

Determination of the Antioxidant and Phenolic Activities of Lavender (*Lavandula angustifolia* Miller) PlantYeşim KARA¹, Ayşe KURU¹, İzzet KARA²¹Department of Biology, Science and Art Faculty, University of Pamukkale, Denizli, Turkey²Department of Mathematics and Science Education, University of Pamukkale, Denizli, Turkey
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Aim of the study: In this study antioxidant activities and phenolic content of hexane extracts obtained from leaves and seeds of lavender (*Lavandula angustifolia* Mill.). This plant has been used for many of years as medical and industrial Turkey.

Material and Method: Lavender (*Lavandula angustifolia* Mill) leaves were collected and dried in seasonal periods. The dried leaves were shredded by blender and the seeds were crushed in press and weighed 4g on a precision scale and extracted with solvent (n-hexane) for 6 hours in a Soxhlet device. The solvent portion of the extracts was removed on a rotary evaporator and the remaining extract was taken up in dark glass bottles for further use in the study and placed in the refrigerator to be stored at +4 ° C. The release activities of the extracts were determined using the free radical of 1.1 - diphenyl-2-picrylhydrazyl (DPPH). 1 ml of DPPH solution was added to 1 ml of plant extract (at different concentrations) and the absorbance of the samples was measured at 517 nm after incubation at room temperature for 30 minutes in the dark. The total phenol content was determined according to the Folin-Ciocalteu method. By the end of the period, it was read 765 nm in UV Spectrophotometer and the total phenol amounts were calculated as mg in a way to be equivalent to the gallic acid from the calibration curve drawn with gallic acid.

Results: The phenolic substances comprise the most important groups of natural antioxidants. Therefore, the antioxidant strength of a substance depends on the amount of the phenolic substance. As a result of the studies carried out, we can conclude that any extract with more phenolic substance has high antioxidant activity too. The free radical elimination activities of the extracts were determined using 1.1-diphenyl-2 picrylhydrazyl (DPPH) free radicals. The lower the absorbance of the reaction mixture of antioxidant and DPPH, the higher the antioxidant free radical elimination activity. The standard free radical elimination activities of jojoba leaf-seed extracts at 5 different concentrations were determined. As can be seen from the values obtained, an increase was found in the DPPH activity with the increase of extract concentration among the 1mg/ml of lavender seeds extracts. When the total phenolic content of lavender extracts was examined, the highest values were determined as 314.40±1.25 mg GAE/ml for lavender leaf and 99.50±0.75 mg GAE/ml for lavender seed.

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