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Chemometric Estimation of Phytochemicals Affecting the Antioxidant Potential of Lettuce

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Abstract : In this paper, the influence of six different phytochemical content (phenols, carotenoids, chlorophyll a, chlorophyll b, chlorophyll a + b and vitamin C) on antioxidant potential of Murai and Levistro lettuce varieties was evaluated. Variable selection was made by generalized pair correlation method (GPCM) as a novel ranking method. This method is used for the discrimination between two variables that almost equal correlate to a dependent variable. Fisher's conditional exact and McNemar's test were carried out. Established multiple linear (MLR) models were statistically evaluated. As the best phytochemicals for the antioxidant potential prediction, chlorophyll a, chlorophyll a + b and total carotenoids content stand out. This was confirmed through both GPCM and MLR, predictive ability of obtained MLR can be used for antioxidant potential estimation for similar lettuce samples. This article is based upon work from the project of the Provincial Secretariat for Science and Technological Development of Vojvodina (No. 114-451-347/2015-02).

Keywords : antioxidant activity, generalized pair correlation method, lettuce, regression analysis
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