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Screening of lutein content in several fresh-water microalgae

By: Sallehudin, NJ (Sallehudin, N. J.)^[1]; Raus, RA (Raus, R. A.)^[1]; Mustapa, M (Mustapa, M.)^[1]; Othman, R (Othman, R.)^[2]; Mel, M (Mel, M.)^[1]

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Abstract

Lutein is the most abundant xanthophylls in the photosynthetic organisms and its dietary intake is thought to protect against the development of age-related macular degeneration. Microalgae are predicted to be the major contributors of lutein in the future and to date, various species of microalgae has been analyzed for its lutein content. This study examined the lutein content of six chlorophycean microalgae species grown in the laboratory culture under the comparable environmental condition in which the population doubling time (t(d)) as well as the maximum growth rate (mu(max)) for each species was evaluated. Using batch culture operation grown under the heteroautotrophic condition, Scenedesmus dimorphus was observed to accumulate the highest lutein content (60.11 mg/g) with maximal biomass of 0.349 g/L culture. Based on the observations available, it appears that strains of unicellular microalgae of smaller size have appreciably higher intrinsic growth rates than algae of the larger size (Chlorella sp. B > Chlorella sp. TLL > Scenedesmus dimorphus > Scenedesmus obliquus TLL > Desmodesmus sp. TH > Ankistrodesmus sp. TH). (C) All Rights Reserved

Keywords

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Author Information

Reprint Address: Raus, RA (reprint author)

+ Int Islamic Univ Malaysia, Dept Biotechnol Engn, Kulliyyah Engn, Kuala Lumpur 50728, Malaysia.

Addresses:

- + [1] Int Islamic Univ Malaysia, Dept Biotechnol Engn, Kulliyyah Engn, Kuala Lumpur 50728, Malaysia
- + [2] Int Islamic Univ Malaysia, Dept Landscape Architecture, Kulliyyah Architecture & Environm Design, Kuala Lumpur 50728, Malaysia

E-mail Addresses: rahaar@iium.edu.my

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