ABSTRAK

Perairan Pantai Utara (Pantura) Jawa Tengah menyimpan potensi sumber daya alam, salah satunya pengembangan budidaya rumput laut *Gracilaria* sp. di tambak *silvofishery*. Pendekatan budidaya dapat dilakukan secara monokultur atau polikultur. Salah satu nutrisi yang mudah berubah oleh adanya aktivitas fisika kimia di lingkungan sekitar habitat rumput laut adalah lemak. Karakteristik lingkungan yang berbeda pada setiap area *silvofishery* dan perbedaan musim dapat mempengaruhi kandungan lemak *Gracilaria* sp. Tujuan dari penelitian ini adalah mengetahui kandungan lemak, parameter fisika-kimia air, dan korelasi antara kedua parameter tersebut dengan pendekatan spasial (S1: Brebes, S2: Tegal, S3: Pemalang, S4: Pekalongan) dan pendekatan temporal (Musim Peralihan II, Musim Barat, Musim Peralihan I). Pengambilan sampel *Gracilaria* sp. dilakukan secara *purposive sampling*. Analisis kandungan lemak dilakukan dengan metode soxhlet. Selanjutnya, analisis data menggunakan analisis deskriptif komparatif dan korelasi antara kandungan lemak dengan parameter fisika-kimia air dilakukan dengan uji Korelasi Pearson. Hasil menunjukkan rata-rata kandungan lemak dengan pendekatan spasial antara 0,81±0,53%–2,21±2,46% dan pendekatan temporal antara 0,52±0,12%–2,85±1,55%. Parameter fisika-kimia air: suhu (29,65-33,06°C); salinitas (18,89-29,28‰); DO (5,37-13,69 mg/L); pH (7,39-8,23); TN (4,25-22,04 mg/L); TP (0,57-10,97 mg/L). Korelasi antara kandungan lemak rumput laut *Gracilaria* sp. dengan parameter fisika-kimia air yaitu variabel suhu, DO, dan TN berkorelasi sangat kuat, pH dan TP berkorelasi kuat, dan salinitas berkorelasi cukup erat berdasarkan pendekatan spasial. Sedangkan pada pendekatan temporal, suhu dan pH berkorelasi sangat kuat, DO berkorelasi kuat, TP berkorelasi cukup erat, serta salinitas dan TN berkorelasi lemah tapi pasti.

Kata Kunci: *Gracilaria sp., silvofishery, lemak, spasio-temporal.*

ABSTRACT

The North Coast (Pantura) waters of Central Java holds potential natural resources, one of which is the development of *Gracilaria* sp. seaweed cultivation in silvofishery ponds. Cultivation approaches can be carried out either in monoculture or polyculture systems. One of the nutrients that easily changes due to physical and chemical activities in the environment around the seaweed habitat is fat. The different environmental characteristics in each silvofishery area and seasonal variations can affect the fat content of *Gracilaria* sp. This study aimed to determine the fat content, water physico-chemical parameters, and the correlation between the two parameters using a spatial approach (S1: Brebes, S2: Tegal, S3: Pemalang, S4: Pekalongan) and a temporal approach (Transition Season II, West Season, Transition Season I). *Gracilaria* sp. samples were collected using purposive sampling. Fat content analysis was conducted using the Soxhlet method. Furthermore, data analysis used comparative descriptive analysis. The correlation between fat content and water physico-chemical parameters was analyzed using Pearson correlation test. The results showed that the average fat content with the spatial approach ranged from 0.81±0.53%–2.21±2.46% and with the temporal approach ranged from 0.52±0.12%–2.85±1.55%. Water physico-chemical parameters: temperature (29.65-33.06°C); salinity (18.89-29.28‰); DO (5.37-13.69 mg/L); pH (7.39-8.23); TN (4.25-22.04 mg/L); TP (0.57-10.97 mg/L). The correlation between the fat content of *Gracilaria* sp. seaweed with the physicochemical parameters of water, namely temperature, DO, and TN variables were very strongly correlated, pH and TP were strongly correlated, and salinity was quite closely correlated based on the spatial approach. While in the temporal approach, temperature and pH were very strongly correlated, DO was strongly correlated, TP was quite closely correlated, and salinity and TN were weakly but definitely correlated.

Key words: *Gracilaria sp., silvofishery, fat, spatio-temporal.*