

Bupleurum plantagineum Desf. (Apiaceae) is a plant endemic to North Africa, including Algeria. It is used as natural medicine, due to its anti-inflammatory, antioxidant and hepatoprotective properties. In this work, we studied the chemical composition of the essential oil (EO) obtained by hydro-distillation from *B. plantagineum* leaves collected from the national park of Gouraya (Bejaïa), Algeria. Thirty components were identified in the EO by Gas chromatography–Mass Spectrometry (GC–MS) (relative abundance: 96.7%). Monoterpene hydrocarbons (56.8%) were the predominant, followed by oxygenated monoterpenes (36.7%). The main components were *cis*-chrysanthenyl acetate (33.5%), α -pinene (18.4%), myrcene (16.5%) and (E)-anethole (4.9%). This volatile profile differs from those reported for other *Bupleurum* spp. and for *B. plantagineum* from Algeria, suggesting the identification of a new chemotype. Overall, our results represent a contribution to the characterisation of natural products from Algeria and the preservation of its natural biodiversity. The same results will also represent a starting point for further studies on *B. plantagineum*.