THE OPTIMIZATION OF THE HYDROLYSIS CONDITIONS (EFFECT OF TEMPERATURE AND pH) FOR THE PRODUCTION OF CUTLASSFISH OR " IKAN TIMAH" (*TRICHIURUS LEPTURUS)* HYDROLYSATE

NOOR AQILA BINTI DERAHMAN

BACHELOR OF SCIENCE (Hons.)
FOOD SCIENCE & TECHNOLOGY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOG1 MARA

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This Final Year Project Report entitled " **The optimization of the hydrolysis conditions (effect of temperature and pH) for the production of Cutlassfish or "Ikan Timah" (*Trichiurus Lepturus*) hydrolysate** "was submitted by Noor Aqila Binti Derahman, in fulfillment of the requirements for the Degree of Bachelor Sciences (Hons.) Science and Food Technology, in the Faculty of Applied Sciences and was approved by

Dr. Normah Ismail
Supervisor
B.Sc. (Hons.) Food Sciences and Technology
Faculty of Applied Sciences
University Technologi Mara
40450 Shah Alam
Selangor

Madam Fuziah Bt Mohamed Othman
Project Coordinator
B.Sc.(Hons.) Food Sciences and Technology
Faculty of Applied Sciences
University Technologi Mara
40450 Shah Alam
Selangor

Assoc. Prof Dr. Noriham Abdullah
Head of Programme
B.Sc.(Hons.) Food Sciences and Technology
Faculty of Applied Sciences
University Technologi Mara
40450 Shah Alam
Selangor

Date:_____

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ABSTRACT

THE OPTIMIZATION OF THE HYDROLYSIS CONDITIONS (EFFECT OF TEMPERATURE AND pH) FOR THE PRODUCTION OF CUTLASSFISH OR "IKAN TIMAH" (*TRICHIURUS LEPTURUS)* HYDROLYSATE .

This study was done to determine the optimization of hydrolysis conditions in relation to the effect of pH and temperature on the production of Cuttlassfish hydrolysate by using alcalase. The analysis was done by obtaining the optimum percentage of nitrogen recovery and percentage of degree of hydrolysis after the Cuttlassfish was hydrolysed for 120 minutes and exposed to constant enzyme substrate ratio (2%). The production process of cuttlassfish hydrolysate includes homogenization, maintaining time and enzyme substrate ratio, adjust pH and temperature based on Response Surface Methodology (RSM), terminating enzyme, cooled, centrifuge, then the supernatant was collected to determine the percentage nitrogen recovery and degree of hydrolysis. Total nitrogen in supernatant was obtained using the Kjeldhal method and α-amino nitrogen was determined by formol titration method. All the data that were obtained from the analysis was analysed by employing the RSM using Design Expert 4 software. Model equation was proposed with proposed based on the effect of pH and temperature on the nitrogen recovery (NR) and degree of hydrolysis (DH). The optimum level for the percentage nitrogen recovery (%NR) at pH 4 and temperature 80°C is 1.30836 and desirability is 0.676. While for percentage of degree of hydrolysis at optimum level for pH 7.24, temperature 53.7°C is 4.41772 and desirability is 0.890.