

**R. Dwi Bahtiar Riyadi** NPM 220341100048 Analisis Karakteristik Mikroplastik Pada Tambak Garam Metode Madurese Dengan Penambahan *Archaea* Di Pamekasan **Nike Ika Nuzula, S.Si., M.T**

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### **ABSTRAK**

Mikroplastik merupakan partikel plastik berupa potongan-potongan kecil berukuran  $<5$  mm. Keberadaan mikroplastik pada garam dikategorikan sebagai cemaran dan tidak memenuhi standar keamanan pangan. Penelitian ini dilakukan di kecamatan Pademawu kabupaten Pamekasan yang menjadi salah satu sentra garam di Madura dan adanya indikasi cemaran mikroplastik pada wilayah perairan. Tujuan penelitian ini diantaranya mengetahui bentuk, ukuran dan warna mikroplastik serta mengetahui pengaruh penambahan *Archaea* terhadap kelimpahan mikroplastik. Pengambilan sampel dilakukan pada tiga titik, yaitu sungai, kolam penampungan air laut dan kolam pengendapan air garam. Identifikasi karakteristik mikroplastik menggunakan metode NOAA (2015). Hasil penelitian menunjukkan bahwa kelimpahan bentuk mikroplastik tertinggi berada pada sedimen sungai 2.14 partikel/Kg. Jenis bentuk mikroplastik didominasi oleh fiber, dikarenakan area sekitar lokasi penelitian dekat dengan aktivitas perikanan dan pertanian. Warna mikroplastik didominasi oleh hitam, transparan dan merah. Hasil identifikasi menunjukkan ukuran mikroplastik didominasi dengan 50–500  $\mu\text{m}$  sebanyak 162 partikel/Kg pada sedimen sungai. Hasil uji statistik memperoleh nilai signifikansi  $p$  (sig 2-tailed) 0.979 ( $p > 0.05$ ) sehingga dapat disimpulkan bahwa tidak ada pengaruh signifikan antara hasil kelimpahan mikroplastik pada penambahan *Archaea* dengan tanpa penambahan.

**Kata kunci:** *Archaeabacteria*, Metode Madurese, Mikroplastik

### **ABSTRACT**

*Microplastics are plastic particles in the form of small fragments measuring less than 5 mm. The presence of microplastics in salt is classified as a contaminant and does not meet food safety standards. This study was conducted in Pademawu Sub-district, Pamekasan Regency, which is one of the salt production centres in Madura and where there are indications of microplastic contamination in local waters. The objectives of this study included determining the shape, size and colour of microplastics, as well as investigating the effect of adding Archaea on microplastic abundance. Sampling was carried out at three points: a river, a seawater retention pond, and a saltwater settling pond. The characteristics of the microplastics were identified using the NOAA (2015) method. The results showed that the highest abundance of microplastic shapes was found in river sediments at 2.14 particles/kg. The types of microplastic shapes were dominated by fibres, as the area around the study site is close to fishing and agricultural activities. The colours of the microplastics were predominantly black, transparent, and red. The identification results showed that microplastic sizes were dominated by the 50–500  $\mu\text{m}$  range, amounting to 162 particles/kg in river sediments. Statistical analysis yielded a significance value of  $p$  (two-tailed) of 0.979 ( $p > 0.05$ ), leading to the conclusion that there was no significant effect of the addition of Archaea on microplastic abundance compared to the control.*

**Keywords:** *Archaeabacteria, Madurese Method, Microplastics*