

Evaluation and comparison of *Karenia mikimotoi* detection in the Seto-Inland Sea by remote sensing

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Harmful Algae Blooms (HABs) is a worldwide problem in coastal marine systems. Seto-Inland Sea is a semi-enclosed coastal area in Japan that suffered from HABs. Dinoflagellate *Karenia mikimotoi* is one of the most common species that form HABs in the Seto-Inland Sea. It could increase fish mortality, thereby causing economic losses for coastal aquaculture. A detection method based on the spectral difference in short wavelength was developed by limited field observation in the western part of the Seto-Inland Sea (Siswanto *et al.*, 2013). But the spectra in the short wavelength are always influenced by colored dissolved organic matters and non-algal particles as well as the error of atmospheric correction. Thus, it is necessary to evaluate the method with more filed observation data. Meanwhile, several methods for the detection of *Karenia brevis*, a HABs species belongs to the same genus and has similar optical properties with *Karenia mikimotoi*, were developed in the West Florida Shelf. These methods could be divided into chlorophyll-a based, apparent optical property based, inherent optical property based approach, etc. This research aims to compare results of different detection methods in the Seto-Inland Sea and evaluate them with the recent filed observation data.

Keywords: Seto-Inland Sea, Harmful Algae Blooms, *Karenia mikimotoi*, Remote Sensing