

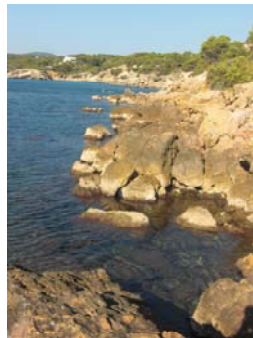
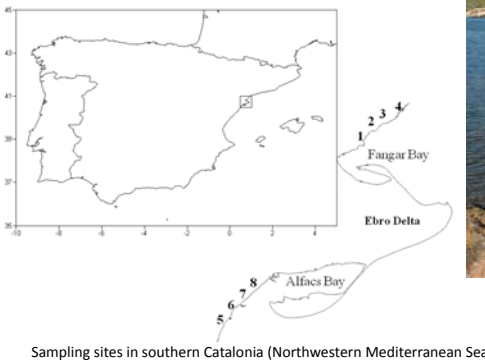
# *Ostreopsis* cf. *ovata* growth and toxicity in a warmer Mediterranean Sea.

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## Methodology

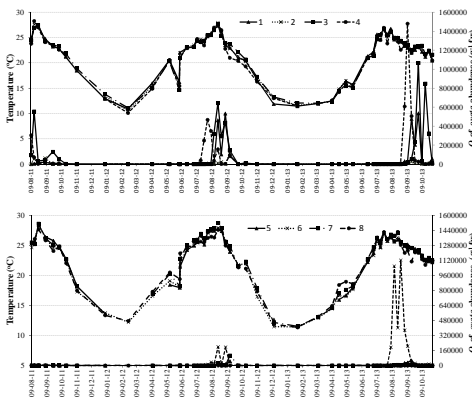


The abundance of *Ostreopsis* cf. *ovata* growing on macrophytes and its toxicity was monitored during 3 years at 8 sampling sites in the southern Catalan coast (Northwestern Mediterranean). Several strains were isolated, established in cultures, and the effect of temperature on growth and toxicity was tested. *Ostreopsis* cf. *ovata* was identified and quantified by optical microscopy and qPCR (Battocchi et al., 2010). Haemolytic assay (Riobó et al. 2008) was used to evaluate toxicity on samples from the field as well as in cultures.

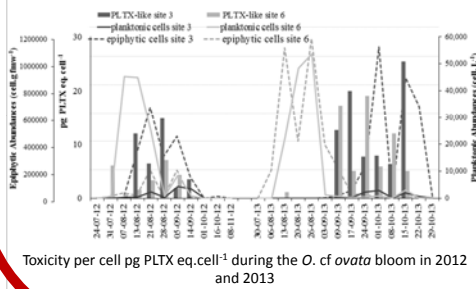
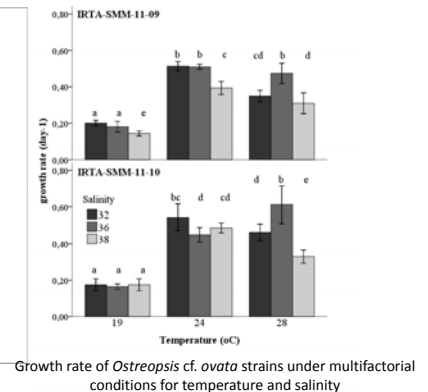
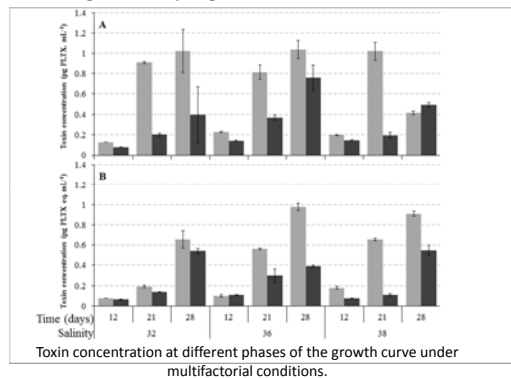


## Results and conclusions

Results of multifactorial experiments conducted in cultures show that within the range of temperatures tested (19, 24, and 28 °C) growth was inhibited at 19 °C, the highest growth rates were obtained at 24 °C, and toxicity was significantly higher at 28 °C.



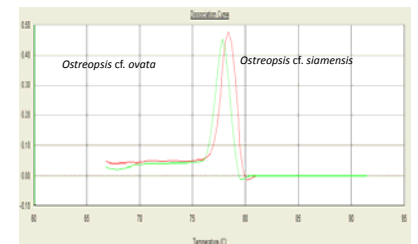
Seawater temperature and *Ostreopsis* cf. *ovata* abundance from August 2011 to October 2013 in the northern sites (1, 2, 3, 4) and the southern sites (5, 6, 7, 8).



Toxicity per cell pg PLTX eq. cell<sup>-1</sup> during the *O. cf. ovata* bloom in 2012 and 2013

Results on the field observations are similar to those found in cultures; average temperature during *O. cf. ovata* blooms was 24.48 °C. Field studies showed water temperature was the most important parameter defining the *O. cf. ovata* seasonal pattern and restricting the ecological niche, but within the range of temperatures where growth occurred, *O. cf. ovata* abundance did not show correlation with water temperature.

A rising of sea surface temperature is currently being observed in the Mediterranean Sea; therefore the window of time for the blooming period of *O. cf. ovata* may possibly be enlarged.



Dissociation curve for *Ostreopsis* cf. *ovata* and *Ostreopsis* cf. *siamensis*

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Riobó, P., Paz, B., Franco, J.M., Vazquez, J.A., Murado, M.A., 2008. Proposal for a simple and sensitive haemolytic assay for palytoxin Toxicological dynamics, kinetics, ouabain inhibition and thermal stability. Harmful Algae 7, 415-429.

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