

## ANALYSIS OF ELEMENTS IN DANDELION ROOTS SAMPLES COLLECTED FROM THE TERRITORY OF WESTERN SERBIA

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### Abstract

*The World Health Organization (WHO) estimates that around 70–80% of the world's population relies on non-conventional medications, most of which are derived from plant-based medicines. Dandelion (*Taraxacum officinale*) is a widely used medicinal plant in traditional medicine. In recent years, numerous studies have been conducted to improve the understanding of its medicinal and therapeutic properties, as well as its potential for practical clinical applications. Dandelion, belonging to the Asteraceae family, is a pharmacopeial and edible plant. In many European countries, it is a common weed found in fallow fields, along roadsides, in meadows, and on lawns. The pharmacopeial raw materials include the roots of dandelion (*Taraxaci radix*), the herba, and also the flowers. The root of dandelion contains numerous beneficial compounds and elements, but also those that may be harmful to human health.*

*In this study, eight elements (Ti, Al, Li, Co, As, Mo, Sb, Tl) were determined in the roots of dandelion. During the autumn of 2022, dandelion root samples were collected from nine locations in the area of the municipality of Ljubovija, in western Serbia. Samples were prepared by using dry digestion in triplicate, and the ash was dissolved in 6M HCl, followed by dissolution in 0.1M HNO<sub>3</sub>. The content of the elements in the dandelion roots was determined using inductively coupled plasma optical emission spectroscopy (ICP-OES). The content of Ti, Al, Li and Co in the roots were found to be in the ranges of  $3669.0 \pm 1223.5$ – $20673.0 \pm 4064.3$ ,  $128.7 \pm 5.7$ – $1046.3 \pm 110.2$ ,  $1.2 \pm 0.4$ – $2.7 \pm 1.4$  and  $0.2 \pm 0.0$ – $1.0 \pm 0.0$  mg/kg dry weight, respectively. The content of elements As, Mo, Sb, and Tl were below the detection limit.*

**Keywords:** Medical plant, Dandelion root, Elements, Inductively Coupled Plasma Optical Emission spectroscopy (ICP-OES).