



Abundance and Distribution of the Potentially Toxic Thecate Dinoflagellate *Alexandrium tamiyavanichii* (Dinophyceae) in the Central Mexican Pacific, Using the Quantitative PCR Method

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Most of the toxic algal blooms in coasts of the Mexican Pacific are attributed to planktonic dinoflagellates. Recently, some new records of dinoflagellates producers of emergent toxins have been documented. The genus *Alexandrium* encompasses several toxic species which produce saxitoxin. In this work, the abundance and distribution of the potentially toxic species *Alexandrium tamiyavanichii* from coasts of the central Mexican Pacific were studied, following the method of quantitative real-time PCR. During the oceanographic cruise “MareaR IX” (19–30 April, 2017), carried out along coasts of the Mexican Pacific, hydrographic, and environmental variables were measured, and net and bottle samples were collected and preserved in modified saline ethanol buffer for analysis in the laboratory. In order to perform the qPCR method, the molecular target used was the ITS2 of the rDNA of *A. tamiyavanichii*. From 45 samples analyzed, 14 yielded positive results, showing the presence and abundance of the species in fixed stations of Cabo Corrientes, Manzanillo and Acapulco, with low densities (less than 40 cells/m³), which is an evidence of the sensitiveness of the method. On the other hand, chains of cells of the species were found in net samples, in stations where its presence was detected by qPCR, confirming results by the method. General distribution showed presence of the species in two zones where upwellings were detected, but not at coastal stations, except in Acapulco where a more stratified water column was found. Vertical distribution indicated that highest densities were found at subsurface layers, in association with the chlorophyll *a* maxima (between 11 and 30 m depth). The results show the importance of assessing the abundance and distribution of a species which may be systematically monitored, and that the method of the qPCR may be very useful.

Keywords: *Alexandrium tamiyavanichii*, central Mexican Pacific, dinoflagellates, molecular tools, quantitative real time PCR