

PENGARUH KOMPOSISI MEDIA DAN KADAR SALINITAS AIR TERHADAP PERTUMBUHAN BIBIT *Bruguiera gymnorrhiza* (L.) Lamk

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INTISARI

Ekosistem mangrove tersebar di seluruh dunia dan Indonesia merupakan salah satu negara dengan area mangrove terluas meliputi 19% dari luas mangrove dunia. Namun, sejak 34 tahun terakhir telah terjadi penurunan luas mencapai 12.647 ha per tahun. Upaya rehabilitasi mangrove terus dilakukan dan *Bruguiera gymnorrhiza* menjadi salah satu jenis yang dipilih karena kemampuan adaptasinya. Biasanya *B. gymnorrhiza* tersebar di zona tengah hingga belakang mangrove dengan kadar salinitas air tidak terlalu tinggi. Jenis ini dapat berbuah sepanjang tahun, namun regenerasinya sering kali terganggu akibat sebagian buahnya hanyut terbawa gelombang pasang sehingga regenerasinya perlu dibantu melalui program di persemaian. Oleh sebab itu, upaya perbanyak bibit *B. gymnorrhiza* harus dilakukan, khususnya melalui persemaian *ex situ* dengan menggunakan berbagai perlakuan kadar salinitas air dan komposisi media. Tujuan pada penelitian ini yaitu untuk mengetahui respon bibit *B. gymnorrhiza* terhadap komposisi media dan kadar salinitas air pada persemaian *ex-situ* dengan parameter pengamatan meliputi persen hidup, tinggi batang, diameter dan jumlah daun.

Penelitian dilaksanakan dari bulan April - Agustus tahun 2023 di *Glass House* Persemaian Klebengan, Laboratorium Silvikultur Intensif Fakultas Kehutanan UGM. Benih *B. gymnorrhiza* berasal dari Kabupaten Kebumen yang kemudian disemaikan dan dipindah ke dalam bak pengamatan dengan sistem penggenangan dan air mengalir. Penelitian menggunakan rancangan split plot desain dengan kadar salinitas sebagai main plot dan komposisi media sebagai subplot. Perlakuan yang digunakan terdiri dari 4 kadar salinitas (0 - 5 ppt, 5 - 15 ppt, 15 - 25 ppt dan > 25 ppt) dan 4 komposisi media (lumpur 100%, pasir 100%, lumpur+pasir 1:1 dan 3:7) dengan 16 kombinasi perlakuan.

Hasil penelitian menunjukkan bahwa rata-rata persen hidup bibit cukup tinggi yaitu 91,25%. Kadar salinitas air dan interaksinya dengan media terbukti berbeda nyata terhadap tinggi batang, pertumbuhan diameter dan jumlah daun. Komposisi media hanya berbeda nyata pada pertumbuhan diameter saja. Kadar salinitas terbaik agar bibit tumbuh optimal yaitu 0 - 5 ppt dan komposisi media lumpur 100%. Selain itu, kadar salinitas 5 - 15 ppt masih dapat mendukung pertumbuhan bibit secara optimal, namun dengan media tertentu yaitu pasir 100%, campuran lumpur+pasir 1:1 dan 3:7.

Kata Kunci : Mangrove, *B. gymnorrhiza*, respon pertumbuhan, kadar salinitas, komposisi media, persemaian *ex-situ*

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EFFECT OF MEDIA COMPOSITION AND WATER SALINITY ON THE GROWTH OF *Bruguiera gymnorrhiza* (L.) Lamk SEEDLINGS

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ABSTRACT

Mangrove ecosystems are spread throughout the world and Indonesia is one of the countries with the largest mangrove area covering 19% of the world's mangrove area. However, over the last 34 years there has been a decline area of 12,647 ha per year. Rehabilitation still going on and *Bruguiera gymnorrhiza* was selected because its adaptability. Normally *B. gymnorrhiza* is spread in the middle to rear zones with low-medium salinity levels. This type can bear fruit all year round, but its regeneration is often disrupted due to some of the fruit being washed away by tidal waves so its regeneration needs to be assisted through programs in the nursery. Therefore, efforts to propagate *B. gymnorrhiza* seeds must be carried out, especially through ex situ seeding using various treatments of water salinity levels and media composition. The aim of this research was to determine the response of *B. gymnorrhiza* seedlings to media composition and water salinity in ex-situ nurseries levels with the parameters observed including percent of survival rate, stem height, diameter and number of leaves.

The research was carried from April - August 2023 at the Glass House Klebengan Nursery, Intensive Silviculture Laboratory Faculty of Forestry, UGM. *B. gymnorrhiza* seeds come from Kebumen Regency which were then sown and moved into observation tanks with a flooding and water flow system. The research used a split plot design with salinity levels as the main plot and media composition as the subplot. The treatment used consisted of 4 salinity levels (0 - 5 ppt, 5 - 15 ppt, 15 - 25 ppt and > 25 ppt) and 4 media compositions (100% mud, 100% sand, 1:1 and 3:7 mud+sand) with 16 treatment combinations.

Observations results show that the the average of seedlings survival rate was quite high reach 91.25%. Salinity levels and their interaction with the media were proven to have a difference effect on stem height, diameter growth and number of leaves. Media composition only had a difference effect on diameter growth. The best salinity level for optimal seedling growth was 0 - 5 ppt and 100% mud media composition. However, salinity levels of 5 - 15 ppt can still support optimal seedling growth, but with certain media, includes 100% sand, mud+sand of 1:1 and 3:7.

Keyword : Mangrove, *B. gymnorrhiza*, growth response, salinity levels, media composition, ex-situ nursery

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