

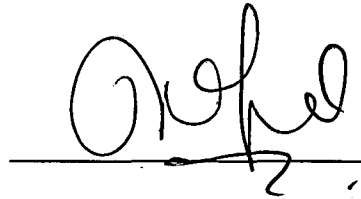
**OPTIMIZATION OF HYDROLYSIS CONDITIONS FOR THE  
PRODUCTION OF SHRIMP HYDROLYSATE BY USING PROTAMEX  
: EFFECT OF ENZYME SUBSTRATE (ES) RATIO AND TIME**

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**Final Year Project Report Submitted in  
Partial Fulfilment of the Requirements for the  
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in the Faculty of Applied Sciences  
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This Final Year Project Report entitled “**Optimization of Hydrolysis Conditions for the Production of Shrimp Hydrolysate by using Protamex : Effect of Enzyme Substrate (ES) Ratio and Time**” was submitted by Nurul Nadiah Binti Ahmad Latif, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Science and Food Technology, in the Faculty of Applied Sciences, and was approved by



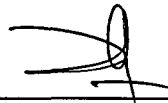
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## ABSTRACT

### **OPTIMIZATION OF HYDROLYSIS CONDITIONS FOR THE PRODUCTION OF SHRIMP HYDROLYSATE BY USING PROTAMEX : EFFECT OF ENZYME SUBSTRATE (ES) RATIO AND TIME**

The optimization of hydrolysis conditions which are enzyme substrate ratio and hydrolysis time for the production of shrimp hydrolysate by using protamex were studied. This study was done to obtain the optimum percentage for nitrogen recovery and degree of hydrolysis on the hydrolysis conditions. Methods for production of shrimp hydrolysate include homogenization, adjustment of pH and temperature, addition of enzyme and hydrolysis time which are based on response surface methodology (RSM) suggestion, termination of hydrolysis, cooled and centrifuged the hydrolysis sample, collection of supernatant and analysis for percentage of nitrogen recovery and degree of hydrolysis. Total nitrogen in supernatant was determined by using Kjeldhal method. The percentage of degree of hydrolysis was determined by using modified formol titration method. The data that were obtained from the experiment were accomplished by employing the RSM using Design Expert 4 Software. By fitting the experimental data to the equation, the percentage nitrogen recovery (%NR) optimum levels for time (240 min), ES ratio (0%), (%NR) (3.90308) with desirability (0.657) at constant pH 6 and constant temperature 60°C were determined. For percentage degree of hydrolysis (%DH), the optimum levels for time (0 min), ES ratio (4%), %DH (2.80186) with desirability (0.693) were determined.