

## **KEMAMPUAN TUMBUH SEMAI MANGROVE JENIS *Bruguiera cylindrica* PADA BERBAGAI KADAR SALINITAS DAN KOMPOSISI MEDIA**

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### **INTISARI**

Indonesia memiliki kekayaan mangrove yang sangat tinggi, namun kerusakan mangrove terus terjadi diakibatkan penebangan dan konversi lahan sehingga luasannya berkurang terus-menerus. Pengadaan bibit tanaman mangrove yang berkualitas merupakan upaya awal untuk merehabilitasi hutan mangrove, salah satu jenis yang digunakan adalah *Bruguiera cylindrica*. Regenerasi alami *B. cylindrica* di alam memiliki banyak kendala, selain membutuhkan waktu lama, propagul juga mudah terbawa arus air laut, sehingga tercipta alternatif perbanyakan secara *ex-situ* dengan berbagai perlakuan kadar salinitas dan komposisi media. Penelitian ini dilakukan untuk mengetahui respon tanaman terhadap faktor yang diberikan seperti salinitas dan komposisi media.

Penelitian ini dilakukan di Laboratorium Silvikultur Intensif, Klebengan, UGM. Propagul *B. cylindrica* diperoleh dari Kawasan Hutan Mangrove Ayah di Muara Sungai Bodo, Pantai Logending, Jawa Tengah. Terdapat dua faktor yang diberikan dengan masing-masing 4 taraf, yaitu kadar salinitas 0-5 ppt (N1), 5-15 ppt (N2), 15-25 ppt (N3), dan 25-30 ppt (N4) dan komposisi media lumpur 100% (K1), campuran pasir 50% + lumpur 50% (K2), campuran pasir 70% + campuran lumpur 30% (K3), dan pasir 100% (K4). Jumlah total semai yang digunakan sebanyak 160 semai dengan rincian 4 taraf salinitas, 4 taraf komposisi media dengan 10 kali pengulangan. Tiap parameter diukur setiap minggu selama tiga bulan pengamatan meliputi persen hidup, tinggi batang, diameter batang, dan jumlah daun. Analisis data menggunakan ANOVA dan dilanjutkan uji lanjut (*Duncan*) untuk hasil yang berbeda nyata.

Persen hidup semai yang tinggi terdapat pada salinitas 0-5 ppt yaitu 100%. Kadar salinitas berpengaruh terhadap pertumbuhan tinggi, diameter dan jumlah daun, sedangkan media juga berpengaruh kecuali terhadap pertumbuhan diameter. Interaksi faktor salinitas dan komposisi media juga mempengaruhi parameter tersebut. Secara umum, persen hidup, pertumbuhan tinggi, diameter dan jumlah daun terbaik untuk semai *B. cylindrica* adalah 0-5 ppt, sedangkan media yang menunjukkan pertumbuhan yang baik adalah media pasir 100% dan lumpur 100%.

**Kata kunci:** Mangrove, rehabilitasi, *B. cylindrica*, salinitas, komposisi media

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## **ABILITY TO GROW SEEDLINGS *Bruguiera cylindrica* MANGROVE TYPES AT DIFFERENT LEVELS OF SALINITY AND MEDIA COMPOSITION**

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### **ABSTRACT**

Indonesia has a very high mangrove richness, but mangrove degradation continues to occur due to deforestation and land use change so that the area continues to decrease. Procurement of high quality mangrove plant seeds is initial step for mangrove forests rehabilitation, one of them that currently used is *Bruguiera cylindrica*. Natural regeneration of *B. cylindrica* in nature has many obstacles, one of them is it takes plenty of time to growth, carried away easily by seawater currents, so an alternative is made ex-situ propagation with various treatments of salinity levels and media composition. This study was conducted to determine the response of plants to the given factors such as salinity and media composition.

This research was conducted at the Intensive Silviculture Laboratory, Klebengan, UGM. *B. cylindrica* propagules were obtained from Ayah Mangrove Forest Area at Bodo River Estuary, Logending Beach, Central Java. There were two factors with 4 levels each, namely salinity levels of 0-5 ppt (N1), 5-15 ppt (N2), 15-25 ppt (N3), and 25-30 ppt (N4) and 100% mud media composition (K1), 50% sand + 50% mud mixture (K2), 70% sand + 30% mud mixture (K3), and 100% sand (K4). The total number of seedlings used was 160 seedlings with details of 4 salinity levels, 4 levels of media composition with 10 repetitions. Each parameter was measured weekly for three months of observation including percent survival, stem height, stem diameter, and number of leaves. Data analysis using ANOVA and followed by further test (*Duncan*) for significantly different results.

Survival rate seedlings are high in salinity 0-5 ppt which is 100%. Salinity levels affect the growth of height, diameter and number of leaves, while the media also affects except for diameter growth. The interaction factor of salinity and media composition also affects these parameters. In general, the best percent survival, height growth, diameter and number of leaves for *B. cylindrica* seedlings are 0-5 ppt, and the best media is 100% sand and 100% mud.

**Keyword:** Mangrove, rehabilitation, *B. cylindrica*, salinity, media composition

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