

## Project information

### Keywords

Biosensort harmful algae

### Project title

Arctic harmful algae biosensor

### Year

2018

### Project leader

Lionel Camus

Geographical localization of the research project in decimal degrees (max 5 per project, ex. 70,662°N and 23,707°E)

Forsøks- og innovasjonsstasjon Kraknes (FISK)", Salarøyen 981, 9103 Kvaløya

### Participants

Lionel Camus / Akvaplan-niva (APN), Damien Tran (University of Bordeaux-CNRS); Jorge Santos (University of Tromsø), Hector Andrade (APN)

### Flagship

Fjord and Coast

### Funding Source

Fram

## Summary of Results

An experimental algae culture will be underway from the 18th of May. We want to gain knowledge regarding algae production systems and test whether the strain of the harmful algae purchased effectively produces the toxins at the desired concentrations. We have purchased algae strains, nutrients and disposables to carry out the experiment. Also we have rented the place and arranged a workshop to learn how to use a Counter Coulter. The valvometer is been built in France. French researchers will visit the lab setup on November 13th to plan the final experimental setup. We plan to carry out the experiment during late autumn, when water is cleaner

## Master and PhD-students involved in the project

None

## For the Management

Around the world, there has been a recent proliferation of harmful algae blooms and these are becoming of concern in the north. The Norwegian Food Safety Authority monitors algae toxins along the Norwegian coast, to guide the general public when is advisable to eat self-pickled shells, however, due to limited resources, currently monitoring is restricted to 2 areas for the whole north of Norway. In this project, we are testing whether a high frequency-noninvasive sensor can detect such blooms. By equipping Icelandic scallops with a valvometer that measures opening and closing of valves, we will be able to test whether this species can provide remotely an early-warning system, triggering a sampling campaign. We will compare gaping behavior between exposed and unexposed scallops to harmful algae, to see whether differences exist.

## Published Results/Planned Publications

Planned: Effects of the toxic dinoflagellate *Alexandrium minutum* upon gaping behaviour in the Icelandic scallop *Chlamys islandica*.

## Communicated Results

None yet. Our results will be disseminated in the form of a peer-review article but also in the form of presentations to The Norwegian Seafood Research Fund – FHF, and the Research Council programs RFFNORD and MARINFORSK. The later presentations are to gain support for funding of a full research project in which the scallop valvometer will be tested with different concentrations of harmful algae and deployed in the field.

## Interdisciplinary Cooperation

This project involves expertise in ecotoxicology, biology and mathematics

## Budget in accordance to results

Yes, however, we are depending of the second year of funding to produce the expected results

Could results from the project be subject for any commercial utilization

Yes

If Yes

If the biosensor is functional, the technology could be sold to monitoring agencies/aquaculture firms to monitor harmful algae blooms in areas of interest

Conclusions

We are pending on carying out the experiment to reach conclusions