

ESSENTIAL ELEMENTS IN DIFFERENT PARTS OF KASNI (*CICHORIUMINTYBUS*)

Kaneez F A, Khaula Shirin, M Qadiruddin, Mahboob Ali Kalhoro and Yasmeen Badar*

PCSIR Laboratories Complex, Karachi-75280, Pakistan

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Eight essential elements (Co, Cr, Cu, Fe, Mg, Mn, Ni and Zn) in different parts of *Cichorium intybus* were analysed by atomic absorption spectrophotometry. The results indicated that the plant contains sufficient amount of nutritional elements.

Greaves *et al* (1970) and Sali (1988) observed that trace elements are essential for life, have wide range of clinical applications and play a key role in the treatment of various diseases. The mechanisms of some metabolic lesions responsible for early pathological manifestations of trace elements are unclear and therefore efforts to characterize the biologically potent forms of these elements merit full attention. According to Iyengar (1987) there is a vast scope to exploit the preventive medicinal aspects of various trace elements such as Cu, Cr, etc. Since the best foreseeable benefit for human health by mineral nutrition lies in obtaining the correct amount of supplementation in the right form at the right time. Trace elements also play both curative and preventive role in combating disease. The curative feature played by Fe in anemia is a classic example.

Another example is role of Zn used as preventive and curative medicine in conception, growth and metabolic disorder, accordermatitis entropathic. Medicinal plants play the most important and vital role in traditional medicine. Traditional eastern system of medicine use elements for curing many diseases.

Kasni (*Cichorium intybus*) was collected in May 1998 from Karachi and identified at Applied Biology Division PCSIR Laboratories Complex Karachi. Roots, stems, leaves, flowers and seeds of the plants were separated, oven dried, powdered and ashed in muffle furnace at 550 °C. Each ash was then used for the analysis of Fe, Cu, Zn, Mg, Cr, Ni, Mn and Co.

Hitachi Z-8000 Atomic absorption spectrophotometer equipped with Zeeman back ground corrector and data processor was used. All parameters were set and followed

* Author for correspondence

strictly according to the manufacture's instructions using flame atomization. The standard stock solutions of elements were from E. Merck Co.

0.1 g of ash was weighed in a platinum crucible, then 4ml perchloric acid and 15ml hydrofluoric acid were added. Warmed the solution on flame for several hours, then evaporated nearly to dryness. Cooled and added 4ml hydrochloric acid. Half filled the crucible with deionized water and warmed to dissolve the salts. After cooling the solution, the appropriate dilutions of samples were made with deionized water, (Michael and Nicholes 1983) such as to keep concentrations of different elements within the linear range of absorbances obtained from measuring various standard concentrations of each elements.

Table shows the concentrations of Fe, Cu, Zn, Mg, Cr, Ni, Mn and Co present in the ash of roots, stem, leaves, flowers and seeds of Kasni. It is observed that Fe and Mg are in abundance in all parts of plant except leaves in which the concentration of Mg is low. The elemental analysis of the plant revealed that it contains sufficient amount of nutritional elements. According to Hooker (1982), Cr, Mg & Zn have an important role in the metabolism of cholesterol as well as heart diseases. The intake of Mg and Zn lowers the cholesterol level, (Sali and Shabilaov 1989; Kuhrts 1990). Whereas Cu, Cr, Mn and Zn also play an important role in sugar and cholesterol disorders (Kalhoro *et al* 1997). Hence it is expected that kasni with high concentration of the above mentioned elements may play an important role in maintenance of human health. However, further studies in this regard have to be under taken to verify this aspect.

Key words: *Cichorium intybus*, Essential elements, Spectrophotometry

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