PENGARUH KOMPOSISI MEDIA DAN KADAR SALINITAS TERHADAP PERTUMBUHAN SEMAI *Rhizophora apiculata* Blume

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INTISARI

Solusi alami pemulihan ekosistem mangrove yang rusak dilakukan melalui kegiatan restorasi dengan penanaman jenis mangrove tertentu. *R. apiculata* Blume menjadi salah satu alternatif jenis yang tepat digunakan dalam percepatan kegiatan restorasi dalam skala besar melalui perbanyakan bibit. Penelitian ini merupakan upaya perbanyakan generatif *R. apiculata* Blume melalui persemaian *ex-situ* dengan berbagai taraf perlakuan kadar salinitas dan komposisi media guna mengetahui adaptasi semai *R. apiculata* Blume terhadap perlakuan yang diberikan. Tujuan penelitian ini yaitu mengetahui pengaruh komposisi media tanam dan kadar salinitas air terhadap persen hidup, pertumbuhan semai *R. apiculata* Blume hingga umur tiga bulan setelah penyapihan.

Penelitian ini dilakukan di Laboratorium Silvikultur Intensif Fakultas Kehutanan UGM dengan menggunakan percobaan faktorial dengan Rancangan Petak Terbagi (*Split Plot Design*). Propagul *R. apiculata* Blume didapatkan dari hutan mangrove di Labuhan Maringgai, Lampung Timur, Lampung. Perlakuan yang diberikan yaitu empat taraf kadar salinitas (kadar salinitas 0, 5-15, 15-25, dan >25 ppt) dan empat taraf komposisi media (lumpur 100%, lumpur:pasir 1:1, lumpur:pasir 3:7, dan pasir 100%). Setiap perlakuan diulang sebanyak 10 kali ulangan sehingga total semai yang digunakan 160 semai. Semai ditumbuhkan dalam *polybag* dengan berbagai komposisi media yang diletakkan pada blok penampung dengan sirkulasi air berbagai kadar salinitas. Pengontrolan kadar salinitas dilakukan dengan pengukuran kadar salinitas air setiap dua hari sekali menggunakan *refraktometer*, dan akan dilakukan penyesuaikan ketika terjadi perubahan kadar salinitas. Pengumpulan data dilakukan selama tiga bulan sejak penyapihan dengan pengukuran yang meliputi persen hidup, tinggi batang, diameter batang, dan jumlah daun.

Hasil pengamatan menunjukkan bahwa kadar salinitas dan komposisi media memberikan pengaruh pada persen hidup 100% di akhir pengamatan. Kadar salinitas mempengaruhi pertumbuhan tinggi batang, diameter batang, dan jumlah daun secara signifikan, dan komposisi media hanya mempengaruhi pertumbuhan tinggi batang dan jumlah daun secara signifikan. Tidak ditemukan adanya interaksi antara faktor kadar salinitas dan komposisi media. Secara umum, pertumbuhan semai *R. apiculata* Blume terbaik adalah pada perlakuan kadar salinitas 0 ppt dan komposisi media lumpur 100%. Kombinasi kedua taraf perlakuan tersebut juga menghasilkan pertumbuhan semai terbaik.

Kata kunci : Mangrove, perbanyakan bibit, pertumbuhan semai.

EFFECT OF MEDIA COMPOSITION AND SALINITY LEVEL ON THE GROWTH OF *Rhizophora apiculata* Blume SEEDLINGS

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ABSTRACT

A natural solution to restore damaged mangrove ecosystems is through restoration activities by planting certain mangrove species. *R. apiculata* Blume is one of the alternative species that can be used to accelerate restoration activities on a large scale through seedling propagation. This research is an effort to generative propagation of *R. apiculata* Blume through ex-situ nursery with various levels of salinity treatment and media composition to determine the adaptation of *R. apiculata* Blume seedlings to the treatment given. The purpose of this study was to determine the effect of planting media composition and water salinity levels on the percent survival and growth of *R. apiculata* Blume seedlings until the age of three months after weaning.

This research was conducted at the Intensive Silviculture Laboratory, Faculty of Forestry UGM using factorial experiment with Split Plot Design. *R. apiculata* Blume propagules were obtained from mangrove forest in Labuhan Maringgai, East Lampung, Lampung. The treatments were four levels of salinity (salinity levels of 0, 5-15, 15-25, and >25 ppt) and four levels of media composition (100% mud, mud:sand 1:1, mud:sand 3:7, and 100% sand). Each treatment was repeated 10 times so that a total of 160 seedlings were used. Seedlings were grown in polybags with various media compositions placed in a container block with circulating water of various salinity levels. Salinity levels were controlled by measuring water salinity levels every two days using a refractometer, and adjustments will be made when there are changes in salinity levels. Data collection was conducted for three months since weaning with measurements including percent survival, stem height, stem diameter, and number of leaves.

The results showed that salinity levels and media composition influenced the 100% survival percent at the end of the observation. Salinity levels significantly affected the growth of stem height, stem diameter, and number of leaves, while media composition only significantly affected the growth of stem height and number of leaves. There was no interaction between salinity levels and media composition. In general, the best growth of *R. apiculata* Blume seedlings was in the treatment of 0 ppt salinity level and 100% mud media composition. The combination of the two treatment levels also produced the best seedling growth.

Keywords: Mangroves, seedling propagation, seedling growth.