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CHEMICAL COMPOSITION OF ESSENTIAL OIL IN SEVEN POPULATION OF TUSSILAGO FARFARA FROM IRAN

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Tussilago is a monospecific genus within Asteraceae family (Pfeiffer *et al*., 2007) and an important medicinal plant worldwide (Wu *et al*., 2015). *T. farfara* distributedin wet mountainous regions of Iran, such as Tehran, Azerbaijan and Northern provinces (Mozaffarian, 2015). Avicenna a Persian polymath in canon has introduced *T. farfara* as a treatment for cough and shortness of breath. *T. farfara* leaves and flowers have expectorant activity and are used for chronic dry cough and various pulmonary diseases (Ferrer *et al*., 2016). The *leaves* of this plant were collected from seven major regions of Iran including Chalous Road, Damavand, Firoozkooh, Nur, Deylaman, Kaleybar and Namin. Fifty grams of air-dried leaves were blended and immersed in 500 mL of distilled water and the essential oil was isolated by hydrodistillation in a Clevenger-type apparatus for 3 h. The yield of *T. farfara* essential oil was among 0.02-0.07%. The essential oil was analyzed qualitatively by GC/MS and quantified by GC-FID. GC/MS analysis exhibited 28 components detected in most of the seven oils. 14-Hydroxy-*Z*-caryophyllene was the major compound in Chalous Road, Nur and Firoozkooh oil with 21.1%, 12.8% and 21.1%, respectively. The major compound in Namin oil was Humulene epoxide II with 21.1% and the major compound in Damavand oil was Aromadendrene with 14.4%. These significant differences were dependent on many factors such as climatic conditions, soil effect, where and time of sampling, plant development and their genetic characteristics.

Keywords: T. farfara, essential oil, leaves, GC/MS