

Notice on Plankton Seminar

#17012

13:30-15:30, 19 September. (Tue.) 2017 at room N204

First detection of the noxious red tide dinoflagellate *Karenia mikimotoi* and dynamics in
2015 and 2016 at Hakodate Bay, Hokkaido northern Japan

It is known that Northern distribution of the noxious red tide dinoflagellate *Karenia mikimotoi* causing mass mortalities in fish culture in western Japan has been limited to Tokyo Bay and Maizuru Bay in Japan. However we first detected the *K. mikimotoi* cells and bloom occurrence in 2015 in Hakodate Bay, Hokkaido, Japan. We investigated the dynamics of *K. mikimotoi* in Hakodate Bay from 2015 to 2016. Regular samplings were conducted 1–4 times in every month at the point at the wharf of Hakodate Research Center for Fisheries and Oceans (Stn. HKK). As a result of regular samplings, *K. mikimotoi* cells of 2 cells mL⁻¹ (0 m) and 1 cell mL⁻¹ (5 m) were first detected on 31 August 2015, and cell densities increased to form a red tide in November. The water temperatures were in the range of 10.2–15.6°C during this period. In 2016, the first detections of *K. mikimotoi* was 4 cells mL⁻¹ (0 m) and 12 cells mL⁻¹ (5 m) at Stn. HKK on 27 September, and the maximum density reached 34 cells mL⁻¹ (5 m) on 27 October, thus stayed small blooms. The cell densities of diatoms were low (<10³ cells mL⁻¹) in November 2015 and 2016, since the amount of global solar radiation declined (\approx 5–10 MJ m⁻²) during November in Hakodate area. For 2016, the water temperature rapidly declined from the late October to early November by the effects of a strong cold snap that hit Hokkaido in late October. This adverse environmental condition probably inhibited the growth of *K. mikimotoi* in 2016. Appearances of *K. mikimotoi* both in 2015 and 2016 suggested that *K. mikimotoi* cells were transferred as a natural dispersal by the Tsushima/Tsugaru warm currents or via ships' ballast water.

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