RINGKASAN

SEPRI HAMZA. Kandungan Mikroplastik Sedimen dan Gastropoda pada Kawasan Mangrove Pesisir Bintan. Dibimbing oleh AGUNG DHAMAR SYAKTI dan JELITA RAHMA HIDAYATI.

Mikroplastik merupakan sampah plastik berukuran kurang dari 5 mm yang berasal dari proses degradasi proses fisik menjadi partikel-partikel kecil yang tersebar ke dalam lingkungan perairan. Keberadaan mikroplastik menimbulkan pencemaran karena mengendap pada sedimen serta dapat termakan oleh biota bentik salah satunya yaitu gastropoda yang biasa ditemukan pada ekosistem mangrove. Penelitian ini bertujuan untuk menentukan kandungan mikroplastik pada sedimen dan gastropoda di kawasan mangrove pesisir Bintan.

Penelitian menggunakan metode deskriptif untuk menggambarkan karaktertistik secara tepat dan sistematis. Penelitian dilaksanakan pada bulan November-Desember 2021 dan pengambilan sampel dilakukan di empat lokasi yaitu Tembeling, Penaga, Busung dan Pengudang. Sampel sedimen dan gastropoda diambil menggunakan metode *purpossive sampling* pada kawasan ekosistem mangrove. Sampel sedimen dan gastropoda dikeringkan dan diberikan larutan H_2O_2 30% untuk menghilangkan zat organik kemudian diberi larutan ZnCl dan disaring menggunakan kertas whatman dan diidentifikasi menggunakan mikroskop meliputi kelimpahan, tipe dan warna dari mikroplastik.

Hasil penelitian menunjukkan kelimpahan total mikroplastik pada sedimen tertinggi ditemukan pada lokasi Busung dengan total 1034,70 partikel/g. Pada gastropoda kelimpahan total mikroplastik tertinggi ditemukan pada jenis *Telescopium sp* yaitu 206,67 partikel/g dilokasi Penaga. Tipe mikroplastik yang ditemukan pada sedimen dan gastropoda terdapat 4 yaitu fiber, fragmen, film dan pelet, akan tetapi mikroplastik tipe pelet hanya ditemukan pada gastropoda jenis *Telescopium sp* dan *Nerita sp*. Mikroplastik tipe fragmen memiliki kelimpahan tertinggi pada sedimen disusul tipe film dan fiber. Mikroplastik tipe pelet tertinggi ditemukan pada gastropoda disusul fragmen, film dan fiber. Mikroplastik tipe fiber paling sedikit ditemukan pada sedimen gastropoda. Kelimpahan warna mikroplastik pada sedimen dan gastropoda tertinggi didominasi warna coklat.

Kata kunci: Bintan, Gastropoda, Mangrove, Mikroplastik, Sedimen.

SUMMARY

SEPRI HAMZA. Microplastics Content of Sedimentary and Gastropods in the Bintan Coastal Mangrove Area. Supervised by AGUNG DHAMAR SYAKTI and JELITA RAHMA HIDAYATI.

Microplastics are plastic waste with a size of less than 5 mm originating from the physical process of degradation into small particles that are scattered into the aquatic environment. The presence of microplastics causes pollution because they settle in sediments and can be eaten by benthic biota, one of which is gastropods which are commonly found in mangrove ecosystems. This study aims to determine the content of microplastics in sediments and gastropods in the coastal mangrove area of Bintan.

This research uses descriptive method to describe the characteristics accurately and systematically. The study was conducted in November-December 2021 and sampling was carried out in four locations, namely Tembeling, Penaga, Busung and Pengudang. Sediment and gastropod samples were taken using purposive sampling method in the mangrove ecosystem area. Sediment and gastropod samples were dried and given 30% H_2O_2 solution to remove organic substances then given ZnCl solution and filtered using whatman paper and identified using a microscope including abundance, type and color of microplastics.

The results showed that the highest total abundance of microplastics in sediment was found at the Busung location with a total of 1034.70 particles/g. In gastropods, the highest total abundance of microplastics was found in the type Telescopium sp, which was 206.67 particles/g at the Penaga location. There are 4 types of microplastics found in sediments and gastropods, namely fiber, fragments, films and pellets, but pellet-type microplastics were only found in gastropods Telescopium sp and Nerita sp. Fragment-type microplastics had the highest abundance in sediments, followed by film and fiber types. The highest pellet type of microplastic was found in gastropods, followed by fragments, films and fibers. The least fiber type microplastics were found in gastropod sediments. The abundance of microplastic color in the highest sediments and gastropods was dominated by brown.

Keywords: Bintan, Gastropods, Mangroves, Microplastics, Sediments