

## **Effect of plant ontogeny on the phytochemical composition and antioxidant activity of *Artemisia herba alba* essential oil**

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### **ABSTRACT**

*Artemisia herba-alba* is a medicinal and strongly aromatic plant widely used in traditional medicine by many cultures since ancient times. It is known that the quantitative chemical composition of plants and consequently their biological activities vary throughout the vegetative cycle. The main purpose of this study was to evaluate the phenophase effect on the chemical composition of essential oil and consequently on antioxidant capacity of *A. herba-alba*. Plant material has been harvested at three phenological stages (late vegetative, full-flowering and early vegetative stage). EO isolated by hydrodistillation were analyzed by GC/SM. The antioxidant capacity was determined by DPPH free radical scavenging ability. Results indicated the presence of 57 components. Thirty-three components accounting for 99.70% of the total composition were identified in the late vegetative stage. In the full-flowering stage, 36 compounds were identified amounting 99.23% of total components. In the early vegetative stage, 38 compounds amounting 99.09% of total components were identified. Chemotype corymbolone characterizing full-flowering stage is a new chemotype described for the first time in the essential oil of *A. herba-alba*.

**Keywords:** *Artemisia herba-alba*, chemotype, essential oil, phenological stages,