

## Quantification of total phenolics in flowers of selected *Phalaenopsis* cultivars

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Floral phenolics are correlated with the senescence of the flowers. The excessive production of reactive oxygen species (ROS) damages the cells and accelerates senescence. These phenolics have been reported to assist in the mitigation of the effect of ROS by scavenging the free radicals. Flowers with delayed senescence are reported to display higher phenolic content. Hence, cultivars with high phenolic content can be used as parental cultivars in breeding programs to produce novel cultivars with delayed senescence. *Phalaenopsis* is a top-traded genus in the family Orchidaceae. The flower phenolic content can be determined as an important vegetative trait for the selection process. Hence in this study, the phenolic content of 6 *Phalaenopsis* cultivars, (*Phalaenopsis* cv. Shu Long 'F89322', *Phalaenopsis* cv. 1759, *Phalaenopsis* cv. Sogo Yukidian V3, *Phalaenopsis* cv. Queen Beer 'Mantefon', *Phalaenopsis* cv. Taipei Gold 'Gold Star', *Phalaenopsis* cv. Brother Strips) with different colors at the same developmental stage was analysed to compare their phenolic content. The complete flowers of each cultivar were dried at -80 °C and powdered by using a mortar and pestle. A known amount (500 mg) of powder was mixed with a known amount (5 mL) of acidified methanol and centrifuged. The supernatant was subjected to the Folin-Ciocalteu method to assess the total phenolic content. The phenolic content was expressed as Gallic acid equivalent (GAE) per mg of dry weight. According to the results, the total phenolic contents of *Phalaenopsis* cv. Shu Long 'F89322', *Phalaenopsis* cv. 1759, *Phalaenopsis* cv. Sogo Yukidian V3, *Phalaenopsis* cv. Queen Beer 'Mantefon', *Phalaenopsis* cv. Taipei Gold 'Gold Star' and *Phalaenopsis* cv. Brother Strips were 2.170 mg GAE.g<sup>-1</sup>, 0.997 mg GAE.g<sup>-1</sup>, 0.789 mg GAE.g<sup>-1</sup>, 2.418 mg GAE.g<sup>-1</sup>, 3.342 mg GAE.g<sup>-1</sup> 0.833 mg GAE.g<sup>-1</sup> respectively. Among the selected cultivars, *Phalaenopsis* cv. Taipei Gold 'Gold Star' has shown the highest phenolic content. Hence, it can be recommended as a suitable parental cultivar for future breeding programs as it would facilitate developing novel cultivars with long shelf life.

**Keywords:** Folin-Ciocalteu method, *Phalaenopsis* cultivar, Phenolics, Reactive oxygen species

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