

Characterization and Geographical Differentiation of Yellow Prickly Pear Produced in Different Mediterranean Countries

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Abstract : The aim of the present study was to differentiate yellow prickly pear according to geographical origin based on the combination of mineral content, physicochemical parameters, vitamins and antioxidants. A total of 240 yellow prickly pear samples from Cyprus, Spain, Italy and Greece were analyzed for pH, titratable acidity, electrical conductivity, protein, moisture, ash, fat, antioxidant activity, individual antioxidants, sugars and vitamins by UPLC-MS/MS as well as minerals by ICP-MS. Statistical treatment of the data included multivariate analysis of variance followed by linear discriminant analysis. Based on results, a correct classification of 66.7% was achieved using the cross validation by mineral content while 86.1% was achieved using the cross validation method by combination of all analytical parameters.

Keywords : geographical differentiation, prickly pear, chemometrics, analytical techniques

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