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Title of the ongoing Master Dissertation

'Maximizing beta-carotene production from Greek strains of Dunaliella sp. using photobioreactors'

(supervised by A. Economou-Amilli – examination committee: D. Danielidis, M. Krokida, D. Chatzinikolaou)

DESCRIPTION

Microalgae of the genus *Dunaliella* and specifically two species, i.e. *D. salina* and *D. bardawil,* are well known for their ability to accumulate significant amounts of beta-carotene under stressful conditions. Large-scale cultures of these species have been used for harvesting great amounts of beta-carotene since 1966.

The objective of this study is to maximize the beta-carotene production of Greek strains of *Dunaliella* sp. for further use by the carotene production industry. In order to achieve this goal different stress-inducing techniques such as nitrogen starvation and increased salinity, as well as different cultivation media and salinity concentrations, have been used in small scale cultures of eight selected strains which were obtained from the Strain Bank of the Department of Ecology and Systematics (Faculty of Biology, National & Kapodistrian University of Athens). The most promising strains will be then cultivated in a larger scale using photo-bioreactors, and applying differentiating factors such as dilution rate and biomass processing.