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IDENTIFICATION OF BEAN CULTIVARS AND SICILIAN LANDRACES OF LENTIL BY MEANS OF IMAGE ANALYSIS

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Vision is the main cognitive mean of exploration for men. Artificial vision and image analysis are based on many civil, industrial and scientific applications.

Nowadays new image analysis technologies, using a quick capture image system by flat scanner and a statistic software for elaboration of data, have been realised. These methods are able to exceed the slow and subjective human vision to evaluate agricultural products samples that are also composed of a high number of individuals (for instance seeds).

We report a new image analysis application realised for lentil and bean identification.

We have realised a specific “MACRO” to measure morphological seeds parameters such as area, perimeter, length, width, roundness (shape factor), RGB and HLS components of colour seedcoat. Macro shows to work quickly and accurately. The best result can be attributed to the high variables number objectively measured.

The method has been applied to identify five Sicilian land races of *Lens culinaris* Medik, precisely Aragona, Bronte, Leonforte, Ustica and Villalba and eight bean cultivars (*Phaseolus vulgaris* L.), belonging to different types.

The method is reliable, quick, portable and non destructive. Infact it is possible to analyse the seed on farm with a Notebook and a small scanner, or on line by Internet connection to receive the seeds images and send the results back.