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**PHYOPLANKTON DISTRIBUTION AND ABUNDANCE IN SUNGAI GETING,  
TUMPAT, KELANTAN**

**By**

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the requirement of the degree of  
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**PENGAKUAN DAN PENGESAHAN LAPORAN  
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: Phytoplankton distribution and abundance in Sungai Geting, Tumpat, Kelantan, oleh Tan Wee Jen, No. Matrik, UK 6390 telah diperiksa dan semua pembetulan disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Sains (Sains Samudera), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF ABBREVIATIONS / SYMBOLS

$\alpha$	-	Alpha
$\text{C}_6\text{H}_{12}\text{O}_6$	-	Carbonate ions
$\text{CO}_2$	-	Carbon dioxide
g	-	Gram
kg	-	Kilogram
<	-	Less than
L	-	Liter
m	-	Meter
$\mu\text{L}$	-	Microliter
$\mu$	-	Micrometer
mg	-	Milligram
mL	-	Millimeter
mm	-	Millimeter
>	-	More than
No./L	-	Number per liter
No./mL	-	Number per milliliter
ppt	-	Part per thousand
$\text{‰}$	-	Part per thousand
%	-	Percent
$\text{H}_2\text{O}$	-	Water molecule

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## ABSTRACT

Distribution and abundance of phytoplankton in Sungai Geting Lagoon was examined before monsoon season (July) and during monsoon season (December) in year 2004. Water samples (42L) were collected at each 13 sampling sites before monsoon season and 12 sampling sites during monsoon season. Collected water was filtered through plankton net mesh size 20  $\mu\text{m}$  and preserved with Lugol's solution. The preserved water samples were concentrated into 10 mL sub samples and kept in glass bottles in the laboratory. Identification of phytoplankton and cell counting using Lacky's Drop Method was done using compound light microscope. Calculation was done for number of cells per liter, diversity index and evenness index. Before monsoon season, salinity values were ranged from 18.4 ppt to 32.1 ppt at the sampling sites. During monsoon season, salinity values were dropped to the ranged from 0.0 ppt to 0.8 ppt at the sampling sites. From the result, 27 genera of phytoplankton were found at sampling sites before monsoon season, with the average of 2441 cells per liter, average diversity index at 0.7518 and average evenness index at 2.6486. During monsoon season, there were 32 genera of phytoplankton found at sampling sites, with the average of 2109 cells per liter, average diversity index at 0.6506 and average evenness index 2.3757. From the statistical analysis, there was no correlation between salinity and the index diversity of phytoplankton before monsoon season and during monsoon season at the sampling sites.



# TABURAN DAN KELIMPAHAN FITOPLANKTON DI SUNGAI GETING, TUMPAT, KELANTAN

## ABSTRAK

Taburan dan kelimpahan fitoplankton di lagun Sungai Geting telah dikaji sebelum musim tengkujuh (Julai) dan semasa musim tengkujuh (Disember) pada tahun 2004. Sebanyak 42 L air telah dikumpul bagi setiap 13 stesyen sebelum musim tengkujuh dan 12 stesyen bagi sesi semasa musim tengkujuh. Air yang telah dikumpul ditapis dengan menggunakan jaring plankton 20  $\mu\text{m}$  dan diawet dengan menggunakan sebatian Lugol. Sampel air yang diawet kemudian dipekatkan sehingga 10 mL dan disimpan dalam botol kacal di dalam makmal. Pengenalpastian dan pengiraan sel fitoplankton dengan kaedah "Lucky Drop Method" telah dijalankan dengan menggunakan mikroskop kompond. Pengiraan telah dibuat bagi bilangan sel per liter, index diversiti dan index kesamarataan. Sebelum musim tengkujuh, nilai kemasinan adalah dalam lingkungan 18.4 ppt hingga 32.1 ppt di tapak kajian. Semasa musim tengkujuh, nilai kemasinan jatuh ke dalam lingkungan 0.0 ppt hingga 0.8 ppt di tapak kajian. Daripada keputusan yang diperolehi, 27 genera fitoplankton telah dijumpai di tapak kajian sebelum musim tengkujuh, dengan mencatatkan purata 2441 sel per liter, purata index diversiti 0.7518 dan purata index kesamarataan 2.6486. Semasa musim tengkujuh, sebanyak 32 genera fitoplankton telah dijumpai di tapak kajian, dengan mencatatkan purata 2109 sel per liter, purata index diversiti 0.6506 dan purata index kesamarataan 2.3757. Daripada keputusan analisis statistik, didapati tidak ada hubungkait di antara kemasinan dan index diversiti fitoplankton sebelum dan selepas musim tengkujuh di tapak kajian.