International Society for Applied Phycology
ISAP

Marine Institute Foras na Mara

Údarás na Gaeltachta

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Ireland

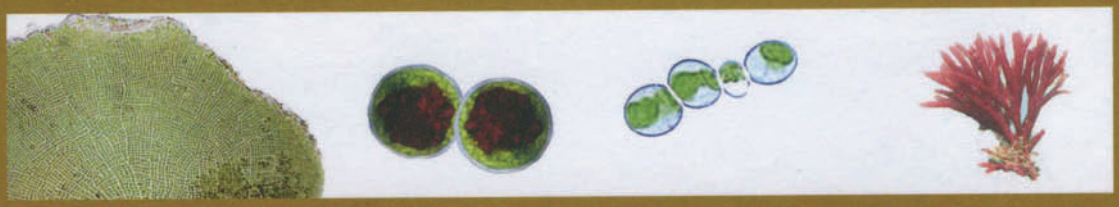
Irish Seaweed Centre

11th International Conference on Applied Phycology,

Galway, Ireland, June 21-27, 2008

Applied phycology in the 21st century;
novel opportunities in a changing world

Program & Abstracts



Organised by
International Society for Applied Phycology
National University of Ireland, Galway
Irish Seaweed Centre, MRI

SMRI
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National University of Ireland, Galway
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11th International Conference of Applied Phycology, Galway Ireland June 21-27, 2008

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The active substance is a scytophycin B derivative as shown by MS^n and NMR. This compound disrupts microfilament organization through inhibition of actin polymerization, and it also causes *in-vitro* depolymerization, or fragmentation of F-actin. Fungicidal effect is systemic since plants take this substance by root system. Scytophycin homologue inhibited the growth of 11 out of 14 fungal strains.

170. PILOT STUDY FOR THE PRODUCTION OF *ARTHROSPIRA* (*SPIRULINA*) *MAXIMA* USING VERTICAL PHOTOBIOREACTORS

Xavier, E.D.[1]; Neto, A.I.[1]; Reis, A.; Gouveia, L. and Debeaumont, J.L.
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Spirulina has recently aroused high interest due to its commercial potential. A closed vertical tubular photobioreactor specially designed to operate under conditions of scarce flat land availability and irregular solar irradiance conditions, was used to study the potential of *Spirulina* production. The INETI's Lumiar Campus in the city of Lisbon, located on the western coast of Portugal (38° 42'N, 9° 11'W), was selected for the pilot study. *Spirulina* was grown semi continuously from March to November 2007. Biomass concentration (gl-1) was calculated measuring optical density at 540nm and filtrating 10ml of culture through glass microfiber filters, to produce a standard curve relating dry weight of biomass to optical density. The calculated biomass concentration was measured daily and results were used to build growth curves. Solar irradiance, air temperature and medium temperature were measured on a daily basis to evaluate how they affect growth. The productivity observed in this trial was substantially higher when compared to other studies made in outdoor open reactors, thus photobioreactores are an interesting solution for industrial production of *Spirulina*.

171. FOCUSED ION BEAM / SCANNING ELECTRON MICROSCOPY AS AN ADVANCED TOOL FOR STUDYING ALGAL MORPHOLOGY

Zrimec, A.[1], Tatti, F.[2], Drobne, D.[3] and Berden-Zrimec, M.[1]
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A new technique for studying algal morphology was tested. Focused ion beam / scanning electron microscopy (FIB/SEM) is relatively new in life sciences. It was originally used for characterization and modification of materials in the semiconductor and microcircuit fields.

FIB/SEM is offering a possibility to manipulate biological samples under SEM. The focused ion beam is used for working on the sample, and the electron beam for imaging. Cutting, milling and drilling of samples in different directions and at different magnifications is enabled from millimeter to nanometer scale. The samples can be handled in a highly controlled way and exposed subsurface structures viewed with SEM resolution.

The aim of our work was to test the performance of FIB/SEM in structural research on a well known sample – diatom frustules. Frustule morphology plays an important role in taxonomy, therefore a lot of data already exist on morphological characteristics of different species. However, descriptions of morphological characteristics are usually limited to surface ornamentation and structures of valves. Subsurface structures are usually observed only on a randomly fractured frustule.

FIB/SEM enabled cutting and drilling into the valves and exposing subsurface structures layer by layer. Close up of girdle band junctions or consecutive cuts into fultoportulae were imaged from the top or from the sides. Subsurface structures were exposed by precise cutting of structures of interest.

172. PYROLYSIS AND LIQUEFACTION OF BROWN SEAWEEDS

Ross A.B., Anastasakis, K. and Jones, J.M.