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Green leaves of walnut from wastages can be available as a source of natural compounds with antioxidant properties. Antioxidants are compounds which can prevent effectively reactions between free radicals containing active oxygen and nitrogen to other biomolecules such as proteins, lipids, and DNA. This is led to reduce cell damage and death, cardiovascular diseases and cancers. Antioxidants properties were studied on 27 walnut genotypes of Iranian superior and three foreign cultivars in the garden research center of Kerman province. Total phenol, flavonoid, anthocyanin and it was Calculated hydrogen peroxide radicals and superoxide scarenging activity, ferric reducinng power and DPPH methods. The analysis of variance results indicated significant differences between genotypes in 1% significant level. The highest total phenol, flavonoid and anthocyanin activity blonged to American chandler (18.645 mg/grams of dry matter), or24 (137.108 mg/grams of dry matter) and Or64 genotype(89/5 micromoles per gram weight with), respectively. The highest hydrogen peroxide radical, superoxide radical and antioxidant were related to kd23 (56/34 %), or2 (49/67 %) and zia30 (80.989 micrograms/ml) respectively. and the highest ferric reducinng power were relouted to sh1(99/53 milli gram/ml). To determine the relationships between genotypes, cluster analysis was performed by between-groups linkage based on square euclidian distance. The dendrogram showed five groups between genotypes. Discriminant function analysis confirmed our clustering groups. It is recommeded that hybridization between kr23, kh32 and k15 to 111, G3 and 95 genotypes in order to obtain the highest transgressive segregation for future projects of walnut breeding. Several factors affect the amount of phenolic compounds in plant tissu such as genetic factors, amount of sunlight, soil conditions, ripening in harvesting time, environmental conditions, post-harvesting and storage operations.

Key words: Phenolic compounds, Flavonoids, Diphenylpicrilhydrazyl, Hydroalcoholic extract



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