Presenter Entitled

"Processing of Gelatin From the Skin of *Pangasius hypophthalmus*  
using Papain Enzyme"

Pekanbaru, 15-16 September 2021



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# Processing of Gelatin from the Skin of *Pangasius hypophthalmus* Using Papain Enzyme

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**Abstract.** This study aimed to determine the processing of gelatin of catfish skin using the papain enzyme in 3 different concentrations. The method used was an experiment with a factorial Completely Randomized Design (CRD). The experiment consisted of 2 factors, namely papain enzyme concentration and the immersion time of the enzyme with 3 replications. The first factor consisted of 3 levels, namely the use of papain enzymes P1 (2%), P2 (4%) and P3 (6%). The second factor, the immersion time consisted of 3 levels of 25 minutes (W1), 35 minutes (W2) and 45 minutes (W3). The data were analyzed by using CRD. The results showed that the combination of P2W1 showed the best viscosity and gel strength (6.77 CP and 115.17 g bloom).

## 1. Introduction

Gelatin is a type of protein obtained from natural collagen found in skin and bones [1]. Collagen tissue in animals is found in cartilage, bone, skin and connective tissue. Gelatin is a component produced from the cooking process of skin, connective tissue, cartilage and animal bones. The use of gelatin is now widespread, both for food products and for non-food products. Data obtained from the Center for Data and Information of the Ministry of Industry and Trade, the need for gelatin imports from year to year tends to increase. In 1999 Indonesia imported 1,918 tons from France, Japan, India, Brazil, Germany, New Zealand, the Netherlands, China, Argentina and Australia. In 2003 the number of imports increased to 6,233 tons. With such an increase, it is estimated that in 10 years Indonesia will import gelatin of not less than 10, 548 tons.

So far, the main source of gelatin that has been extensively researched and utilized is derived from cow and pork skin bones. According to SKW biosystem data from a multinational company, 41.4% of the gelatin used came from pigs, 29.8% of beef bones, 28.7% of cow hides and the rest came from fish [2]. Catfish (*Pangasius hypophthalmus*) is known as a commodity with bright prospects. According [3], since its introduction in 1980, fish farming has continued to grow and in 2006 production reached 9,284.5 tons, an increase of 83.3% compared to 2003 which produced 7,730.6 tons.



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