

VITA ADITYA NPM. 21.03.4.1.1.00041. Perbandingan Laju Pertumbuhan dan Kelangsungan Hidup Karang Fragmentasi *Caulastrea furcata* dan *Montipora foliosa* dalam Bak Pemeliharaan. Dibawah bimbingan **Wahyu Andy Nugraha, ST., M.Sc., Ph.D.**

ABSTRAK

Terumbu karang berperan penting sebagai habitat, penjaga keanekaragaman hayati, serta penyedia sumber daya bagi manusia, sehingga pemahaman tentang pertumbuhan dan kelangsungan hidupnya penting untuk keberlanjutan ekosistemnya. Penelitian ini membandingkan laju pertumbuhan dan kelangsungan hidup dua spesies karang, *Caulastrea furcata* dan *Montipora foliosa* dalam sistem pemeliharaan *ex-situ* selama 10 minggu di LINI *Aquaculture and Training Centre* (LATC), Bali. Pengukuran pertumbuhan dilakukan menggunakan perangkat lunak *ImageJ*, sedangkan analisis data menggunakan uji ANOVA dan *T-Test*. Hasil menunjukkan bahwa *Caulastrea furcata* memiliki laju pertumbuhan lebih tinggi dibandingkan *Montipora foliosa*. Laju pertumbuhan *Caulastrea furcata* berkisar antara 0,106–0,391 cm/minggu (panjang), 0,087–0,273 cm/minggu (lebar), dan 0,596–1,832 cm²/minggu (luas). Laju pertumbuhan *Montipora foliosa* lebih rendah, yaitu 0,017–0,023 cm/minggu (panjang), 0,008–0,061 cm/minggu (lebar), dan 0,045–0,275 cm²/minggu (luas). Tingkat kelangsungan hidup *Caulastrea furcata* mencapai 100% di semua ukuran, sedangkan *Montipora foliosa* juga bertahan hidup 100% akan tetapi mengalami peristiwa *bleaching coral* sebagian. Lingkungan pada bak pemeliharaan yang dikontrol seperti suhu (22–24°C) dan salinitas (34–36 ppt) berperan dalam keberhasilan pemeliharaan. Hasil ini menunjukkan bahwa pemilihan spesies karang berdasarkan morfologi dan respons fisiologis penting untuk mendukung keberhasilan konservasi berbasis *ex-situ*.

Kata Kunci: *Laju Pertumbuhan, Kelangsungan Hidup, Caulastrea furcata, Montipora foliosa, Ex-situ*

VITA ADITYA NPM. 21.03.4.1.1.00041. *Comparison of Growth Rate and Survival of Fragmentation Coral *Caulastrea furcata* and *Montipora foliosa* in Culture Tanks.* Under the guidance of **Wahyu Andy Nugraha, ST., M.Sc., Ph.D.**

ABSTRACT

Coral reefs play an important role as habitats, maintain biodiversity guardians, and resource provide for humans, so understanding coral growth and survival is important for the sustainability of their ecosystems. This study compared the growth and survival rates of two coral species, *Caulastrea furcata* and *Montipora foliosa* in an ex-situ culture system for 10 weeks at the LINI Aquaculture and Training Center (LATC), Bali. Growth measurements were performed using ImageJ software, while data analysis used ANOVA and T-Test. The results showed that *Caulastrea furcata* had a higher growth rate than *Montipora foliosa*. The growth rate of *Caulastrea furcata* ranged from 0.106–0.391 cm/week (length), 0.087–0.273 cm/week (width), and 0.596–1.832 cm²/week (area). The growth rate of *Montipora foliosa* was lower, namely 0.017–0.023 cm/week (length), 0.008–0.061 cm/week (width), and 0.045–0.275 cm²/week (area). The survival rate of *Caulastrea furcata* reached 100% at all sizes, while *Montipora foliosa* also survived 100% but experienced partial coral bleaching. The environment in the controlled culture tank such as temperature (22–24°C) and salinity (34–36 ppt) played a role in the success of culture. These results indicate that the selection of coral species based on morphology and physiological responses is important to support the success of ex-situ conservation.

Keywords: Growth Rate, Survival Rate, *Caulastrea furcata*, *Montipora foliosa*, Ex-situ