Authentication of green asparagus of the Huétor-Tájar population variety by NIRS spectroscopy

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The Huétor-Tájar asparagus is regulated by a Specific Quality Denomination and by a Protected Geographical Indication within the European Union. In order to develop a qualitative model that allows discriminating this product from the commercial hybrids of green asparagus produced worldwide, NIRS spectra were collected from samples of freeze-dried shoots of 85 genotypes from Huétor-Tájar and 105 samples of hybrid asparagus from 35 cultivars.

The qualitative analysis model used in this work has been the discriminant analysis based on partial least squares regression (MPLS2). The discriminant models developed allowed to correctly classify 98.31% of the samples, with 1.69% of samples with uncertain classification.

It should be noted that no sample of the Huétor-Tájar population variety was classified as a global hybrid and vice versa. This result could be of great interest for the control of the productions regulated by the specific denomination of this crop.

**Keywords:** Asparagus, NIRS, authentication