

Paralytic shellfish profiles produced by the toxic dinoflagellate pyrodinium bahamense from Sepanggar Bay, Malaysia

ABSTRACT

Pyrodinium bahamense var compressum is a harmful dinoflagellate that produces saxitoxin, which causes paralytic shellfish poisoning (PSP) that is deadly to humans. A non-axenic culture of P. bahamense was established using f/2 media from samples collected from Sepanggar Bay, Kota Kinabalu, Sabah. Toxin analyses of cultures harvested on days 60, 120, 180, and 360 were performed using high-performance liquid chromatography with a fluorescence detector and compared with samples collected at the same location during the bloom in 2021. The highest cell toxin content was found in the bloom sample (86.2 fmole/cell), and no toxin was detected in the culture 60 days old. In addition, cell toxin content for the P. bahamense culture was low (9.4-16.5 fmole/cell). Based on the toxin profile, P. bahamense comprises 84- 98% of gonyautoxin 4. In summary, the current findings add to the existing knowledge of the toxin profiling of P. bahamense, a toxic, harmful algal bloom species, thus, leading to better toxin management.