

**OPTIMIZATION OF *KELI AFRIKA* (*Clarias gariepinus*) HYDROLYSATE
PRODUCTION BY ALCALASE: EFFECT OF pH AND TEMPERATURE**

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ABSTRACT

OPTIMIZATION OF 'KELI AFRIKA' (*Clarias gariepinus*) HYDROLYSATE PRODUCTION BY ALCALASE: EFFECT OF pH AND TEMPERATURE

Fish protein hydrolysate (FPH) was produced from 'Keli' an African catfish (*Clarias gariepinus*) which is one of the types of freshwater fish widely farm in Malaysia. The production for this hydrolysate was using Alcalase which is one of the protease enzymes. Hydrolysis conditions for preparing hydrolysate from the fish protein were optimized by response surface methodology (RSM) by employing a factorial design. The smaller and less time consuming experimental design could generally suffice for the optimization of many processes. The model equations were proposed with regard to the effects of temperature (T) and pH on the degree of hydrolysis (DH) and degree of nitrogen recovery (NR). An enzyme to substrate level of 2% (v/w), hydrolysis times of 2 hours with temperature and pH that have bear suggested by RSM were found to be the maximum condition to obtain a higher degree of hydrolysis at 78.28°C and pH 7 was 8.425% and for degree of nitrogen recovery at 70°C and pH 4 was 0.898%. In the optimization of 'Keli Afrika' hydrolysate production by Alcalase, there is no significant ($p > 0.05$) effect of temperature and pH on percentage of degree of hydrolysis and percentage of nitrogen recovery.