Analysis of the Floral Scent Compounds in *Polianthes tuberosa* L.

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Abstract

Polianthes tuberosa L. is an important cut flower in Taiwan. Additionally, the absolute produced from the floral tissues of tuberose is considered as a valuable perfume material. Nevertheless, a great degree of variation in the production of floral scent present in different cultivars of tuberose. In this study, GC/MS method was applied to analyze compounds emitted from tuberose flowers of fragrant cultivars, *P. tuberose* cv.'Single' and *P. tuberose* cv. 'Double' , and non-fragrant hybrid *P.* x *Howardii*. In our results, GC/MS detected 9 volatiles in both fragrant cultivars, *P. tuberose* cv.'Single' and 'Double'. These 2 cultivars have 6 common volatiles emitted from the floral tissues. In the flowers of non-fragrant hybrid, *P.* x *Howardii*, 2 volatiles were detected. The scent's compounds detected in tuberose's flowers belong to several groups of secondary metabolites, including terpenoid, benzenoid, fatty acid derivatives and nitrogen-containing compounds. Comparing the floral scent compositions within these 3 cultivars indicates that volatile components, 1,8-cineole, methyl benzoate and methyl salicylate, only present in the fragrant cultivars with high level of concentration, but not in non-fragrant hybrid. This result suggests that the principal components contributing to the floral scent of tuberose are 1,8-cineole, methyl benzoate and methyl salicylate.

Key words：Tuberose, Floral scent compounds

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