Gonyaulacales (dinophyta) cycts in the surface and subsurface sediments of Sungai Genting in Tumpat, Kelantan / Rathi Sai d/ Muniandy.

Lihat sebelah

GONYAULACALES (DINOPHYTA) CYSTS IN THE SURFACE AND SUBSURFACE SEDIMENTS OF SUNGAI GETING IN TUMPAT, KELANTAN

By

RATHI SAI D/O MUNIANDY

Research Report submits in Partial Fulfillment of

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABBREVIATION	
HAB	Harmful Algal Bloom
PSP	Paralytic Shellfish Poisoning
TFO	Tokyo University of Fisheries Oceanography Lab
rpm	rounds per minute

LIST OF APPENDICES

ABSTRACT

Paralytic shellfish poisoning (PSP) is an incident where toxin producing shellfish is eaten by warm blooded animals. In September 2001, PSP for the first time occurred in Sungai Geting, Kelantan caused by *Alexandrium minutum* Halim. This dinoflagellate is capable of producing resting cysts that could germinate and form blooms. Therefore, determining the species composition, abundance and distribution of resting cysts under Order Gonyaulacales in the surface and subsurface sediments of Sungai Geting would provide information on the presence of Gonyaulacales cysts there since the PSP incident. This information would indicate potential risks of harmful blooms in Sungai Geting. However, only *Spiniferites* sp. cyst was found in Sungai Geting. Cyst was more abundant in the innermost part of Sungai Geting than at the river mouth. Cyst abundance was low ranging from 0 to 6 cysts.g^{-1} dry weight sediment where 6 cysts.g^{-1} dry weight sediment was found in station 1 at subsurface sediment and 1 cyst.g^{-1} dry weight sediment found in surface sediment of station 3. *Spiniferites* sp. is a toxin-producing species; there is the potential risk of cysts of *Spiniferites* sp. to form massive blooms resulting in toxin contamination of shellfish and fish mass mortality in Tumpat, Kelantan. Therefore, monitoring should be done to examine the water quality and toxicity to prevent PSP occurrence in Sungai Geting in the future. More specific methods for cyst examination and identification need to be used to identify other dinoflagellate cysts in Tumpat, Kelantan.

ABSTRAK

Keracunan paralitik kerangan (PSP) adalah satu peristiwa di mana kerangan yang menghasilkan toksin dimakan oleh haiwan berdarah panas. Pada September 2001, PSP berlaku pada pertama kalinya di Sungai Geting, Kelantan disebabkan oleh *Alexandrium minutum* Halim. Maka, dengan menentukan komposis species sista, kelimpahan dan pengagihan sista dorman di bawah Order Gonyaulacales pada sedimen di permukaan dan sub-permukaan di Sungai Geting akan memberikan maklumat mengenai kehadiran sista Gonyaulacales semenjak peristiwa PSP. Maklumat ini akan memberi petanda risiko kejadian perkembangan alga merbahaya (HAB) di Sungai Geting. Hanya sista *Spiniferites* sp. dijumpai di Sungai Geting dalam bilangan yang rendah. Kelimpahan sista adalah tinggi di kawasan paling dalam di Sungai Geting daripada mulut sungai tersebut. Kelimpahan sista merangkumi 0 to 6 sista.g^{-1} berat kering sedimen di mana 6 sista.g^{-1} berat kering sedimen dijumpai di stesen 1 pada bahagian sub-permukaan dan 1 sista.g^{-1} berat kering sediment di stesen 3 pada bahagian permukaan. *Spiniferites* sp. berupaya menghasilkan toksik apabila ianya terbentuk. Terdapat potensi bagi sista *Spiniferites* sp. untuk membentuk peristiwa berbahaya seperti pencemaran toksik dalam kerangan dan perkembangan alga besar- besaran dengan kematian ikan secara apabila sista terbentuk di Tumpat, Kelantan. Maka, pengawasan perlu dijalankan bagi mengawasi kualiti air dan tahap toksik air untuk mengelakkan peristiwa PSP pada masa akan datang. Selain itu, kaedah spesifik bagi pengecaman sista dinoflagelat lain di Tumpat, Kelantan.