



Volatiles compounds of three *Plumerias* species

Antonio J. Demuner¹, Marcelo H. Dos Santos¹, Luiz C. A. Barbosa^{1,2}, Nilton C. Ribeiro³

¹ Departamento de Química – UFV - Avenida Peter Henry Rolfs, s/n
Campus Universitário - VIÇOSA - MG, Brazil

² Departamento de Química - UFMG - Belo Horizonte, Brazil

³ IFMT- Rondonópolis, Brazil
nilton.ribeiro@ufv.br

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The identification of volatiles from the flowers of three species (*rubra*, *alba* and *obtusa*) of the genus *Plumeria*, in white, red and yellow colors, as well as a comparison of emission of these compounds during the day with the night shift, and its possible relationship in attracting *Pseudosphinx tetrio* (Linnaeus) has not been reported yet. The fragrances issued by flowers are mean of orientation and attraction to their pollinators of interest as well as serving as important aspects in choosing the pollination agent. Some volatile compounds emitted by plants act as a defense, whether to ward off predators, allopathic interactions or attract some sort acting on their behalf (1). The flowers emit different compositions in their scents according to their growth stage, and they are subject to influences in the formation of aromas by climate conditions and or nutrient availability or attacks by predators (1,2). The analysis was performed by GC-MS using HS-SPME with an SE 54 column (95% methyl / phenyl 5%) with 30 meters length and internal diameter of 0.25 mm (Supelco). Twenty-two different compounds were identified, with majority occurrence of linalool (86.5% daily and 75.0% night) and 2-phenyl ethyl alcohol (15.4% and 6.0% nighttime daytime), in white flowers. Major volatiles in red flowers were methyl benzoate (56.0% and 62.4%, daytime and evening) and 2-phenyl ethyl alcohol (21.7% daily and 13.0% night). The major compounds in yellow flowers were methyl salicylate (30.3% daily and 20.6% night) and methyl benzoate (14.6% daily and 27.3% night). The volatile compounds were identified by comparison with the data of NIST11 and Wiley7 libraries and with C7-C30 hydrocarbon standard retention times using Arithmetic Index (AI). Using a standard linalool an analytical curve was made, which provided the linearization straight from the equation $y = 194321X + 1.108$ with $R^2 = 0.9923$, where Y is the peak area and X is the concentration in ppm. Thus, it was possible to determine the concentration of linalool as 1660.7 ppm during the day and at night as 773.69 ppm. Food and pollination choice of *P. tetrio* for *Plumeria* with white flowers can be suggested because of linalool and 2-phenyl ethyl alcohol as major compounds in white flowers. The change in ratio of linalool and 2-phenyl ethyl alcohol in different periods may be due to the nocturnal *P. tetrio* with the plant promoting a change in your metabolic route to attract the moth. These studies help us understand the ecological relationship of species of *Plumeria* and *P. tetrio* and guide for new experiments to verify the effectiveness of the identified compounds.

1. Kong et al., J. Am. Soc. Hortic. Sci. 2012, **137**, 376-382.
2. Steenhuisen, S.L. et al. S. Afr.J. Bot. 2010, **76**, 779-780.

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