ABSTRAK

Joruk merupakan produk perikanan tradisional yang dibuat melalui proses fermentasi spontan dengan bakteri asam laktat dengan metode penggaraman yang dilanjutkan proses fermentasi selama 4-10 hari. Hidrolisis protein dengan enzim pepsin dan tripsin menghasilkan peptida bioaktif sebagai antihipertensi dan antioksidan. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan gula aren, lama fermentasi dan hidrolisis enzim terhadap aktivitas *Angiotensin Converting Enzyme Inhibitor* (ACE-I) dan aktivitas antioksidan hidrolisat joruk ikan oci (*Rastrelliger kanagurta*).

Pembuatan hidrolisat joruk ditambahkan dengan konsentrasi gula aren 10%, 20% dan 30% kemudian difermentasi selama 8 hari, 10 hari dan 12 hari. Hidrolisis protein dengan menggunakan enzim pepsin dan kombinasi enzim pepsin dan tripsin. Penelitian ini dilakukan dengan metode eksperimental. Rancangan percobaan menggunakan Rancangan Acak Kelompok (RAK) faktorial 3x3, dengan ulangan eksperimental sebanyak tiga kali dan ulangan pengujian sebanyak tiga kali. Uji pembeda menggunakan ANOVA dengan tingkat kepercayaan 95% dan jika menunjukkan perbedaan yang nyata maka dilanjutkan dengan uji Duncan. Untuk membandingkan perlakuan penggunaan enzim pepsin dan kombinasi enzim pepsin dan tripsin dalam proses hidrolisis menggunakan uji t (*independent samples t test*) pada tingkat kepercayaan 95%.

Hasil penelitian menunjukkan bahwa hidrolisat joruk yang dihidrolisis enzim pepsin dan tripsin dengan penambahan gula aren 10% dan lama fermentasi 8 hari memberikan nilai protein terlarut, derajat hidrolisis dan aktivitas ACE-I tertinggi yaitu berturut-turut 19,40 mg/mL; 21,27% dan 87,84%. Aktivitas antioksidan tertinggi terdapat pada hidrolisat joruk yang dihidrolisis enzim pepsin dengan penambahan gula aren 30% dan lama fermentasi 12 hari yaitu sebesar 5,28%.

Kata kunci : *Joruk, Fermentasi Ikan, Hidrolisis Enzim, ACE-I, Antioksidan*

ABSTRACT

Joruk is a traditional fishery product that made by a spontaneous fermentation process with lactic acid bacteria by salting method which is followed by a fermentation process for 4-10 days. The functional properties of joruk proteins increase when enzymatic hydrolysis carried out using the pepsin and trypsin enzyme. Hydrolysis of proteins with the pepsin and trypsin enzyme can produce bioactive peptides as antihypertensive and antioxidants. The aims of this study was to determine the effect of the addition of palm sugar, the length of fermentation time and enzyme hydrolysis on the activity of Angiotensin Converting Enzyme Inhibitors (ACE-I) and antioxidant activity hydrolyzates joruk oci fish (*Rastrelliger kanagurta*).

The production of joruk hydrolyzate added with the concentration of palm sugar 10%, 20% and 30% then fermented for 8 days, 10 days and 12 days. Protein hydrolysis using the pepsin enzyme and a combination of the pepsin and trypsin enzyme to investigated its functionality in vitro. This study carried out by an experimental method. The experimental design used a Randomized Block Design, factorial 3x3. The distinguishing test uses ANOVA with a confidence level of 95% and if it shows significant differences then it followed by the Duncan test. To compare the treatment of the use of the pepsin enzyme and the combination of the pepsin and trypsin enzymes in the hydrolysis process using the independent samples t test at a confidence level of 95%.

The results showed that the hydrolysate joruk made by hydrolyzed pepsin and trypsin enzymes with the addition of 10% palm sugar and 8 days fermentation time gave the highest dissolved proteins, degree of hydrolysis and ACE-I activities, ie, 19.40 mg/mL; 21.27% and 87.84%. The highest antioxidant activity was found in the joruk hydrolysate that hydrolyzed by pepsin enzyme with the addition of 30% palm sugar and 12 days fermentation with a value of 5.28%.

Keywords: *Joruk, Fish Fermentation, Hydrolysis Enzymes, ACE-I*, *antioxidant*