ESTABLISHMENT OF TISSUE CULTURE OF

Tinospora tuberculata

[redacted]

[redacted]

2007

ESTABLISHMENT OF TISSUE CULTURE OF *Melaleuca leucadendron*

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **ESTABLISHMENT OF TISSUE CULTURE OF *Melaleuca leucadendron*** oleh **VAANMATHI A/P MAYAKRISHNAN** no. matrik: **UK10532** 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 BIOLOGY)**, Fakulti Sains dan Teknologi,Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

Mg/L	milligram per liter
%	Percentage
ºC	Degree centigrade
cm	Centimeter
µmol	Micromol
mmol	Milimol
kPa	Kilo Pascal
V/V	Volume per volume
PGRs	Plant growth regulators
FeEDTA	Ferum EDTA
2, 4-D	2, 4- dichlorophenoxyacetic acid
Dicamba	3, 6 – dichloroanisic acid
Picloram	4 - amino – 3, 4, 5 – trichloropicolinic acid
BAP	Berzylaminopurina
MS	Murashige and Skoog.

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ABSTRACT

The purpose of this study is to determine the best and suitable hormone for growth and proliferation of calli of *Melaleuca leucadendron*. The best sterilization treatment for leaves was 20% Chlorox (v/v) and immersed for 30 minutes and the sterilization for stem not obtained yet. Initiation calli from young leaves culture was established in Murashige and Skoog (MS) medium added with picloram (1, 2, 3, 5, 7 and 10mg/L) or 2, 4-Dichlorophenoxyacetic acid (1, 2 and 3mg/L) or dicamba (1, 3, 5 and 7mg/L) alone and combination of 2, 4-D with kinetin at ratio of 1:1, 2:1 and 3:1mg/L or picloram with kinetin at ratio of 1:1 and 2:1mg/L or picloram with BAP at ratio of 5:1, 7:1 and 10:1mg/L. Calli was produced in 5.0mg/L picloram, 3.0 or 5.0mg/L dicamba. Subculture of calli from 5.0mg/L picloram was died after two weeks but subculture of calli from 3.0mg/L dicamba form root after two weeks. Dicamba was more effective and suitable hormone compare to other hormones for calli induction of young leaves of *M.leucadendron.*

PENGHASILAN TISU KULTUR *Melaleuca leucadendron*

ABSTRAK

Tujuan utama kajian ini ialah untuk menentukan hormon yang paling baik dan sesuai bagi perkembangan dan pertumbuhan kalus pokok kayu putih. Teknik pensterilan yang terbaik untuk daun muda adalah 20% kepekatan Clorox disertai dengan 30 minit masa perendaman. Bagi batang pula, teknik pensterilan yang optimum tidak dapat ditentukan. Pembentukan kalus daripada daun muda telah dihasilkan dengan menggunakan Murashige and Skoog (MS) medium dengan Picloram (1, 2, 3, 5, 7 dan 10mg/L) atau 2, 4-D asid (1, 2 dan 3mg/L) atau dicamba (1, 3, 5 dan 7mg/L) berasingan dan campuran hormon iaitu 2, 4-D dengan kinetin pada nisbah 1:1, 2:1 atau 3:1mg/L atau picloram dengan kinetin pada nisbah 1:1, 2:1 dan 3:1mg/L atau picloram dengan BAP pada nisbah 5:1, 7:1 dan 10:1mg/L. Kalus telah dihasilkan pada 5.0mg/L picloram, 3.0 atau 5.0mg/L dicamba. Subkultur kalus pada 5.0mg/L picloram telah mati selepas dua minggu tetapi subkultur kalus pada 3.0mg/L dicamba pula membentuk akar selepas dua minggu. Dicamba adalah lebih efektif dan sesuai berbanding dengan hormon lain untuk pembentukan kalus bagi daun pokok kayu putih.