

# STUDY ON BROMELAIN HYDROLYSIS OF CATFISH BLOOD BY-PRODUCT USING FOR CULTIVATION OF *ASPERGILLUS ORYZAE*

Dang Minh Hien, Vo Thi Nhu Lan, Huynh Thi Bich Tran,  
Ngo Thao Trang, Nguyen Thi Cam Tu, Nguyen Cong Ha  
Summary

In factory seafood processing, catfish wastewater solution is a rich source by-product of protein. In addition, this is a big problem in seafood processing because it contains large amounts of organic matter, so wastewater treatment is very expensive and increases the cost of catfish fillet production. For the purpose of recovering the rich source of such protein by-products from blood catfish, the study was conducted to investigate the interaction between temperature, time, and pH on protein recovery. The result showed that the optimum recovery condition was pH 5.5, temperature of 70°C, heating time of 40 minutes rate of 81.595%. The following blood after recover used NaHCO<sub>3</sub> 0.2% oil separation, the constant of the number of the constant of the maximum number of  $K_m = 2.08$  and  $V_{max} = 5.21$ . Tyrosin recovery 95.93% and amin 75.65% at 240 minute, E: S (2.1-0.690). Then, subsequently, the protein hydrolysis fluid surveyed for drying and spraying at 180°C without drying aid. The commercial peptone medium and hydrolyzed protein powder were used as a culture medium of *Aspergillus oryzae* bacteria. Both commercial peptone and protein hydrolysate from blood fish used as components of bacteria *Aspergillus oryzae* growth media at the time marks from 0 hours to 72 hours with the medium temperature of 37°C and pH = 7, then commercial peptone medium is higher than the powder medium hydrolyzed by enzyme bromelain. In addition, surveying the activity of protease in two mediums at time of 4, 8, 12, 16, 20, 24 hours, temperature 37°C and pH = 7 showed that the activity of protease in hydrolyzed protein medium from blood catfish is higher than commercial peptone.

*Key: By-products, blood catfish, protein, recovery.*