

RINGKASAN

RAMONA DESTRICA. Pengaruh Perbedaan Suhu Terhadap Respon Fisiologis Benih Lamun *Enhalus acoroides*. Dibimbing oleh ADITYA HIKMAT NUGRAHA dan RIKA ANGGRAINI.

Meningkatnya suhu sebagai efek dari pemanasan global dapat memengaruhi kelangsungan hidup lamun. Suhu menjadi salah satu faktor yang dapat menentukan respon fisiologis lamun dalam mempertahankan kehidupannya, termasuk pada fase awal kehidupan pada benih lamun. Tujuan dari penelitian ini untuk menjelaskan pengaruh perbedaan suhu terhadap respon fisiologis benih lamun *Enhalus acoroides* meliputi laju pertumbuhan, anatomi jaringan daun, dan kandungan klorofil. Penelitian dilaksanakan pada bulan Maret-Juni 2022. Pengambilan buah lamun *Enhalus acoroides* dilakukan di Pulau Dompok. Metode yang digunakan yaitu eksperimen di laboratorium, benih ditumbuhkan dalam akuarium dengan tiga perlakuan suhu (28 °C, 31 °C, dan 35 °C) selama 8 pekan pemeliharaan. Kualitas air, pertumbuhan, anatomi jaringan, dan kandungan klorofil diukur di laboratorium Fakultas Ilmu Kelautan dan Perikanan, Universitas Maritim Raja Ali Haji. Pertumbuhan daun diukur menggunakan penggaris skala 1 mm, anatomi jaringan daun menggunakan tahapan sayatan melintang daun yang diamati dibawah mikroskop lalu diukur menggunakan *software motic image plus 3.0* pada perbesaran 100x, dan kandungan klorofil diukur menggunakan spektrofotometer. Data dianalisis menggunakan ANOVA satu arah pada taraf nyata 5 % dan uji lanjut Beda Nyata Terkecil. Laju pertumbuhan, rata-rata panjang daun lebih optimal dengan kandungan klorofil yang tinggi terdapat pada perlakuan suhu 28 °C. Ukuran anatomi jaringan daun pada epidermis atas dan epidermis bawah tertinggi diamati pada perlakuan suhu 31 °C sedangkan jaringan mesofil tertinggi diamati pada perlakuan suhu 35 °C. Pada penelitian ini perbedaan suhu berpengaruh signifikan pada laju pertumbuhan, rata-rata panjang daun, struktur anatomi jaringan mesofil dan kandungan klorofil lamun *Enhalus acoroides*.

Kata kunci: Benih, *Enhalus acoroides*, Respon Fisiologis, Suhu

SUMMARY

RAMONA DESTRICA. Effect of Temperature Differences on the Physiological Response of Seagrass Seeds *Enhalus acoroides*. Supervised by ADITYA HIKMAT NUGRAHA and RIKA ANGGRAINI.

Increasing temperatures as an effect of global warming can affect the survival of seagrass. Temperature is one of the factors that can determine the physiological response of seagrass in maintaining its life, including in the early stages of life in seagrass seeds. The purpose of this study was to explain the effect of temperature differences on the physiological response of *Enhalus acoroides* including growth rate, leaf tissue anatomy, and chlorophyll content. The research was carried out in March-June 2022. *Enhalus acoroides* was carried out on Dompok Island. The method used was an experiment in the laboratory, the seeds were grown in an aquarium with three temperature treatments (28 °C, 31 °C, and 35 °C) for 8 weeks of maintenance. Water quality, growth, tissue anatomy, and chlorophyll content were measured in the laboratory of the Faculty of Marine Science and Fisheries, Raja Ali Haji Maritime University. Leaf growth was measured using a ruler on a 1 mm scale, leaf tissue anatomy used a transverse leaf section which was observed under a microscope and then measured using Motic Image Plus 3.0 software at 100x magnification, and chlorophyll content was measured using a spectrophotometer. Data were analyzed using one-way ANOVA at 5% significance level and further test of Least Significant Difference. The growth rate, the average leaf length was more optimal with a high chlorophyll content found at a temperature treatment of 28 °C. The highest anatomical size of leaf tissue in the upper and lower epidermis was observed at 31 °C, while the highest mesophyll tissue was observed at 35 °C. In this study, temperature differences had a significant effect on growth rate, average leaf length, anatomical structure of mesophyll tissue and chlorophyll content of the seagrass *Enhalus acoroides*.

Keywords: *Enhalus acoroides*, Physiological Response, Seed, Temperature