

ESTABLISHMENT TISSUE CULTURE OF
NIPPA FRUITIGANS

WONG HUI LIEN

FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

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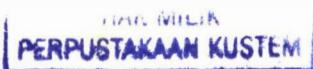


PERPUSTAKAAN

KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA
21030 KUALA TERENGGANU

1100046069

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ESTABLISHMENT TISSUE CULTURE OF *NYPHA FRUTICANS*

By

Wong Hui Lien

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the requirements for the degree of
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Faculty of Science and Technology
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JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: ESTABLISHMENT TISSUE CULTURE OF *Nypha fruticans* oleh WONG HUI LIEN no. matrik: ...UK7905... 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 (SAINS BIOLOGI)....., Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

Disahkan oleh:

Penyelia Utama

Nama:

Cop Rasmi:

DR AZIZ BIN AHMAD (Ph.D)
LECTURER
Dept of Biological Sciences
Fakulty of Science and Technology
University Collage of Science
and Technology Malaysia
21030 Kuala Terengganu.

Tarikh: 27/4/2006

Penyelia Kedua (jika ada)

Nama:

Kasawani Ibrahim

Pensyarah

Cop Rasmi

Jabatan Sains Biologi

Fakulti Sains dan Teknologi

Kolej Universiti Sains dan Teknologi Malaysia

21030 Kuala Terengganu.

Tarikh: 27/4/2006

Ketua Jabatan Sains Biologi

Nama:

PROF. MADYA DR. NAKISAH BT. MAT AMIN

Ketua

Jabatan Sains Biologi

Fakulti Sains dan Teknologi

Kolej Universiti Sains dan Teknologi Malaysia

(KUSTEM)

21030 Kuala Terengganu.

Tarikh: 27/4/2006

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LIST OF SYMBOLS

| | |
|-------------------|----------------------------------|
| cm | - centimeter |
| Mm | - millimeter |
| Mg | - milligram |
| M | - Meter |
| cm ³ | - centimeter square |
| % | - percentage |
| °C | - degree centigrade |
| v.v ⁻¹ | - volume pervolume |
| NaOH | - sodium hydroxide |
| HCl | - hydrochloride acid |
| PGR | - plant growth regulator |
| BAP | - benzylaminopurine |
| NAA | - naphthalene acetic acid |
| IAA | - indoleacetic acid |
| MS | - media Murashige and Skoog |
| 2-ip, | - isopentenyl adenine |
| 2,4-D | - 2,4-dichlorophenoxyacetic acid |

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ABSTRACT

A mangrove palm *Nypa fruiticans* was successfully cultured *in-vitro*. Several sterilization treatments had been tested. The most suitable sterilization technique for the shoot tips were by using 100% Clorox (v/v) and immersed for 30 minutes. The explants were cultured in Murashige and Skoog (MS) medium containing either BAP, Kinetin, 2ip, Zeatin at various concentrations. The best medium for shoot tips cultures were on MS medium containing 5.0 mg/l Zeatin. The addition of 5ppt seawater was also enhance the growth of shoot and callus cultures about 50% of shoot were survived in the media MS containing 5.0 mg/l Zeatin, however, rarely damaged by tissue browning in subcultured. The best media for callus induction was MS added with 100mg/L of 2,4-D. Addition of sea water into the media did not significantly enhance the growth of callus.

ABSTRAK

Palma paya bakau *Nypa fruiticans* telah berjaya dikultur secara *in vitro*. Pelbagai rawatan pensterilan telah diujikan. Teknik pensterilan yang paling sesuai bagi tunas pucuk adalah menggunakan 100% klorox (v/v) dan direndamkan selama 30 minit. Eksplan telah dikultur atas media Murashige and Skoog (MS) yang mengandungi BAP, 2ip, Kinetin dan Zeatin dalam pelbagai kepekatan. Media lebih baik bagi kultur tunas pucuk adalah MS yang mengandungi 5.0 mg/L Zeatin. Pertambahan 5ppt air laut juga telah meningkatkan pertumbuhan kultur tisu pucuk dan kallus kira-kira 50% daripada pucuk eksplan telah hidup dalam MS media yang mengandungi 5.0 mg/L Zeatin, bagaimanapun terdapat sedikit tisu mengalami rosak akibat keperangan dalam subkultur. Media yang paling sesuai untuk pengaruan kallus adalah yang ditambah dengan 100mg/L 2,4-D. Penambahan air laut ke dalam media tidak membawa kesan yang ketara merangsang pertumbuhan callus.