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EFFECTS OF AN ALTERNATIVE ANTIFOULING TECHNIQUE ON SETTLEMENT AND MORTALITY OF THE INVASIVE SUN-CORAL *Tubastraea coccinea* LESSON 1829 LARVAE

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The sun-coral species (*Tubastraea* spp.) are the most emblematic cases of marine bioinvasions in Brazil. The corals are very well adapted to artificial structures, but in Brazil, the populations also invaded coastal areas and became an environmental threat. The companies and industries involved as vectors in the sun-coral invasion process have been punished along time, raising the need of an antifouling technology focused on sun-coral fouling, since the focus in general are barnacles and bryozoans. One of the approaches of antifouling technology research is to avoid the establishment of the organisms in the larval phase. Since this is a recent problem, there are no studies about control of sun-coral since the larval phase. The aim of the present experiment was to test the effect of the electric signal generator - an alternative, efficient, non-toxic and environmentally friendly antifouling technique on settlement and mortality of *Tubastraea coccinea* larvae. For that, PVC containers with 250ml of sterilized sea water and ten larvae were used in two treatments with four replicates: 1. the treatment with installation of wires connected to the equipment; and 2) the control (with installation of wires, but not connected to the equipment). Current values in the multimeter were recorded for 10 seconds to confirm the equipment operation conditions. Measurements of temperature, pH and salinity were performed at the beginning, with 24h, 48h and 96h. The results were obtained by counting larvae using a stereoscopic microscope: larvae with mobility, settled larvae (fixed to the substrate and with signs of metamorphosis) and the dead ones, every 24 hours or until total mortality or settlement. The temperature remained around 25°C, the values of pH become stable between 8.0 and 8.2 and salinity showed an increase due to evaporation, but it was the same between control and treatment. Within less than 24 hours, we observed that the external aspect of the larvae was already different between control and treatment. Observations under the microscope at 48 hours, showed that the larvae under the treatment showed tissue damage and some of them collapsed compared to the control. After 96 hours, the collapsed larvae were not found, since it is common the dissolution of ruptured larvae, a result observed in previous experiments. The results of the experiment showed that on average there were 62.5% of alive larvae in the control, while only 10% of the larvae of the treatment were alive (= with mobility). Our findings indicated that in controlled environment, the low electric current intensity caused mortality of sun-coral larvae within less than 96 hours, i. e., before the beginning of the process of metamorphosis and attachment. These results demonstrated the potential of the technique as an alternative antifouling that was patented under the number PCT/BR2018/050431.