ShealS - Sea Heals Soil

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Marine macroalgae, due to exposure to adverse abiotic conditions, have developed defense mechanisms such as the ability to produce biologically active substances that, when assimilated by certain species of phanerophytic plants, trigger a defense response against infections. The ShealS project aims to evaluate the fungicidal effect of macroalgae extracts from the Portuguese coast in order to control the fungus Phytophthora cinnamomi, responsible in for the decline of forest species with a high impact on the Portuguese economy. Six species of marine macroalgae were selected, the criteria being the presence of biopolymers with potential inhibitory effects on fungi and their role in ecosystems, (some of the species used were invasive). The biological material was dehydrated and the biopolymers were extracted using three different solvents (ethanol, petroleum ether and ethyl ether), to guarantee maximum extraction of macroalgae compounds. The extracts were subsequently tested in vitro, using, incorporation as liquid extracts. After inoculation, daily measurements were made for nine days, measuring the diameter of the fungal mycelium through its radial, since the mycelium does not grow uniformly in the culture. Of the plates carried out in the in vitro tests, Corallina sp. in ethyl ether solvent was the one that presented the most inhibitory power on P. cinnamomi (63%), when compared to control plates, a promising result for the furtherance of the study and development of a new fungicide of biological origin, specific activit y and low environmental impact.

Awards Won:
Second Award of $2,000