

IN VITRO CULTURE OF *Cryptocoryne minima*.

SUHAILI BINTI ZAKARIA

FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

2008

IN VITRO CULTURE OF *Cryptocoryne minima*

By
Suhaili Binti Zakaria

Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science (Biological Sciences)

**DEPARTMENT OF BIOLOGICAL SCIENCES
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITI MALAYSIA TERENGGANU
2008**

1100057862

This project should be cited as:

Suhaili, Z. 2008. *In Vitro* Culture of *Cryptocoryne minima*. Undergraduate thesis, Bachelor of Biological Sciences. Faculty of Science and Technology, Universiti Malaysia Terengganu. Terengganu. 49pp.

No part of this project report may be produced by any mechanical, photographic, or electronic process, or in the form of phonographic recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use, without written permission from the author and the supervisor(s) of the project.



JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II
RESEARCH REPORT VERIFICATION**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: ***In Vitro Culture of Cryptocoryne minima*** oleh **Suhaili Binti Zakaria**, no. matrik: **UK10671** 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, Universiti Malaysia Terengganu.

Disahkan oleh: Verified by:

Penyelia Utama/Main Supervisor

Nama: **Prof Madya Dr. Aziz bin Ahmad**

Cop Rasmi:

Tarikh:

PROF. MADYA DR. AZIZ BIN AHMAD
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Ketua Jabatan Sains Biologi/Head, Department of Biological Sciences

Nama: **Prof Madya Dr. Aziz bin Ahmad**

Cop Rasmi:


PROF. MADYA DR. AZIZ BIN AHMAD
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Tarikh:

13 MAY 2008

DECLARATION

I hereby declare that this thesis entitled *In Vitro Culture of Cryptocoryne minima* is the result of my own research expect as cited in the references.

Signature : 

Name : Suhaili binti Zakaria

Matric No : UK10671

Date : 12/5/2008

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim...

Alhamdulillah, my greatest thanks to Allah S.W.T for His bless and graciousness that finally I'm able to finish up my Final Year Project.

Most especially thanks to my project supervisor, Prof. Madya Dr. Aziz Ahmad for the chances and his undivided patience throughout this project.

Special thanks to all lecturers of Department of Biological Sciences, Faculty of Science and Technology, especially Dr. Aznawati, Dr. Mariam, Pn. Norhayati, and Chuah Tse Seng, for the ideas and much needed motivation.

Thanks to all staff Biotechnology, Biochemistry, Microbiology, Biodiversity and Anatomy Laboratory for their understanding and assistance in providing the materials for my project, especially to En. Mazrol and En. Mat.

Greatest thanks to my beloved mother, Gayah binti Dollah, family, my housemate, and my friends, especially Kak Sa, Jb, Nelly, Matun, Wani, Mek Yaa, Diana, and Liza for their physically and mentally support.

ABSTRACT

A *Cryptocoryne minima* is an aquatic plant from family Aracea. In vitro of *C. minima* were successful proliferated in B5 medium. The objective of this study is to determine the best medium for cultures and the effect of cytokinins on growth of *Cryptocoryne minima*. The explants were divided and cultured into treatment media containing Kinetin, 6-benzylaminopurine (BAP), Zeatine or 6-(γ,γ - dimethylallylamino) purine (2iP) at different concentration. The formation and changed were observed and recorded weekly. All explants that receiving various type and concentration of hormone showing differences in shoot and petiole length, shoot width, multiplication rate (number of new shoot per explants), and development of roots. The size of *C. minima* in liquid was bigger than solid media. A comparison of cytokinins activity showed that the best shoots proliferation was obtained from cultures treated with 6-benzylaminopurine (BAP). There was a greater development of new roots on medium supplemented with no hormone but suppressed new shoots formation.

ABSTRAK

Cryptocoryne minima adalah tumbuhan akuatik dari keluarga Aracea. In vitro *C. minima* telah berjaya dibiakkan dalam media B5. Objektif kajian ini adalah untuk mengenalpasti medium paling sesuai untuk kultur dan kesan sitokinin pada pertumbuhan *C. minima*. Eksplans dibahagikan dan di subkultur dalam rawatan media yang mengandungi Kinetin, 6-benzylaminopurine (BAP), Zeatin dan 6-(γ,γ -dimethylallylamino) purine (2iP) pada kepekatan yang berbeza. Pembentukan dan perubahan di perhati dan di rekodkan pada setiap minggu. Semua eksplan yang menerima pelbagai jenis dan kepekatan hormon menunjukkan perbezaan dalam pemanjangan daun dan petiol, lebar daun, kadar pembiakan (pertumbuhan pucuk baru per eksplan), dan pembentukan akar. Saiz *C. minima* dalam media cecair adalah lebih besar dari media pejal. Perbezaan aktiviti sitokinin menunjukkan pembiakan anak baru yang paling berkesan ialah kultur dibekalkan dengan hormon BAP. Terdapat perkembangan akar baru yang berkesan pada media yang tidak dibekalkan dengan hormon, tetapi tidak berkesan dalam penghasilan anak baru.