The Effect of Extraction Methods on the Phenolic Content and Antioxidant Capacity of *Prunus* L. Grown in Bursa (Turkey)

E. Isik¹, S. Sahin¹, C. Demir¹²

¹ Uludag University, Faculty of Science and Arts, Department of Chemistry, 16059 Bursa, Turkey
² Bursa Technical University, Faculty of Natural Sciences, Engineering and Architecture, Department of Chemistry, Bursa, Turkey

esariburun@uludag.edu.tr, salihabilgi@uludag.edu.tr, cevdet@uludag.edu.tr

Although the use of wild and traditional edible species has been influenced by the economic attraction of food and non-economic crops, they are important in family food security, since people culturally accept and use them in different ways [1], but very few ethnopharmacological and phytopharmacological studies have dealt exhaustively with the potential health benefits of such diets. *Prunus* L. species are wild species in Turkey and their fruits edible. *Prunus* L. species have antioxidant properties due to their high level of anthocyanins and other phenolic compounds contents [2-3]. Epidemiological studies have consistently shown that there is a clear significant positive association between the intake of fruits and vegetables and a reduced rate of heart disease, mortality, common cancers and other degenerative diseases as well as aging, and this is attributed to the fact that these foods may provide an optimal mixture of phytochemicals such as natural antioxidants, fibres and other biotic compounds [1].

The selection of different extraction methods would mainly depend on the advantages and disadvantages of the processes, such as the extraction yield, complexity, production cost, environmental effects, and safety [4]. Many factors contribute to the efficiency of solvent extraction, such as the type of solvent, the concentration of solvent, the pH, the extraction temperature/time, the pressure and the particle size of plant. Therefore, it is appropriate to choose the optimal pretreatment method according to the chemical structures and properties of the analyzed compounds [5]. Conventional techniques such as organic extraction and acid extraction have been used to isolate phenolic compounds.

In this study, different extraction methods were used to examine the efficiency of extraction systems for the extraction of phenolic compounds in *Prunus divaricata* L. These methods are solvent extraction and ultrasonic-assisted extraction. Water, methanol, ethanol and their proportion were used as solvents in the extraction methods. Various extraction methods have been developed to investigate the total phenolic, total flavonoid contents and antioxidant capacity in *Prunus divaricata* L. wild grown in Bursa (Turkey).

KEYWORDS: total phenol, total flavonoid, total antioxidant capacity, extraction, *Prunus* L.

REFERENCES: