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FATTY ACID COMPOSITION AND ANTIOXIDANT

CAPACITY OF *Myrtus* (*Myrtus communis* L.)

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ABSTRACT

In this study, the antioxidant activities of ethanol extracts of *Myrtus communis* L (EEMC) of fruit, seed, and peel were investigated by different antioxidant methods including free radical scavenging activities of DPPH and ABTS radicals, and ferric reducing power. Antioxidant activity results of EEMC were studied by spectrophotometer and results were compared with BHA, BHT and Trolox as the positive control. Besides tests total phenolic compound amounts were determined in the

studied parts of *Myrtus*. In addition, the fatty acid composition of seed and peel were also determined by gas chromatography equipped flame ionisation detector (GC-FID). The scavenging effects of EEMC parts and standards on DPPH radical at 40 µg/mL concentration decreased in the order of Trolox>Seed>BHA>BHT>Fruit>Peel and were designated as 87.77, 83.77, 82.94, 63.60, 15.36 and 8.79%. DPPH free radical scavenging activities of seed EEMC at 40 µg/mL concentration were found higher than other parts (peel and fruit) and BHA, BHT. The scavenging effects of EEMC parts and standards on ABTS cation radical at 10 µg/mL concentration decreased in the order of Trolox=BHA>Seed>BHT>Peel>Fruit and were found as 92.7, 92.7, 92.6, 92.4, 78.3 and 71.7%. However, the values were not statistically significant. Reducing power activity of EEMC parts and standards were in the following order: BHT >BHA>Seed>Trolox>Fruit>Peel. Total phenolic compound amount were found for peel, fruit and seed as 8.66 mgGAE/g extract, 37.74 mgGAE/g extract, 251.93 mgGAE/g extract, respectively. Fatty acid composition for peel and seed samples were found as 13.5, 15.8, 61.1 and 9.79, 10.38, 75.5% for oleic acid, palmitic acid and linoleic acids, respectively. In conclusion, the fruit, seed, and peel ethanol extracts of *Myrtus* (*Myrtus communis* L.) exhibit high antioxidant activity and are composed of high amounts of phenolic compounds. Therefore, these products easily can be used as natural antioxidant sources for human health and may be preferred instead of synthetic antioxidants in public health or the food industry. The highest amounts of fatty acids in peels and seeds were linoleic acid and the lowest was also γ -linolenic acid and γ -linolenic acid in both parts.

Key words: *Myrtus*, antioxidant activity, phenolic content, radical scavenging, fatty acid