



Kemelimpahan komunitas fitoplankton tambak tradisional di Segara Anakan, Cilacap

ABSTRAK

Disusun oleh:

Tjut Sugandawaty Djohan, Priscilia, dan Krisni Suhestiningsih

Tujuan penelitian adalah untuk mempelajari kemelimpahan komunitas fitoplankton di tambak tradisional pasang surut dan Kali Motean sebagai *inflow*. Tambak tradisional terletak di sebelah timur dan barat serta ditanam pohon bakau. Kondisi pintu air tambak dibuka sehingga aliran pasang surut di Kali Motean menentukan kondisi perairan tambak. Pada setiap lokasi kerja, sampel plankton merupakan komposit 20 l air dicuplik dengan menggunakan modifikasi Van Dorn *water sampler* 5 l dengan ulangan 5 kali di setiap lokasi. Sampel komposit disaring dengan menggunakan *plankton net* dan difiksasi dengan formalin 4%. Semua cacah individu fitoplankton tiap sampel dihitung dengan menggunakan *Sedgwick Rafter Counting Cell*. Kualitas perairan yang diukur meliputi nutrisi, pH, *dissolved nutrient*, temperatur air, temperatur udara, salinitas, dan jeluk Secchi. Hasil menunjukkan bahwa kehadiran fungsional grup di ketiga lokasi sama. Fungsional grup yang hadir adalah diatom *centric*, diatom pennate, algae unisel, dan algae koloni. Cacah spesies dominan dimiliki oleh diatom *centric* dan diatom pennate yang disusun oleh 14 – 15 dan 12 spesies atau 42 – 43% dan 36 – 42% komunitas di tiap lokasi. Peledakan *Coscinodiscus* sp. dari fungsional grup diatom *centric* sebesar 106515, 45002, dan 166405 individu per 100 l, 76%, 66%, 66% mengindikasikan kondisi perairan buruk. Distribusi komunitas fitoplankton di antara perairan tambak barat, tambak timur, dan Kali Motean adalah kontinum.

Kata kunci: diatom, peledakan fitoplankton, *Coscinodiscus*, mangrove estuari.



Abundance of phytoplankton community at traditional shrimp-ponds in mangrove forest, Segara Anakan, Cilacap

ABSTRACT

Authors:

Tjut Sugandawaty Djohan, Priscilia, and Krisni Suhestiningsih

The purpose of this research was to study the abundance of phytoplankton community in the traditional shrimp-ponds and the inflow of Motean River to the shrimp-ponds. These shrimp-ponds were located in east and west and had mangrove tree in the island of the pond. The shrimp-ponds' water channel doors were open thus the ponds experienced low and high tide. Plankton samples consisted of 20 litre composites, were taken using modified 5 litre of Van Dorn water sampler with five replicates. The water samples were filtered using plankton net and fixed with 4% formalin, was counted using Sedgwick Rafter Counting Cell. The parameter, water quality, measured were nitrate, ammonium, sulphate, pH, dissolved oxygen, water temperature, air temperature, salinity, and Secchi depth at each location. Results showed that the presences of phytoplankton functional groups in those locations were similar, which consisted of centric diatom, pennate diatom, unisel algae, and colonial algae. The centric diatom and pennate diatom had the highest number of species which consisted of 15 – 14 and 12 species or 42 – 43% and 36 – 42% community in every location. The blooming of *Coscinodiscus* sp., diatom centric group, was exploded, 106515, 45002, and 166405 individuals per 100 l or 76%, 66%, and 66% inconsecutively indicated bad water condition. The distribution of phytoplankton community in shrimp-ponds and Motean River were continuum.

Key words: diatom, phytoplankton bloom, *Coscinodiscus*, mangrove estuary.