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**Relationship between sensory analysis and Near Infrared Spectroscopy in common beans**

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Breeding vegetable varieties according to sensory characteristics requires handling a very large number of samples. Furthermore, sensory analysis is time-consuming because it requires laborious sample preparation and only a few samples can be evaluated in a sensory panel session. Near Infrared Spectroscopy (NIRS) is a technique that uses a small sample, does not need extensive preparation, and has shown good correlations with both food chemical composition and sensory properties. Thus, NIRS could be useful for screening to select and reduce the number of samples submitted to sensory analysis.

We aimed to evaluate the feasibility of NIRS for scanning a large number of common bean (*Phaseolus vulgaris* L.) entries to find high quality sensory genotypes. Common beans corresponding to traditional Spanish varieties were submitted to sensory analysis (a panel of 12 trained judges) for the following attributes: seed-coat roughness, seed-coat perception, mealiness, and taste intensity of the whole bean. We used partial least squares regression to correlate the panel's findings with NIRS performed on ground seed-coat. Calibration correlation coefficients for the first 80 samples were 0.88, 0.85, 0.88, and 0.83 for seed-coat roughness, seed-coat perception, mealiness, and taste intensity, respectively. These results suggest that NIRS could help to select common beans with high quality sensory properties, although a larger set of samples is necessary to achieve a robust predictive model.

Keywords: NIRS (Near Infrared Spectroscopy), Common bean (*Phaseolus vulgaris* L.), Texture, Traditional varieties