RINGKASAN

Ikan teri (*Stolephorus commersonnii*) merupakan jenis ikan pelagis kecil yang hidup secara berkelompok dan keberadaannya cukup melimpah di Segara Anakan Cilacap. Ikan teri banyak dimanfaatkan sebagai bahan makanan sehingga memiliki nilai komersial yang tinggi. Namun, hal tersebut menyebabkan laju eksploitasi yang tinggi terhadap populasi ikan teri. Secara molekuler, eksploitasi dapat berakibat pada penurunan keragaman genetik suatu populasi. Umumnya populasi yang tereksploitasi memiliki keragaman genetik yang rendah. Penelitian ini bertujuan untuk mengetahui polimorfisme, keragaman haplotipe dan keragaman lokus marka PCR-RFLP (*Polymerase Chain Reaction-Restriction Fragment Length Polymorphism*) gen CO1 pada populasi ikan teri di Segara Anakan Cilacap. Penelitian ini dilakukan mulai Januari - April 2018 dan menggunakan metode *survey*teknik *random sampling*. Sebanyak 30 sampel ikan teri diambil secara acak dari koleksi Laboratorium Taksonomi Hewan. Genom mtDNA diisolasi menggunakan metode *Chelex*. Gen Sitokrom C Oksidase 1 (CO1) diamplifikasi dengan teknik PCR. Primer yang digunakan adalah sepasang *internal forward primer* 5'ATCTTTGGTGCATGAGCAGGAATAGT3' dan primer FishR2 *reverse*5'ACTTCAGGGTGACCGAAGAATCAGAA3'. Pada tahap skrining, produk PCR sepanjang 650 pasang basa (pb) dipotong dengan delapan enzim restriksi *HpyF*31, *Hinf*I, *Pst*I, *Eco*RI, *Hind*III, *Rsa*I, *Vsp*I dan *Taq*I. Skrining enzim dilakukan untuk mendapatkan enzim yang mampu memotong gen CO1 ikan teri. Marka spesifik PCR-RFLP dianalisis secara deskriptif berdasarkan kemunculan pola pita DNA pada gel agarose 1%. Hasil penelitian menunjukkan terdapat empat enzim (*HpyF*31, *Hinf*I, *Pst*I, dan *Eco*RI) yang tidak dapat memotong gen CO1. Empat enzim lain (*Hind*III, *Rsa*I, *Vsp*I dan *Taq*I) mampu memotong gen CO1. Enzim *Hind*III, *Vsp*I dan *Taq*I mampu mendigesti produk PCR dan menghasilkan dua fragmen RFLP, sedangkan enzim *Rsa*I menghasilkan tiga fragmen RFLP. Enzim *Hind*III menghasilkan fragmen berukuran 416 bp dan 234 bp, enzim *Vsp*I menghasilkan ukuran fragmen 435 bp dan 214 bp, enzim *Taq*I menghasilkan ukuran fragmen 556 bp dan 94 bp serta enzim *Rsa*I menghasilkan ukuran fragmen 319 bp, 183 bp dan 148 bp. Fragmen RFLP yang dihasilkan tersebut muncul pada semua sampel dan menghasilkan pola pita yang seragam pada semua individu ikan teri.Hal ini menunjukkan bahwa gen CO1 pada populasi ikan teri di Segara Anakan Cilacap bersifat monomorfik karena memiliki alel yang sama. Oleh karena itu, dapat disimpulkan bahwa marka PCR-RFLP gen CO1 ikan teridi Segara Anakan Cilacaptidak dapat memperlihatkan adanya variasi genetik dan menunjukkan nilai keragaman haplotipe sebesar 0 (nol) serta keragaman lokus sebesar 0%.

Kata kunci : Ikan teri, PCR-RFLP, keragaman genetik, gen sitokrom C oksidase 1 (CO1)

SUMMARY

*Commerson's anchovy (Stolephorus commersonnii) is a small pelagic fish that lives in a group and its existence is quite abundant in Segara Anakan Cilacap. This anchovy is widely consumed as the food so it has a highly commercial value which leads to a high exploitation rate of the anchovy population. High exploitation may result in a decrease in the genetic diversity of a population. Exploited populations generally have low genetic diversity. This study aims to know the polymorphism, haplotype diversity, and loci diversity of PCR-RFLP markers (Polymerase Chain Reaction-Restriction Fragment Length Polymorphism) CO1 gene on anchovies population in Segara Anakan Cilacap. This study was conducted from January to April 2018 and used survey method by applying random sampling. As many as 30 samples of anchovy were taken from the collection in Animal Taxonomy Laboratory. Genomic mtDNA was isolated using Chelex method. Cytochrome C Oxidase1 gene were amplified with PCR technique. The primer used was a pair of internal forward primer 5'ATCTTTGGTGCATGAGCAGGAATAGT3' and FishR2 reverse primer: 5'ACTTCAGGGTGACCGAAGAATCAGAA3'. During screening stages, PCR products of 650 pairs of bases (pb) length were cut with eight restriction enzymes, namely Hinf*I, *HpyF*31, *Pst*I, *Eco*RI, *Hind*III, *Rsa*I, *Vsp*I and *Taq*I. Enzyme screening was conducted to determine the enzymeable to cut anchovy's CO1 gene.Spesific PCR-RFLP markers were analyzed descriptively based on* DNA *band pattern appear in an agarose gel of 1%.The result shows that four enzymes (HpyF*31, *Pst*I, *Eco*RI, *andHinf*I*) were unable to cut of the CO1 gene. The remaining four other enzymes (Hind*III, *Rsa*I, *Vsp*I *and Taq*I*) were able to cut of the CO1 gene. The Hind*III, *Vsp*I *and Taq*I *enzymes were able to digest* PCR *products and generated two PCR-RFLPfragments, whereas the Rsa*I *enzyme generated three PCR-RFLP fragments.TheHindIII enzymes produces CO1 fragment with the size of 416 bp and 234 bp lengths, CO1-VspI produces 435 bp and 214 bp, CO1-Taq*I *produces* 556 *bp and 94 bp and CO1-RsaI produces 319 bp, 183 bp, and 148 bp fragments, espectively. The generated PCR-RFLP fragments appear on all samples and produce a uniform band pattern on all anchovy individuals. This suggests that the CO1 gene of anchovy population in Segara Anakan Cilacap was monomorphic because it has similar alleles. Therefore, it can be concluded that PCR-RFLP markers of CO1 gene on anchovy in Segara Anakan Cilacap dies not showgenetic diversity and show the haplotype diversity value was 0 (zero) and loci diversity value was 0%.*

***Keywords**: commerson's anchovy, PCR-RFLP, genetic diversity, cytochrome c oxidase 1 gene* (CO1)