

# Annual Biotechnology Congress

July 23-24, 2018 | Vancouver, Canada

## Development of an integrated method for utilizing seaweed and seaweed waste to grow fungal marine biomass for bioproducts

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In the last two decades the interest in biotechnology has focused on obtaining products of commercial importance from residual biomass. At present, there are no studies that have been carried out to evaluate the feasibility of taking waste from the seaweed to feed marine fungi and extract of these hydrophobic proteins hydrophobins (HPs) and the Single Cell Protein (SCP). Marine fungi are a diverse group of opportunistic and obligate marine organisms. In these fungi, new metabolites of biotechnological interest and hydrolytic enzymes have been detected. In this study, the growth of 10 strains of Ascomycetes marine fungi and filamentous (NBCR collection), was evaluated. So, the concentration of intracellular protein, of the preselected fungi, fed with wastes from the algae industry (waste A), and with the brown alga *Macrocystis pyrifera*, was evaluated. The highest protein concentrations were obtained with *Asteromyces cruciatus* and *Dendryphiella salina*. In the case of *A. cruciatus*, it was possible to increase the protein content 1.7 folds using *M. pyrifera* and the waste A. In the case of *D. salina*, the protein content in *M. pyrifera* and in residue A was increased 3.1 and 1.9-fold, respectively. The experimental response surface design, Box-Behnken, predicted that optimum growth conditions for the case of *A. cruciatus* fed with *M. pyrifera*, should be: 30°C, pH 5.0 and 0.5% salinity. The presence of HPs, in *A. cruciatus* (1.230-1.560 mg/L) and *D. salina* (1.560 -2.110 mg/L), using *M. pyrifera*, as a carbon source, were preliminarily evaluated.

### Biography

Catalina Landeta Salgado is a Biologist from the Catholic University of Ecuador, has a magister in Environmental Management and Auditing from the Polytechnic University of Catalonia, Spain, a magister in Energy Engineering, mentioning biofuels from the Catholic University of Chile. She is currently a PhD candidate in Chemical Engineering and Biotechnology at the University of Chile. She has worked for more than four years in nationally recognized research projects in Ecuador. The achievements in their results could help the development of the only bioethanol pilot plant, from agroindustrial waste, in Ecuador.

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