

ABSTRACT

CHITIN ISOLATION FROM SHRIMP SHELL WITH ULTRASONIC RADIATION WAVE

By :

Novitasari 3335160067

Fedlila Syokeni Indra 3335160080

Shrimp waste (head and shell) which is very much often causes problems in the environment. Chitin is a multifunctional industrial material that can be used as a solution in processing shrimp waste in Indonesia. The purpose of this study was to extract shrimp waste by using ultrasonic radiation waves which can speed up reaction time and to determine the effect of NaOH and HCl, HCl+FeCl₃, on chitin characteristics including protein content, mineral content, water content, ash content, and functional groups. of chitin. The chitin isolation stage includes the preparation of raw materials, demineralization and deproteination using an ultrasonicator as a producer of ultrasonic radiation waves. The chitin obtained was tested by several analytical methods, namely protein analysis, moisture content, ash content, FTIR analysis, and SEM analysis. The results of this study indicate that the optimal demineralization process with 1 M HCl solution at a temperature of 70°C for 20 minutes is indicated by the total ash content of 0.3%. The addition of Lewis acid, namely FeCl₃, is optimal with the addition of 1% (wk). Optimal deproteination process with 2M NaOH solution at 60°C for 60 minutes with 4% Nitrogen content. The process of isolating shrimp into chitin obtained a yield of 48.2% (wk) and chitin content of 75.29% (wk), and the resulting chitin is insoluble in water and has a brownish yellow color.

Key Words: Demineralization. Deproteination, Chitin, Shrim Shell, Ultrasonication