

INDUCTION AND ESTABLISHMENT OF *Neurospora*
crassa GILLIS

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INDUCTION AND ESTABLISHMENT OF *Nelumbo nucifera* CALLUS

By

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Research Report submitted in partial fulfillment of
the requirements for the degree of
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**JABATAN SAINS BIOLOGI
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: Induction and Establishment of *Nelumbo nucifera* Callus oleh Mohd Nasir Bin Mat Nor No. Matrik UK6680 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
2,4-D	2,4-dichlorophenoxyacetic acid
IBA	3-indolebutyric acid
NAA	1-naphthalene acetic acid
Dicamba	3,6-dichloroanistic acid
Picloram	4-amino-3,4,5-trichloropicolinic acid
IAA	3-indoleacetic acid
g/L	Gram per liter
mg/L	Milligram liter
HCl	Hydrochloric acid
NaOH	Sodium hydrochloride
kPa	Kilo Pascal
$^{\circ}$ C	Degrees of Celsius
mm	Millimeter
g	Gram

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ABSTRACT

The callus of lotus, *Nelumbo nucifera* were successfully obtained from buds and petioles cultured on MS medium and AS medium added with auxins, 1-naphthalene acetic acid (NAA), 2,4-dichlorophenoxyacetic acid (2,4-D), 3,6-dichloroanistic acid (dicamba) and 4-amino-3,4,5-trichloropicolinic acid (picloram) at different concentrations. Cultures on MS medium with concentration 1.0 mg/L dicamba was showed best establishment of callus than those cultured on AS and MS (another auxins hormone). The growth of callus (fresh weight) with auxins hormone that successful establishment were also investigated. The highest growth was observed in MS medium with picloram at concentration 1.0 mg/L.

PENGARUHAN DAN PENGHASILAN KALUS *Nelumbo nucifera*

ABSTRAK

Kultur kalus pokok teratai, *Nelumbo nucifera* telah berjaya dihasilkan daripada batang dan petiole dengan dikulturkan di atas media MS dan AS yang ditambah dengan auxins, 1-naphthalene acetic acid (NAA), 2,4-dichlorophenoxyacetic acid (2,4-D), 3,6-dichloroanistic acid (dicamba) and 4-amino-3,4,5-trichloropicolinic acid (picloram) pada kepekatan yang berbeza. Kultur untuk menghasilkan kalus pada media MS yang ditambah dengan kepekatan 1.0 mg/L dicamba memberikan penghasilan kalus yang lebih baik daripada kultur di dalam media AS dan media MS (dengan hormon auksin lain). Kajian kadar pertumbuhan kalus (berat basah) dengan hormon auksin yang berjaya menghasilkan kalus juga telah dijalankan. Pertumbuhan kalus paling tinggi dicatatkan oleh media MS dengan hormon picloram dengan kepekatan 1.0 mg/L.