

Effect of light sources and intensities on the growth of propagated corals *Dipsastraea pallida* (Dana, 1846) and *Dipsastraea speciosa* (Dana, 1846)

ABSTRACT

Aim: To determine the effect of different light sources and intensities on the growth of propagated scleractinian corals *Dipsastraea pallida* and *Dipsastraea speciosa* from Tanjung Tuan, Melaka. **Methodology:** A total of 120 replicates from each *D. pallida* and *D. speciosa* were kept under LED and fluorescent lights with three controlled intensities (Photosynthetic Photon Flux Density, PPFD = 60, 80 and 100 $\mu\text{mol m}^{-2} \text{s}^{-1}$). Initial weight was recorded before the experiment and weekly growth in weights was recorded for six weeks. **Results:** *Dipsastraea pallida* and *D. speciosa* achieved 8.26 mg and 8.28 mg under LED light, and 8.16 mg and 8.22 mg growth under fluorescent light in six weeks 60 $\mu\text{mol m}^{-2} \text{s}^{-1}$. The highest specific growth rate for *D. pallida* and *D. speciosa* was observed at 60 $\mu\text{mol m}^{-2} \text{s}^{-1}$. Insignificant difference was observed between LED and fluorescent lights for coral growth with same intensity exposure. The study indicates that moderate light intensity at 60 $\mu\text{mol m}^{-2} \text{s}^{-1}$ enhanced better growth rate than higher intensity for *D. pallida* and *D. speciosa* from the turbid waters of Tanjung Tuan, Melaka. **Interpretation:** The experiment showed that corals from turbid water, *D. pallida* and *D. speciosa* grow better under moderate intensities than high intensities under both LED and fluorescent lights. However, intensity from fluorescent light was less penetrating in seawater as the lights have to be closer to water surface than LED lights which leads to the concern of allowing of excess heat into the culture medium.

Keyword: Corals; *Dipsastraea pallida*; *Dipsastraea speciosa*; Fluorescent; Light intensity; Scleractinian coral