

عنوان مقاله:

Evaluation and comparison of functional properties of protein hydrolysates produced from crab (*Portunus segnis*) and rainbow trout (*Oncorhynchus mykiss*) skin using Neutrase enzyme

محل انتشار:

پنجمین همایش بین المللی مطالعات میان رشته ای در صنایع غذایی و علوم تغذیه ایران (سال: 1400)

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خلاصه مقاله:

The aim of this study was to evaluate and compare the functional properties of protein hydrolysates derived from crab (*Portunus segnis*) and rainbow trout (*Oncorhynchus mykiss*) skin. For this purpose, these two sources were hydrolyzed (۳ hours, pH ۷.۴, ۵۰°C) using Neutrase enzyme (۳۰ Anson unit) and the functional properties of the resulting proteins (CPH and FPH) were investigated. The degree of hydrolysis was more than ۳۴% and the amount of protein in hydrolyzed powders was more than ۸۰%. The results showed that in general, the solubility, emulsifying activity and emulsion stability index, foaming activity and foam stability index and water holding capacity of FPH was significantly higher than CPH ($p < 0.05$). But there was no significant difference between the oil absorption capacity of FPH (0.12 ± 0.03 ml/g) and CPH (0.12 ± 0.05 ml/g) ($p > 0.05$). According to the results, the solubility of FPH and CPH in different pH values varied from about ۵۰ to ۹۲% and ۴۸ to ۷۳%, respectively. Also, the emulsifying activity index of FPH and CPH was recorded from about ۲۲ to ۵۳ and ۱۰ to ۳۱ mP/g, respectively. FPH and CPH at different pH had an emulsion stability index of ۲۹ to ۹۷ and ۲۶ to ۵۵ minutes, respectively. FPH was able to produce ۵۲ to ۱۱۲% foam in different pH values. Crab protein hydrolysate (CPH) was at a very low level in terms of foam stability, so that this index was reported to be zero in pH ۴, ۸, ۱۰ and ۱۲; but the other functional properties of these peptides (CPH) were relatively favorable. PH was a factor influencing functional properties; so that most of these properties were severely reduced in pH ۴. According to the results of the functional properties of FPH and CPH, these peptides can be used in the food industry, but their application in any food, depending on the type of food and storage conditions, requires additional and more accurate tests.

کلمات کلیدی:

Crab, Rainbow trout skin, Neutrase, protein hydrolysates, Functional properties

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