Asian Fisheries Science **27** (2014):*16-29*

ISSN 0116-6514
E-ISSN: 2073-3720
https://doi.org/10.33997/j.afs.2014.27.1.002

Asian Fisheries Science
The Journal of the Asian Fisheries Society

Diatom *Pseudo-nitzschia* cf. *caciantha* (Bacillariophyceae), the Most Likely Source of Domoic Acid Contamination in the Thorny Oyster *Spondylus versicolor* Schreibers 1793 in Nha Phu Bay, Khanh Hoa Province, Vietnam

DAO VIET HA[1]*, PO TEEN LIM[2], PHAM XUAN KY[1], YOSHINOBU TAKATA[3], SING TUNG TENG[4], TAKUO OMURA[3], YASUWO FUKUYO[3] and MASAAKI KODAMA[3]

[1] Institute of Oceanography, Vietnam Academy of Science and Technology, 01 Cau Da Street, Nha Trang City, Khanh Hoa Province, Vietnam
[2] Marine Research Station, Institute of Ocean and Earth Science, University Malaya, 16310 Bachok, Kelantan, Malaysia
[3] The University of Tokyo, Yayoi 1-1-1, Bunkyo-Ku, Tokyo, 113-8657, Japan
[4] Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Abstract

Domoic acid (DA) contamination in the thorny oyster *Spondylus versicolor* Schreibers 1793 was discovered in 2005, in Nha Phu Bay, Khanh Hoa Province, Vietnam. Concurrently, DA was detected in the net-plankton samples. The causative organism responsible for the DA was not detected then. In 2006, DA in *S. versicolor* (maximum of 43.6 $\mu g \cdot g^{-1}$) and in net-plankton samples (maximum of 0.78 $ng \cdot L^{-1}$) recurred, suggesting the existence of DA producers in the bay. When DA in *S. versicolor* again increased in 2007, a net-plankton sample was collected, and cultures of *Pseudo-nitzschia* species were established for DA analysis and species identification. Eight out of eleven cultured isolates of *Pseudo-nitzschia* spp. showed DA production (111–244 $ng \cdot mL^{-1}$), as confirmed by liquid chromatography-tandem mass spectroscopy. The toxic isolates examined by transmission electron microscopy shared identical morphological characteristics: a single row of poroids, hymens divided into 2–6 sectors, and mantles 1–2 poroids high. They resembled *Pseudo-nitzschia caciantha* Lundholm, Moestrup & Hasle, 2003 thus we designated it as *P.* cf. *caciantha*. Our results indicated that *P.* cf. *caciantha* most likely contributed to the DA contamination in *S. versicolor* in Nha Phu Bay. This is the first report of DA production by *P.* cf. *caciantha* anywhere in the world.

*Corresponding author. E-mail address: daovietha69@gmail.com; dvhaio@yahoo.com