

**TIGMOMORFOGENESIS AKAR TANAMAN KANGKUNG DARAT
(*Ipomoea reptans* Poir.) AKIBAT PEMBERIAN IRIGASI TETES DAN
KABUT
INTISARI**

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Akar merupakan komponen tumbuhan yang penting berfungsi sebagai penyangga tubuh tanaman serta pengambil hara dan air dalam tanah. Tujuan dari penelitian ini adalah mengamati dan mengukur respon akar tanaman kangkung darat (*Ipomoea reptans* Poir.) akibat tigmomorfogenesis irigasi tetes dan kabut. Respon akar dimodelkan dengan *logistic equation* untuk memprediksi pertumbuhannya. Parameter yang digunakan dalam penelitian ini adalah panjang akar, berat basah akar, berat basah tajuk, berat kering akar, berat kering tajuk dan rasio tanaman. Pengukuran dilakukan selama 22 hari, menggunakan *root window* skala *greenhouse*. Dari penelitian ini didapatkan rerata parameter pada irigasi tetes panjang akar 19,25 cm ;berat basah akar 6,18 g ; berat basah tajuk 18,36 g; berat kering akar 0,91g; berat kering tajuk 2,02g; volume akar 5,44 ml dan rasio 2,28. Sedangkan nilai parameter pada irigasi kabut memiliki rerata panjang akar 19,33 cm; berat basah akar 6 g ; berat basah tajuk 19,635g; berat kering akar 0,8g; berat kering tajuk 2,02g; volume akar 5,88 ml dan rasio 2,6. Irigasi tetes menghasilkan akar yang panjang namun volume akar sedikit. Tigmomorfogenesis akar kangkung dapat dimodelkan dengan *logistic equation* dengan koefisien determinasi 0,84 pada irigasi tetes dan 0,89 pada irigasi kabut. Laju pertumbuhan akar dengan irigasi tetes dan kabut masing-masing: $y = e^{-0,087x}$ dan $y = e^{-0,107x}$. Penelitian ini memberikan rekomendasi irigasi kabut untuk budidaya kangkung.

Kata Kunci : Tigmomorfogenesis, Irigasi Tetes, Irigasi Kabut, Model *Logistic Equation* *Ipomoea reptans* Poir.

THIGMOMORPHOGENESIS OF ROOTS WATER SPINACH (*Ipomea reptans* Poir.) AS A RESPONSE TO DRIP AND MIST IRRIGATION

ABSTRACT

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Roots are an important plant component. Roots function as a support for the plant body as well as nutrients and water absorber in the soil. The purposes of this study were to observe and measure the roots response of water spinach (*Ipomea reptans* Poir.) due to thigmomorphogenesis of drip and mist Irrigation. Root response was modeled by logistic equation predict its growth. The parameters used in this study were root length wet weight, canopy wet weight, root dry weight, canopy dry weight an plant ratio. Observations were carried out for 22 days, using a green house scale root window. The mean root length, root wet weight, crown wet weight, root dry weight crown dry weight, root volume, and root-crown ratio of drip irrigation were 19.25 cm, 6.18 g, 18.36 g, 0.91 g; 2.02 g; 5.44 ml 2.28, respectively. Meanwhile, root wet weight, crown wet weight, root dry weight, crown dry weight, root volume, and root-crown ratio of mist irrigation were 19.33, 6 g, 19.635 g, 0.8, 2.02, 5.88 ml, and 2.6, respectively. Drip irrigation produced longer root roots but lower root . The thigmomorphogenesis of water spinach roots could be modeled using the logistic equation with a coefficient of determination of 0.84 in drip irriation and 0.89 in mist irrigation. Root growth rate model with drip and mist irrigation were $y = e^{-0,087x}$ and $y = e^{-0,107x}$, respectively. Mist irrigation were recommended for water spinach cultivation.

Key word: Thigmomorphogenesis, Drip Irrigation, Mist Irrigation, Logistic Equation Model, *Ipomea reptans* poir.