

MANIPULATION OF SEAWATER FOR GROWTH AND
PROLIFERATION OF *CRYPTOCORYNE*
CILIATA

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MANIPULATION OF SEA WATER FOR GROWTH AND PROLIFERATION
OF *CRYPTOCORYNE CILIATA*

By

Azmi Ismun

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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **MANIPULATION OF SEA WATER FOR GROWTH AND PROLIFERATION OF *Cryptocoryne ciliata*** oleh **AZMI BIN ISMUN** no. matrik: **UK7732** 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.

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LIST OF ABBREVIATIONS

%	percentage
°C	Analysis of Variance
ANOVA	Degree Celcius
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	Calcium chloride dehydrate
Fe-EDTA	Ferum EDTA
g	gram
g/L	gram per liter
HCl	Hydrochloric acid
KNO_3	Potassium nitrate
KH_2PO_4	Potassium dihydrogen Phosphate
kPa	kilo Pascal
ml	mililiter
mg	milligram
mg/L	milligram per liter
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	Magnesium sulfate heptohydrate
mMol	Milimol
NaOH	Natrium Hydroxide
NaNO_3	Natrium nitrate
NH_4NO_3	Ammonium nitrate
$\text{NH}_4(\text{SO}_4)_2$	Ammonium sulfate

NS	Not survive
no.	number
ppt	part per trillion

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ABSTRACT

The study has been done to develop the suitable sea water base medium for proliferating *Cryptocoryne ciliata* which currently cultured on MS medium. The explants have been tested in diluted sea water at 5, 10, 15, 20, 25 and 30ppt. From the experiment, the explants have successfully survived in 5, 10 and 15 ppt of sea water and the highest growth rates of explants was administered in 5ppt sea water medium in solid form. While the explants were not survived in 20, 25 and 30ppt of sea water base medium after two weeks of the treatment. Besides that, the study also determined the additional of Fe-EDTA as chelating agent has improved the growth rates of the explants and nitrogen sources that suitable for proliferation of *C. ciliata* was ammonium nitrate instead of ammonium sulfate and aatrium nitrate. In the end of the study, the best explants that can proliferate with the highest growth rates was in 5ppt sea water solid media with additional of Fe-EDTA and ammonium nitrate.

MANIPULASI AIR LAUT UNTUK PERTUMBUHAN DAN PEMBIAKAN

Cryptocoryne ciliata

ABSTRAK

Kajian dijalankan bagi menghasilkan media berasaskan air laut bagi pembiakan *Cryptocoryne ciliata* yang ketika ini dikultur menggunakan media MS. Eksplan telah diuji di dalam air laut pada kepekatan 5, 10, 15, 20, 25 and 30ppt. Didapati eksplan tersebut dapat hidup di dalam air laut pada kepekatan 5, 10 dan 15 ppt dan kadar pertumbuhan eksplan yang paling tinggi ialah di dalam media pepejal 5ppt air laut. Manakala eksplan tidak dapat hidup dalam media air laut pada kepekatan 20, 25 dan 30ppt selepas dua minggu rawatan dijalankan. Selain itu, kajian ini telah membuktikan penambahan Fe-EDTA telah meningkatkan kadar pertumbuhan eksplan dan sumber nitrogen yang paling sesuai untuk pembiakan *C. ciliata* adalah ammonium nitrat berbanding ammonium sulfat dan aatrium nitrat. Hasil yang diperolehi di akhir kajian adalah media pepejal 5ppt air laut dengan penambahan Fe-EDTA dan ammonium nitrat.