Influence of Site Factors on Phenolic Properties of Crimean Juniper (*Juniperus excelsa* Bieb.) Berries in the Lakes District of Turkey

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Juniper berry is important in food industry due to their high essential oil and phenolic content. In this study, it was aimed to determine the influence of site factors on phenolic yield and sum of phenolics from Crimean juniper berries in the Lakes District of Turkey. For this purpose, the berries at same maturity were collected from 40 plots in October-December 2013. Olive samples were extracted from these berry samples (dried and powdered) by Soxhlet for each plot. After the sample was filtered, the solution was evaporated to determine the percent of phenolic yield. Phenolic yields ranged from 20.15 % to 49.94 %. Phenolic compositions were analyzed by high performance liquid chromatography (HPLC) method. Gallic acid, protocatechic acid, catechin, p-hydroxy benzoic acid, chlorogenic acid, caffeic acid, epicatechin, vanillin, p-coumaric acid, ferulic acid, cinnamic acid, quercetin, luteolin, apigenin as phenolic composition of the berry samples were determined. The predominant major phenolic compounds as average of forty plots were catechin (1511.00 mg/kg), chlorogenic acid (856.81 mg/kg) and epicatechin (714.78 mg/kg), respectively. Sum of phenolic compounds of the berries at each plots ranged from 2688.75 mg/kg to 8576.25 mg/kg. Finally, Hierarchical Cluster Analysis (HCA) and Principal Component Analysis (PCA) using PAST Software were performed to identify the relations between site factors and phenolic profiles of the berries. According to the results of PCA, phenolic yield decrease significantly when annual mean temperature, annual maximum temperature and annual minimum temperature increase.
adversely altitude. Also, sum phenolics showed positive correlation with precipitation and radiation index, significantly. As a result, phenolic properties of Crimean juniper berries were especially influenced by the climatic site factors.

**Keywords:** Climatic factors, Crimean juniper, Lakes district, phenolic, site factors

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