

ABSTRAK

Kabupaten Cilacap adalah kota pantai dan kota industri dengan kawasan pesisir yang sangat kompleks akan aktivitas antropogenik, antara lain persawahan, pertambangan, perikanan, maritim, pabrik, aktivitas kota dan eksploitasi hutan mangrove Segara Anakan serta sedimentasi. Keseluruhan aktivitas tersebut telah mempengaruhi konsentrasi kimia di perairan pantai. Tujuan penelitian ini adalah untuk mengetahui konsentrasi dan perbedaan fosfat dan nitrat dalam air dan sedimen di perairan pantai Cilacap. Metode survey ini mengaplikasikan metode penelitian *Purpose random sampling*. Sampel air dan sedimen dikemas menggunakan metode botol gelap. Konsentrasi fosfat dan nitrat dalam air dan sedimen dianalisis dengan ASS (*Atomic Absorption Spectrophotometer*) dan untuk mengetahui perbedaan konsentrasi fosfat dan nitrat dalam air versus sedimen dianalisis secara statistik. Konsentrasi fosfat dalam air dan sedimen di perairan pantai Kabupaten Cilacap diperoleh 0.1593 mg/l dan 15.2224 mg/g dengan rasio 0.010 atau 10:1000. Sedangkan konsentrasi nitrat dalam air dan sedimen diperoleh 0.9911 mg/l dan dalam sedimen 1.67775 mg/l dengan rasio 0.59 atau 59:100. Konsentrasi fosfat dalam air versus konsentrasi fosfat dalam sedimen dan konsentrasi nitrat dalam air versus konsentrasi nitrat dalam sedimen keduanya diperoleh perbedaan pada $P < 0,05$. Konsentrasi nitrat dan fosfat dalam sedimen lebih tinggi dari konsentrasinya dalam air mengindikasikan eksistensi proses penguraian biologis bahan organik dalam sedimen.

Kata Kunci: fosfat, nitrat, air, sedimen, cilacap.



ABSTRACT

Cilacap Regency is coastal city and industrial city and on coastal area have complex of anthropogenic activities, namely activities of rice fields, mining, fisheries, maritime, factories, urban activities and exploitation of the Segara Anakan mangrove forest and sedimentation. All of the activities have affect to chemical concentrations in coastal waters. The purpose of this study is to determine the concentration and difference of phosphate and nitrate in waters and sediment in the coastal waters of Cilacap. This survey method applies the *Purpose random sampling* research method. Water and sediment samples are packed using the black bottle method. The concentration of phosphate and nitrate in waters and sediment are analyzed by ASS (*Atomic Absorption Spectrophotometer*) method and to determine the difference of concentration of phosphate and nitrate in waters versus sediment is analyzed statistically. The concentration of phosphate in waters and sediment in the coastal waters of Cilacap Regency were obtained 0.1593 mg/l and 15.2224 mg/g , and the ratio was found 0.010 or 10:1000. Meanwhile, the concentration of nitrate in waters and sediment were found 0.9911 mg/l and 1.67775 mg/l in sediment, and the was obtained ratio 0.59 or 59:100. Both of the phosphate concentration in waters versus the phosphate concentration in the sediment and the nitrate concentration in the water versus the nitrate concentration in the sediment were obtained different at $P < 0.05$. The concentration of nitrate and phosphate in the sediment is higher than its concentration in waters, the condition is indicate an existence of a biological decomposition process to organic matter in the sediment.

Key Words: phosphate, nitrate, waters, sediment, cilacap.