

First Report on The Occurrence of Cochlodinium Blooms in Sabah, Malaysia

Abstract

Harmful algal blooms (HABs) resulting in red discoloration of coastal waters in Sepanggar Bay, off Kota Kinabalu, Sabah, East Malaysia, were first observed in January 2005. The species responsible for the bloom, which was identified as *Cochlodinium polykrikoides*, coincided with fish mortalities in cage-cultures. Determinations of cell density between January 2005 and June 2006 showed two peaks that occurred in March–June 2005 and June 2006. Cell abundance reached a maximum value of 6×10^6 cells L⁻¹ at the fish cage sampling station where the water quality was characterized by high NO₃-N and PO₄-P concentrations. These blooms persisted into August 2005, were not detected during the north–east monsoon season and occurred again in May 2006. Favorable temperature, salinity and nutrient concentrations, which were similar to those associated with other *C. polykrikoides* blooms in the Asia Pacific region, likely promoted the growth of this species. Identification of *C. polykrikoides* as the causative organism was based on light and scanning microscopy, and confirmed by partial 18S ribosomal DNA sequences of two strains isolated during the bloom event (GenBank accession numbers DQ915169 and DQ915170).