



IDENTIFICATION OF SOME MINERALS FROM MEDICINAL PLANTS BY X-RAY FLUORESCENCE METHOD

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Abstract: *The analytical technique of X-ray fluorescence (XRF) has the capacity to determine the chemical composition of a wide variety of sample types (solids, liquids, slurries and powders). XRF is a widely utilized technique in the domains of quality control in various manufacturing sectors and process monitoring. The aim of this paper is to identified the total content of main macroelements (Ca, K, Mg, P) and microelements (Fe, Mn, Cu, Zn) in five medicinal plants studied: mint (*Mentha piperita*), chamomile (*Matricaria Chamomilla*), linden (*Tilia cordata*), marigold (*Calendula officinalis*) and St. John's wort (*Hypericum perforatum*).*

• Introduction

Mentha piperita and *Matricaria Chamomilla* are known as some of the most common medicinal plants. The utilization of linden tea in traditional medicine has a long history, with various cultures employing it to address a wide range of health concerns.

• Material and method

All the samples of medicinal plants come from the native flora from the western area of Romania. Quantitative analysis of dried and ground plants was performed using X-ray fluorescence spectrometry(X-MET8000, Hitachi, Japan).

• Results and discussions

The study of the elemental composition of some medicinal plants revealed the presence of potassium in high quantity in marigold, calcium in linden, magnesium in chamomile and phosphorus in St. John's wort. Mint, chamomile and marigold have the highest levels of iron, while St. John's wort has the highest levels of manganese, cooper and zinc in terms of microelements.

• Conclusions

The results obtained from this study show that the macroelements analyzed are present in medicinal plants in varying quantities.