

**PP97. The floral scent of *Dianthus cruentus* Griseb.
(Caryophyllaceae)**

Niko S. Radulović^{1*}, Milenko N. Ristić², Novica R. Ristić², Vidoslav S. Dekić²,
Biljana R. Dekić², Marko Z. Mladenović¹

Keywords: *Dianthus cruentus*, volatiles, floral scent

The genus *Dianthus* L. (Caryophyllaceae) comprises over 300 species of herbaceous plants that are spread over a vast area, especially in the Mediterranean region. Species of this genus, represented with 38 taxa in the Serbian flora, have attracted attention due to the very beautiful flower color combinations ranging from white to deep purple [1]. This characteristic pigmentation, among several other morphological traits, distinguishes *Dianthus* from other genera within the family Caryophyllaceae, although the evolutionary progress, diversification and the subdivision of the genus still remain controversial [1].

Although *Dianthus* species, especially the flowers, are utilized ethnopharmacologically, only few secondary metabolites, besides pigments, have been studied in detail [1]. A SciFinder search gives back around 4,000 reports dealing with *Dianthus* species, however, less than forty dealt with the analysis of secondary metabolites of the taxa from this genus. Some of the identified constituents displayed a great biological/pharmacological potential, as well as a huge significance for the pollination biology and taxonomy.

Dianthus cruentus Griseb. is a highly valued plant species due to the fragrance and blood-red color of its flowers. Strangely, there are no previous reports on its chemical composition in the literature. In this study, we performed the first GC-MS analysis of the volatile constituents of *D. cruentus* flowers in order to possibly detect and identify its odoriferous components.

Only 24 constituents were identified, many of which were easily recognized as having odorous properties. The floral volatiles were made up mainly of fatty acid-derived compounds and shikimate metabolites. The major identified volatile compounds were heptanal, benzyl alcohol, heptanoic acid, maltol, and phenethyl alcohol. All major constituents are well known for its characteristic scent e.g. maltol (odor of cotton candy and caramel), phenethyl alcohol (pleasant floral odor), heptanal (strong fruity odor) etc. Although, maltol might also be an artifact of the analytical procedure and not a true constituent of *D. cruentus* flowers.

References:

[1] Rechinger, K.H. 1979. In: *Illustrierte Flora von Mitteleuropa*, Hegi, G. (ed.) Vol 111/2, Paul Parey, Berlin, pp. 984–1037.

Acknowledgments: This work was supported by the Ministry of Education, Science and Technological Development of Serbia [Project No. 172061].

¹Department of Chemistry, Faculty of Sciences and Mathematics, University of Niš, Višegradska 33, 18000 Niš, Serbia;

²Faculty of Natural Science and Mathematics, University of Priština, Lole Ribara 29, 38220 Kosovska Mitrovica, Serbia.

*Corresponding author: nikoradulovic@yahoo.com