Investigation of volatile compounds of different plum varieties in the ecological conditions of northwestern of Turkey

Murat Seker¹, Neslihan Ekinci², Mehmet Ali Gundogdu¹, Engin Gur²

¹University of Çanakkale Onsekiz Mart, Faculty of Agriculture, Department of Horticulture
Canakkale, Turkey (mseker@comu.edu.tr)
²University of Çanakkale Onsekiz Mart, Lapseki Vocational College, Lapseki, Çanakkale, Turkey

Summary
Aroma is one of the essential factors for the evaluation of plum fruit quality. Production of aroma compounds is an important factor determining final sensory quality of fruit produce and hence consumer satisfaction, and is directly influenced by variety characteristics. In this experiment aroma fractions of commercial plum varieties including ‘Angeleno’, ‘Formosa’, ‘Papaz’, ‘President’, ‘Santa Rosa’, ‘Stanley’, ‘Black Beauty’, ‘Black Amber’, ‘Italian’ and ‘Climax’ were investigated by using diethyl ether solvent for liquid-liquid extractions. The identification of volatile constituents was performed by Gas Chromatography / Mass Spectrometer (GC/MS) instrument. A total of 68 volatile constituents was identified and relatively quantified. Those compounds included C₆ compounds, esters, aldehydes, lactones, terpenoids, alcohols, alcanes, ketones and other compounds. The concentrations of the volatiles were significantly changed among the varieties. The major volatile constituents of the varieties were hexanal, 2-hexenal, benzaldehyde, (E)-2-octenal, hexyl acetate, ethyl acetate, 4-hexen-1-ol acetate, (E)-2-hexen-1-ol acetate, D-limonene, linalool, 6-methyl-5-hepten-2-one, 1-hexanol, (Z)-3-hexen-1-ol, 2-ethyl-1-hexanol, γ-decalactone.

Key words: Prunus salicina, Prunus domestica, Prunus spinosa, aromatic compounds, flavor.