

A. LAPORAN HASIL PENELITIAN

B. DRAF ARTIKEL ILMIAH

C. LAMPIRAN

RINGKASAN DAN SUMMARY

RINGKASAN

Pembibitan Mangrove secara Ex Situ dengan Air Tawar

Telah dilakukan penelitian pembibitan *Bruguiera gymnorrhiza*, *Rhizophora apiculata* dan *Rhizophora mucronata* secara *ex situ* di Rumah Kaca Jurusan Biologi FMIPA Unsri. Tujuan penelitian untuk menghasilkan bibit siap tanam yang dilakukan secara *ex situ* dengan air tawar. Hasil yang diperoleh adalah bibit *B. gymnorrhiza*, *R. apiculata* dan *R. mucronata* yang siap tanam pada umur 4 bulan dengan kriteria jumlah daun maksimum masing-masing 5, 4 dan 3 pasang, sedangkan tinggi tunas masing-masing maksimum 27,5 cm; 31 cm; dan 32,5 cm. Bulan pertama masa pembibitan jumlah buah yang berkecambah untuk *B. gymnorrhiza*, *R. apiculata* dan *R. mucronata* masing-masing 94 %, 96 % dan 64 %.

Studi Pertumbuhan dan Adaptasi Beberapa Jenis Mangrove di Muara Sungai Musi

Penelitian ini bertujuan untuk mengetahui pengaruh umur bibit terhadap pertumbuhan dan mengetahui umur bibit yang memberikan pertumbuhan terbaik terhadap masing-masing jenis mangrove (*Rhizophora apiculata* dan *Rhizophora mucronata*). Dilaksanakan dari bulan juni 2009 hingga september 2009 di Muara Sungai Musi, Delta Upang, Kabupaten Banyuasin, Sumatera Selatan. Penelitian menggunakan metode Rancangan Acak Kelompok (RAKF). Faktor pertama adalah jenis mangrove S_1 (*Rhizophora apiculata*) dan S_2 (*Rhizophora mucronata*), faktor kedua adalah umur bibit ,yaitu U_1 (0 bulan/ menggunakan propagul), U_2 (2 bulan), U_3 (3 bulan), U_4 (4 bulan). Terdapat 8 kombinasi perlakuan yang di ulang sebanyak tiga kali. Hasil penelitian menunjukkan bahwa dua jenis mangrove tidak memberikan pengaruh yang berarti pada fase pertumbuhannya di Muara Sungai Musi. Umur bibit sangat berpengaruh terhadap pertumbuhan bibit dan bibit berumur empat bulan memberikan pertumbuhan yang terbaik.

Pengaruh Pengepakan dan Media Tanam terhadap Pertumbuhan Propagul *Rhizophora apiculata* dan *Bruguiera gymnorrhiza*

Penelitian ini bertujuan untuk mendapatkan teknik pengepakan dan media pembibitan terbaik terhadap pertumbuhan propagul *Rhizophora apiculata* dan *Bruguiera gymnorrhiza*. Dilaksanakan dari bulan Oktober 2008 hingga Februari 2009 di Rumah Kaca Jurusan Budidaya Pertanian Universitas Sriwijaya. Penelitian menggunakan metode Rancangan Acak Lengkap Faktorial (RALF). Terdapat 30 kombinasi perlakuan dengan menggunakan propagul *R. apiculata* dan *B. gymnorrhiza*. Perlakuan pertama Pengepakan (P), terdiri dari P1 (menggunakan Kardus), P2 (menggunakan Plastik), dan P3 (menggunakan Karung Beras). Perlakuan kedua Media Tanam (M), terdiri dari M1 (Media Tanah), M2 (Media Pasir), M3 (Media Lumpur), M4 (Kombinasi Media Tanah dan Pasir), dan M5 (Kombinasi Media Lumpur dan Pasir). Setiap kombinasi perlakuan terdiri dari 3 ulangan. Hasil penelitian menunjukkan bahwa perlakuan pengepakan menggunakan plastik memberikan pengaruh yang terbaik pada peubah persentase tunas tanaman *R. apiculata*. Perlakuan media menggunakan lumpur pada tanaman *B. gymnorrhiza* juga memberikan pengaruh terbaik terhadap peubah tinggi tunas, kandungan khlorofil, dan nisbah pucuk.

Effect of some environmental factors on the growth and photosynthesis of 3 species of mangrove seedlings

In this research, effect of light intensity, temperature and CO₂ concentration on the growth and photosynthesis of 3 species of mangrove seedlings was studied by two experiments. All experiment was carried out in Department of Agronomy, Faculty of Agriculture, Sriwijaya University, Indralaya.

1) Effect of several degrees of shading on the growth of 2 species of mangrove seedlings (*Rhizophora apiculata* and *Rhizophora mucronata*): As the whole, 50% and 60% shading treatment give positive ompacts to the growth of both species. However, it is not clear that which percentage is more available; Judging from the result of chlorophyll content, the length of shading period, for 5 months in this research, has to be considered.

2) Effect of light intensity, leaf temperature and CO₂ concentration on photosynthesis of 2 mangrove species (*Rhizophora mucronata* and *Bruguiera gymnorrhiza*): *Rhizophora mucronata* is more suitable to be planted in the higher temperature and light intensity area; *B.gymnorrhiza* show higher maximum value than

saturation point of C₃ plant on CO₂ concentration.

SUMMARY

Study of Growth and Adaptation of Two Types Mangrove in Estuary of Musi River

This research was to study the effect of seedling age to the growth of two type of mangroves (*Rhizophora apiculata* and *Rhizophora mucronata*). This research was carried out in Estuary of Musi River, Delta Upang, Banyuasin, South Sumatra, started from June to September 2009. This research used a Randomized Block Design which was arranged in Factorial with two factors. First factor was type of mangrove, that were *Rhizophora apiculata* (S₁) and *Rhizophora mucronata* (S₂). Second factor was seedling age, that were 0 month (U₁), 2 month (U₂), 3 month (U₃), and 4 month (U₄). Each treatment consisted of three replications and each unit of treatment consisted of five plants. The result indicated that four month old *Rhizophora mucronata* (S₂U₄) showed the highest growth of plant height, stem diameter, and dry weight. One month old seedling are could grow better with high survival rate (80%). Moreover, three month old of seedling age (U₃) plant grew with higher number of plant leaf.

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1. *Rhizophora mucronata* is more suitable to be planted in the higher temperature and light intensity area.
2. *B.gymnorhiza* show higher maximum value than saturation point of C₃ plant on CO₂ concentration.