

Abstract

The purpose of this study was to determine the optimal conditions for producing protein hydrolysates with antioxidant properties using response surface methodology and reduce waste and produce products with high added value. For this purpose, a total of 15 kilograms of fish Anjk (*Schizocypris altidorsalis*) deployed from zabol fishermen during the several stages of preparing and washing the wells early to work in the freezer at - 20 ° C was maintained. During initial experiments, four independent variables, including temperature, enzyme concentration and substrate concentration at five different levels, and changing one variable at each step was optimized and a study of 20 treated cases, variable levels for each was also assessed. In the next step, using a central composite rotatable design, experimental design consisted of 30 treatments were performed. In this study, the dependent variable (response) antioxidant property is based on free radical scavenging 2,2 - Diphenyl-1 - Pykryl Hydrazyl (DPPH) were measured. According to the results to optimize the hydrolysis step 5 grams of fish waste Anjk in 10 ml of hydrochloric acid buffer (pH 2) at a concentration of 5% pepsin enzyme at 37 ° C with a reaction time of 48 hours, resulting in the highest antioxidant activity (43%) are among the treatments. However, the optimum conditions obtained by response surface method with 5.22% enzyme, 37% of the substrate, 36.1 ° C reaction temperature and 49.12 hour antioxidant activity obtained in this condition 45.61 percent.

Key words: Fish Anjk (*Schizocypris altidorsalis*), free radical (DPPH), response surface method, pepsin enzyme antioxidant activity



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Anjak (*Schizocypris altidorsalis*) wastes**

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