

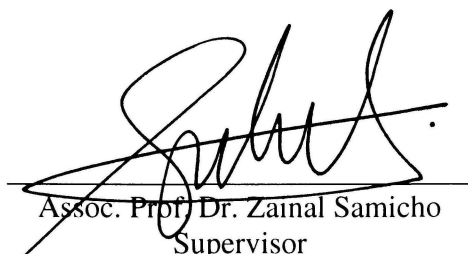
**OPTIMISATION OF HISTAMINE REDUCTION IN KAWAKAWA  
(*EUTHYNNUS AFFINIS*) BY RED ONION EXTRACT USING  
RESPONSE SURFACE METHODOLOGY (RSM)**

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## ABSTRACT

### **OPTIMISATION OF HISTAMINE REDUCTION IN KAWAKAWA (*EUTHYNNUS AFFINIS*) BY RED ONION EXTRACT USING RESPONSE SURFACE METHODOLOGY (RSM)**

The purpose of this study was to optimise the histamine reduction in kawakawa by red onion extract using Response Surface Methodology (RSM) of MINITAB Software (Version 14). Experimental design was created by RSM whereby test variables; amount of red onion extract (%), storage temperature ( $^{\circ}\text{C}$ ) and storage time (hours) were used. Half part of flesh kawakawa were blended and mixed thoroughly in different amounts of red onion extract and treated differently in terms of storage temperature and storage time as suggested by the experimental design of RSM. The histamine was extract by using n-butanol and 0.1M of HCl. Histamine analysis was carried out according to AOAC Fluorometric Method, 1990 and measured using Fluorescence at an excitation wavelength of 350 nm and emission wavelength of 444 nm. Histamine content in treated kawakawa was reduced by 75.85% at the optimum condition; 93.6% of red onion extract,  $-1.4^{\circ}\text{C}$  of storage temperature and 15.82 hours of storage time. In addition, the significant regression equations or model at the 5% level of confidence was also established for the estimation of the percentage reduction of histamine in kawakawa treated by red onion extract. This indicates that red onion extract is a potential source to be applied to reduce histamine in fish.