Nypa fruticans SEEDS: GERMINATION AND VIABILITY AND THEIR SEEDLINGS TOLERANCE TO SALINITY

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Lihat sebelah

Nypa fruticans SEEDS GERMINATION AND VIABILITY AND THEIR SEEEDLINGS TOLERANCE TO THE SALINITY

By

Dunging Anak Buda

A thesis submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Applied Science Biodiversity (Conservation and Management)

DEPARTMENT OF BIOLOGICAL SCIENCES

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: ***Nypa fruticans*** **SEEDS GERMINATION AND VIABILITY AND THEIR SEEDLINGS TOLERANCE TO THE SALINITY** oleh **DUNGING ANAK BUDA**, no. matrik: **UK12679** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah **SARJANA MUDA SAINS GUNAAN (PEMULIHARAAN DAN PENGURUSAN BIODIVERSITI)**., Fakulti Sains dan Teknologi,Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this thesis entitled *Nypa fruticans* Seeds Germination and Viability and their Seedlings Tolerance to the Salinity is the result of my own research except as cited in the references.

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ABSTRACT

Despite being most abundant exclusive mangrove species in East West of Peninsular Malaysia, *Nypa fruticans* biologically is still under study. In this study, the viability and germination of *Nypa fruticans* seeds in mangrove sediment and sandy soils were tested for 30 days. Growth medium does not significantly influences seeds viability. But, sandy showing high mean of germination within periods of study. While seedlings response to salinity was tested for fifty days within salinity ranges; 0 ppt, 5 ppt, 15 ppt, 25 ppt and 35 ppt. (part per thousand). Seedlings tolerance was evaluated using; shoot elongation, root elongation and seedlings full establishment. Selected parameters were tested using One-Way ANOVA and UNIANOVA to compare mean of difference of the collected data. . High salinity, 25 ppt and 35 ppt respectively significantly inhibit the shoot elongation were about 0.94±0.45 and 3.53±0.33. Lower salinity, 5 ppt and 0 ppt significantly have low inhibition effect on the shoot elongation thus favoring the shoot to elongate at maximum length. Seedlings root elongation also significantly affected by the salinity, even though the differences among the treatment does not large as expected. Seedlings full establishment was significantly delayed by the salinity. Seedlings full establishment at 5 ppt showing the high percentages, 11.11 % respectively. Seedlings full establishment mostly recorded on the 8^{th} weeks of study. At high salinity, 25 ppt and 35 ppt was significantly delayed the seedlings to reach full establishment. Absence of salts, at 0 ppt which set as the control significantly supports the growth of *Nypa fruticans* without inhibition effect observed at shoot elongation, root elongation and seedlings full establishment.

PERCAMBAHAN DAN KEBERJAYAAN UNTUK MEMBIAK BIJI BENIH *Nypa fruticans* DAN TOLERANSI ANAK BENIHNYA TERHADAP KEMASINAN

ABSTRAK

Walaupun *Nypa fruticans* adalah spesies bakau eklusif paling banyak didapati di kawasan Pantai Timur Semenanjung Malaysia, namun secara biologinya sedang dalam kajian. Dalam kajian ini, keberjayaan untuk bercambah dan kebolehan untuk bercambah anak benih *Nypa fruticans* pada tanah bekau dan tanah berpasir diuji selama 30 hari. Hasil kajian menunjukkan bahawa media pertumbuhan tidak memberikan kesan yang ketara terhadap keberjayaan biji benih untuk bercambah dalam tempoh masa kajian. Manakala tindakbalas anak benih *Nypa fruticans* terhadap kemasinan di uji dalam tempoh lima puluh hari pada lingkungan kemasinan 0 ppt, 5 ppt, 15 ppt, 25 ppt dan 35 ppt. Toleransi anak benih terhadap kemasinan di nilai berdasarkan ukuran pemanjangan pucuk, pemanjangan akar dan penetapan penuh anak benih. Ukuran setiap parameter terpilih di uji dengan ANOVA dan UNIANOVA. Pada kemasinan yang tinggi, iaitu 25 ppt dan 35 ppt didapati ada kesan ketara terhadap yang menganggu min pemanjangan pucuk kira-kira 0.94±0.45 cm dan3.53±0.33 cm. Pada kemasinan yang rendah, iaitu 5 ppt dan 0 ppt didapati dengan ketara tidak menganggu pemanjangan pokok tetapi membolehkan pemanjangan maksimum. pucuk. Pemanjangan akar anak benih juga menunjukkan kesan yang ketara apabila di rawat pada kemasinan yang berlainan walaupun perbezaan antara rawatan tidak jauh seperti yang dijangka. Penetapan penuh anak benih juga didapati dengan ketara telah dilambatkan oleh kesan air masin. Penetapan penuh anak benih pada 5 ppt menunjukkan peratus yang tinggi, iaitu 11.11 peratus. Penetapan penuh anak benih kebanyakanny direkodkan pada minggu ke – 8 tempoh kajian. Pada kemasinan yang tinggi, iaitu 25 ppt dan 35 ppt didapati dengan ketara melambatkan anak benih untuk mencapai penetapan penuh. Ketidakhadiran garam, iaitu 0 ppt yang dijadikan set kawalan dalam kajian dengan ketara menggalakan pertumbuhan anak benih. tanpa ada kesan pembantutan terhadap pemanjangan pucuk, akar dan penetapan penuh anak benih.