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Shelf-life prediction for Non-accelerated studies (SheNon) applied to eggplant

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In this work we propose a statistical method here called SheNon (Shelf-life prediction for Non-accelerated studies). Such method is based on principal components and linear regression analysis. Here we present shelf-life estimation for minimally processed eggplants. Samples were stored without chemical preservatives and evaluated by appearance, color, aroma, overall acceptance (OA), purchase intention (PI), L, a *, b *, Hue angle (h), soluble solids (SS), acidity, pH, browning index (BI) and chromaticity. PC1 and PC5 presented the highest correlations with time, respectively and then moved on to regression fitting step. Eggplants showed to age mainly along PC1. Some attributes like aroma, appearance, color, OA, PI, L and h were related to fresh samples and a*, b*, SS, BI and chromaticity were associated to aged products. To predict the shelf-life, a linear regression model was selected considering these principal components. A borderline sample vector was provided by an expert in food technology, which, applied to in the adjusted regression model, yielded the shelf-life estimative of 9.6 days (±4 days, confidence level of 95%). By the results it was found that the proposed method is promising for estimating shelf-life.

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Characterization of pomegranate (*Punica granatum L.*) genotypes collected in southeastern Italy

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The popularity of pomegranate (*Punica granatum L.*) is very high among consumers due to its organoleptic properties, nutritional values and nutraceutical properties. Pomegranate is characterized by a large variability in terms of domestic, wild and ornamental genotypes and for seed-hardness, juiciness, rind and aril color, sugar/acid ratio, antioxidant activity, fatty acids, phenols and anthocyanin content. Evaluation of pomegranate germplasm has usually been performed using fruit morphological and chemical traits, whereas genetic studies received very little attention. A two-year study was carried out in Puglia region, Southeastern Italy, for the evaluation of 13 pomegranate genotypes, sweet and sour of Italian and Israeli origin in order to evaluate morphological, genetic and bio-chemical traits. Significant differences were observed for many of the parameters investigated, in particular fruit and aril size and maturity index of fruits, titratable acidity, total polyphenol content and antioxidant activity of juices and oil content of seeds. Genetic analysis on the pomegranate collection identified 53 SSR loci able to distinguish the different genotypes and to estimate genetic distances. Pomegranate genotypes clustered according to both geographical origin and morphological-chemical traits (skin color, size, taste and polyphenolic content), suggesting that SSR markers could be effective to detect the genetic diversity of pomegranate, thus facilitating the exploitation of this fruit species germplasm. In general, morphological, chemical and genetic parameters allowed to clearly distinguishing the Italian genotypes from the Israeli ones.

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Notes:

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