

EFFECTS OF LIGHT INTENSITY AND WATER LEVEL
ON THE GROWTH OF *Chytocoryne affinis*

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1975

EFFECTS OF LIGHT INTENSITY AND WATER LEVEL ON THE GROWTH OF
Cryptocoryne affinis.

By

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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
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
2005

This project should be cited as:

Logaraja, A. 2005. Effects of light intensity and water level on the growth of *Cryptocoryne affinis*. Undergraduate thesis, Bachelor of Science in Biological Sciences, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia, Terengganu. 72p.

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1100036810



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FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA**

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PROJEK PENYELIDIKAN I DAN II**

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ACKNOWLEDGEMENTS

First, I would like to express my sincere appreciation and gratitude to my supervisor, En. Amirrudin Ahmad, for his guidance and encouragement throughout this final year project. His generous helps, comments and advices help me a lot throughout this final year project. My heartfelt thanks go especially to En. Amirrudin Ahmad for his inexhaustible patience in tolerating me in my entire disposition.

My special appreciation also goes to the laboratory assistant of biology umum laboratory, Mr. Muhamad Razali Salam who helped a lot in the laboratory during my experiments.

Besides that, I would also like to thank my beloved friends, Karthigeyan, Vengades, Anita Tadong, Jagan, Robert and Hana who have helped me in many ways and encouraged me throughout my project.

Finally, I would like to express my love and appreciation to my family members for their moral support and encouragement to make this thesis a success.

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LIST OF SYMBOLS

O ₂	oxygen
CO ₂	carbon dioxide
PAR	photosynthetically active radiation
nm	nanometer
°C	degree Celsius
%	percentage
<	less than
cm	centimeter

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ABSTRACT

The effects of the light intensity and water level changes on the growth of the leaves of *Cryptocoryne affinis* were determined in this study. For this study, the species *C. affinis* was taken from the river (fresh water) in Gua Musang, Kelantan. This studies was conducted in aquariums. The selected leaves of the plants were measured and the plants were planted in the aquariums. The first condition that was studied was the effects of light intensity. Three level of light intensity were studied. They are 100%, 50-75% and < 25% of light intensity. The next condition that was studied was the effects of the water level changes. Three levels of water levels were studied. First, the plants submerged. Next, the plants emerged and finally the water level slightly above from the root of the plants. Each condition was studied for 8 weeks. The growth of the leaves measured by measuring the petiole length, leaf length and leaf width. This measurements was done every once in a week and recorded. The results from this studies show that, the best condition to grow *C. affinis* in aquariums is in condition of < 25% of light intensity and the plant submerged. Plants in high level of light affinity gives poor results of the growth rate. The emerged plants and plants in condition of water level slightly above from the root also gives poor results of the growth rate.

**KESAN KEAMATAN CAHAYA DAN PERUBAHAN PARAS AIR TERHADAP
TUMBESARAN *Cryptocoryne affinis*.**

ABSTRAK

Satu kajian telah dijalankan untuk menentukan kesan keamatan cahaya dan perubahan paras air terhadap pertumbuhan daun pokok *Cryptocoryne affinis*. Untuk kajian ini, pokok *C. affinis* telah diambil daripada sungai di Gua Musang, Kelantan. Daun-daun yang dipilih diukur dan ditanam di dalam akuarium. Tiga jenis keamatan cahaya dikaji iaitu 100%, 50-75% dan < 25% keamatan cahaya dan tiga jenis aras air dikaji iaitu tumbuhan tenggelam sepenuhnya di dalam air, tumbuhan separa tenggelam dan paras air berada di atas paras akar pokok. Setiap faktor dikaji selama 8 minggu. Daripada kajian, di dapati pokok-pokok yang terdapat di dalam keadaan keamatan cahaya < 25% dan tumbuhan tenggelam sepenuhnya di dalam air menunjukkan tumbesaran yang baik. Pokok-pokok yang terdapat di dalam keamatan cahaya yang tinggi menunjukkan kadar pertumbuhan yang kurang baik. Pokok-pokok yang terdapat di dalam keadaan tumbuhan separa tenggelam dan paras air di atas akar pokok juga menunjukkan kadar tumbesaran yang kurang baik.