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Effect of Fertilization on Expression of Bioactive Carotenoid and Chlorophyll Pigments in *Clinacanthus nutans* Lindau for Potential Use as Functional Natural Colourants

[Kesan Pembajaan terhadap Ekspresi Pigmen Karotenoid dan Klorofil Bioaktif pada *Clinacanthus nutans* Lindau untuk Potensi Kegunaan sebagai Pewarna Fungsian Semula Jadi]

Yusof, Zuhaili^a; [Mahmood, Noor Zalina^a](#) ; [Othman, Rashidi^c](#); [Yaacob, Jamilah Syafawati^{a, b}](#)[Save all to author list](#)^a Institute of Biological Sciences, Faculty of Science, Universiti Malaya, Kuala Lumpur, 50603, Malaysia^b Centre for Research in Biotechnology for Agriculture (CEBAR), Universiti Malaya, Kuala Lumpur, 50603, Malaysia^c Herbarium Unit, Department of Landscape Architecture, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia, Kuala Lumpur, 53100, Malaysia[Full text options](#) [Export](#) [Abstract](#)[Author keywords](#)[Reaxys Chemistry database information](#)[Indexed keywords](#)[SciVal Topics](#)[Funding details](#)**Abstract**

This research aimed to investigate the different effects of fertilization (through the use of vermicompost and chemical fertilizer) on carotenoid composition as well as the chlorophyll content in *Clinacanthus nutans* Lindau. A field study employing a Randomized Complete Block Design (RCBD) was

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Analysis of bioactive pigments in coloured callus of *Azadirachta indica* for possible use as functional natural colourants

Ashokhan, S. , Ramasamy, S. , Karsani, S.A. (2019) *Pigment and Resin Technology*

Effects of planting density and treatment with vermicompost on the morphological characteristics of oriental beech (*Fagus orientalis* Lipsky.)

Atik, A. (2013) *Compost Science and Utilization*[View all related documents based on references](#)[Find more related documents in Scopus based on:](#)[Authors >](#) [Keywords >](#)

conducted on four treatment groups; control plants that were not supplied with any fertilizer (NF), plants supplemented with NPK chemical fertilizer (FC), plants supplemented with vermicompost (FV), and plants supplied with the mixture of chemical fertilizer and vermicompost (FM). Vermicompost application was shown to have insignificant effects on the expression of chlorophyll and carotenoid in *C. nutans* as compared to chemical fertilizer. However, the supplementation of vermicompost (FV and FM) produced plants with greater stability of compounds during storage, in contrast to NF and FC. The major carotenoids in *C. nutans* methanolic extracts supplied with vermicompost and organic fertilizers were identified as violaxanthin, lutein, α -Carotene and β -Carotene, while control plants lacked in α -Carotene and β -Carotene. This analysis provides a better insight into the application of vermicompost as an alternative source of growth supplements for the sustainable production of pigments which can act as a functional natural colourant and deliver great medicinal benefits to humans. © 2023 Penerbit Universiti Kebangsaan Malaysia. All rights reserved.

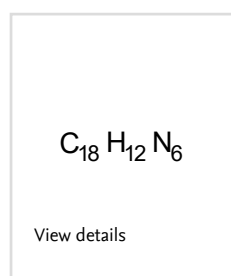
Author keywords


Carotenoid; *Clinacanthus nutans*; extract storage; total chlorophyll content; vermicompost

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