THE IMPACT OF VARIOUS TEMPERATURES ON POLYPHENOL AND FLAVONOID EXTRACTION FROM *Fumaria officinalis* HERBA

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Abstract

Polyphenols are a large group of plant secondary metabolites that can be employed as preservatives, antioxidants, and additives. Flavonoids, as an important group of polyphenols and natural antioxidants, may reduce oxidative stress in cardiovascular and neurodegenerative diseases, diabetes mellitus, asthma, and eye disorders. The objective of the present study was to investigate the influence of high temperature on the extraction of polyphenols and flavonoids from fumitory (Fumaria officinalis L.). The polyphenol yield varied in a range of 16.56 to 18.33 mg gallic acid equivalent/g of dried plant material, achieving the highest value in the extract prepared using the high temperature for 30 min. The same trend was noticed for the flavonoid concentration in the extracts (7.14-8.48 mg catechin equivalent/g of dried plant material): macerate after 60 min ≤ macerate after 90 min ≤ HAE extract after 15 min ≤ HAE extract after 30 min. Compared to maceration and taking into consideration the industrial requirements such as high extraction yield for a shorter time, HAE could be recommended as a convenient technique for polyphenol and flavonoid extraction from fumitory. This research was an initial step in the production of polyphenol- and flavonoid-rich fumitory extracts aimed to be used for the formulation of foodstuffs and medicines.

Keywords: *fumitory, extracts, polyphenols, flavonoids.*