

ABSTRAK

Estuari alur pelayaran Sungai Donan Cilacap terletak di Selatan Pulau Jawa dan dipengaruhi oleh pola arus pasang surut dari Samudera Hindia serta bagian dari kawasan mangrove Segara Anakan. Perairan tersebut adalah alur pelayaran, area penangkapan ikan dan mengalami sedimentasi yang tinggi. Tujuan dari penelitian ini adalah mengetahui kecepatan arus pasang surut, konsentrasi TDS, dan hubungan kecepatan arus pasang dan kecepatan arus surut terhadap konsentrasi TDS. Metode survei ini mengukur ketinggian pasut dengan *palm* ukur, kecepatan arus pasut dengan *Current meter* dan konsentrasi TDS dengan TDS meter. Data dikoleksi tiap jam dari surut menuju pasang, pasang menuju surut, pasang tertinggi dan surut terendah selama 24 jam secara mingguan pada bulan Oktober 2019. Analisis data untuk mengetahui hubungan tiap parameter dihitung dengan persamaan regresi. Kecepatan rata-rata arus saat surut menuju pasang diperoleh lebih tinggi dibanding saat pasang menuju surut. Arah arus didominasi menuju Utara ketika pasang dan surut menuju Selatan. Konsentrasi TDS tertinggi diperoleh saat *spring tides* dan terendah saat *neap tides*. Debit TDS saat surut menuju pasang diperoleh lebih tinggi dibanding saat pasang menuju surut. Hubungan kecepatan arus surut menuju pasang dan pasang menuju surut terhadap konsentrasi TDS diperoleh korelasi rendah dan terhadap pasang sangat rendah.

Kata kunci: *Total dissolved solid*, pasang surut, kecepatan arus

ABSTRACT

The estuary of ship channel Donan river at Cilacap is located at the Southern of Java Island and is influenced by tidal flow patterns from the Hindia Ocean and parts of the Segara Anakan mangrove area. The waters is ship channel, fishing ground and highly of sedimentation. The purpose of this study is to determine tidal current velocity, TDS concentration, and the relationship between tidal current velocity and TDS concentration. This survey method is measure the height of tidal water level by palm instrument. The tidal current velocity is measured with current meter and the TDS concentration with TDS meter. The data is collected weekly every hour from low tide to high water, high water to low water, highest water and lowest water for 24 hours in October 2019. The data analyze to determine the relation of each parameter is calculated by the regression equation. The average velocity when the high water to low water was obtained higher than the low water to high water. The direction of the current was found dominantly to North at high water and low water to the South. The highest TDS concentration was obtained during spring tides and the lowest when neap tides. TDS discharge at low water to high water was found higher than when high water to low water. The relationship between current velocity when low water to high water and when high water to low water with TDS concentration were obtained low correlation.

Key words: Total dissolved solid, tidal, current speed

