Characteristics and Use of Peptones from Catfish (Clarias gariepinus) and Pangas Catfish (Pangasius pangasius) Heads as Bacterial Growth Media

ABSTRACT

Peptone is a hydrolysate product rich in amino acids, and it is uncoagulated at high temperature. Commercial peptone produced from land animals cannot be declared as acceptable in terms of lawfulness due to religious concerns. Catfish (Clarias gariepinus) and pangas catfish (Pangasius pangasius) are important species for the fish processing industry in Indonesia. The filleting process resulted in value by-products. The fish head as the byproducts can be utilized as a main raw material for higher economic value products, such as peptone. The aim of this study was to characterize peptones extracted from the heads of catfish and pangas catfish with different acid conditions. The characteristics of chemical composition, yield, color parameter, solubility, amino acid content, bacterial growth rate and biomass production were observed. The catfish peptone (CFP) and pangas catfish peptone (PCP) obtained with different acid conditions showed high protein content in the range of 84.35% to 90.80% ($P<0.05$). The yields of CFP and PCP were significantly different ($P<0.05$) and varied between 4.75% and 5.66%. The solubility of treated peptones varied between 98.03% and 99.52%, and the peptones were rich in glycine, glutamic acid, proline and leucine. Bacterial growth test showed that both CFP and PCP had better growth rates compared to the commercial peptone tested in this study. In addition, the biomass production with peptone from catfish and pangas catfish was higher than that with the commercial product ($P<0.05$). This research proposed that catfish and pangas catfish heads could be developed as an alternative source for peptone production.