



## **Analysis of the comparative study on flower pigments with phenylalanine ammonia-lyase activity in orchid plants**

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### **ABSTRACT**

Background: Orchidaceae plants have been one of the most important industrial products in the agricultural industry around the world. Since the flower petals have eye-catching pigments, they can be used as cut flowers in addition to being potted flowers. Objective: The key pigments found in orchid flower petals were studied, as well as their relationships to phenylalanine ammonia-lyase (PAL) activity. Results: Total anthocyanin content of six different orchids' petals was determined spectrophotometrically and the value ranged from 0 mg/g (in Dendrobium Shavin white) to 2.128 mg/g (in Mokara Aranda). The petals with vivid colour have a high amount of anthocyanin content, while, they have a high amount of chlorophyll content for those with pale colour. Total anthocyanin content was found to be the highest when compare to  $\beta$ -carotene and chlorophyll content. PAL behaviour was found to be significantly positive associated with anthocyanin content in correlation analysis. Conclusion: The results indicate the potential for PAL enzyme as a biomarker for flower colour in orchids.

### **KEYWORDS**

Chlorophyll; Carotenoid; Anthocyanin; Phenylalanine ammonia-lyase

**ACKNOWLEDGEMENTS**

The authors are grateful for the financial support through the Ministry of Education, Exploratory Research Grant Scheme (2013-1) and Universiti Malaysia Pahang Funding (UIC 200303). We would like to thank all FIST staff, Universiti Malaysia Pahang for their fully cooperation.