

Evaluation of *Achillea millefolium* L. Biochemical Changes in Iran's Natural Habitat

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Abstract : *Achillea millefolium* L. is one of the most important medicinal plants with antioxidant compounds. The use of compounds derived from plants reduces the incidence of many chronic diseases. The purpose of this investigation is study of total phenolic content and antioxidant activity some of ecotypes yarrow grown in natural habitats in Iran. This experimental study was conducted in 2013 at the Islamic Azad University, Tonekabon Branch. After identifying the natural sites, we have attempted to harvest of aerial part and after drying in lab temperature, essential oil was extracted by steam distillation. In this research for evaluate the antioxidant properties was used of three method, DPPH, Antioxidant capacity ferro revival and phosphomolybdenum, that all mechanism is based on the electron donating. All ecotypes had antioxidant activity and ecotypes grown in Kandovan region were measured with the most total phenolic (89.5 mg GA/g dew) and flavonoid (20.4 µg/g dew) and the lowest in Saveh (71.3 mg GA/g dew, 17.4 µg/g dew). Variation of the antioxidant properties were significant ($P \leq 0.01$) in areas and were accounted Kandovan with highest value and the lowest in Save. As a result, yarrow essential oil grown in Kandovan in terms of amount of total phenolic, flavonoid and antioxidant property, it was determined the best natural habitat.

Keywords : *achillea millefolium* L., antioxidant compounds, DPPH, total phenolic, flavonoid natural habitats

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