



**INSTITUT LOUIS MALARDE**  
**Laboratory of Marine Biotoxins**  
BP30 Papeete Tahiti  
98713 French Polynesia

### STANDARD OPERATING PROCEDURE (SOP) - 3

## MACROALGAL SAMPLING METHOD

**Version : 2.0**

**Review date : 11.07.2022**

**Authors: Dr Mireille CHINAIN & Dr Clémence GATTI**

**Page(s) : 2**

**Validation date : 22.07.2022**

#### A/ List of equipments

- A boat fully equipped with regulatory safety equipment
- Snorkeling equipment and diving gear
- A Global Positioning System (GPS) device for accurate localization of the sampling sites
- A waterproof thermometer
- A diving slate and a pencil
- Thick plastic bags (of 30 x 50 cm)
- Rubber bands
- A permanent marker
- An empty tank to collect seawater (or empty plastic bottles)
- A cooler

#### B/ Procedure

The detailed procedure can be viewed on the video tutorial available online on the CIGUAWATCH platform : <https://ciguawatch.ilm.pf/ciguatera-environmental-monitoring-methodology-2/>

1. Label each plastic bag with a permanent marker (note the sample number and date of sampling)
2. Record the GPS coordinates of each sampling site, site name, sample number and date of sampling on the diving slate
3. Once in the water, fill the plastic bag with seawater
4. Collect about 100 g of macroalgae per sampling site at water depths between 1.5 and 3 m
5. Randomly pick small macroalgal tufts across the sampling site
6. Each plastic bag should contain only one species of macroalgae
7. Underwater, put the macroalgae within a plastic bag and seal it tightly with rubber bands
8. Before leaving the site, collect seawater in an empty tank (count approximately 1L per macroalgal sample)



9. Record the seawater temperature in the study site using a data logger or a waterproof field thermometer

### **C/ Hints**

- Best sampling sites are those located in areas protected from current and wave actions
- Avoid collecting macrophytes in areas exposed to low tide
- Macroalgal sampling should be carried out underwater at all time
- Do not shake the macroalgae to avoid resuspension of microalgal cells in the water column
- When sampling, prefer calcareous or turf-like agglomerated filamentous macroalgae instead of laminar ones
- In the case of *Turbinaria* samples, preferably collect specimens colonized by micro-algal turf
- Select the same species across sampling locations to allow comparison between study sites
- If necessary, double the plastic bag to avoid leaking
- Keep the samples near the ambient water temperature and avoid exposure to direct sunlight by placing them in a cooler until sample processing

### **D/ Personal Protection Equipment**

- Sampling boat should be equipped with all necessary safety equipment as per local regulations
- Wearing a pair of diving gloves is recommended during field sampling to avoid stings and/or bites by marine fauna