World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:8, No:12, 2014

The Combined Influences of Salinity, Light and Nitrogen Limitation on the Growth and Biochemical Composition of Nannochloropsis sp. and Tetraselmis sp., Isolated from Penang National Park Coastal Waters, Malaysia

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Abstract : In the present study, two microalgae species “Nannochloropsis sp. and Tetraselmis sp.” isolated from Penang National Park coastal waters, Malaysia; were cultivated under combined various laboratory conditions “salinity, light, nitrogen limitation and starvation”. Growth rate, dry weight, chlorophyll a content, total lipid and protein contents, were estimated at mid exponential growth phase. Both Nannochloropsis sp. and Tetraselmis sp. showed remarkable decrease in growth rate, chlorophyll a content and protein content companied with increase in lipid content under nitrogen limitation and starvation conditions. Maintaining Nannochloropsis sp. under salinity 15‰ caused only significant decrease in total protein content; while Tetraselmis sp. grown at the same salinity caused decrease in the growth rate, chlorophyll a, dry weight and total protein content only when nitrogen was available.

Keywords : biochemical composition, light, microalgae, nitrogen limitation, salinity
Conference Title : ICBEESE 2014 : International Conference on Biological, Ecological and Environmental Sciences, and Engineering
Conference Location : Penang, Malaysia
Conference Dates : December 04-05, 2014