Sicilian Durum Wheat Landraces for Production of Traditional Breads

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A large number of durum wheat landraces were grown in Sicily, in the first half of the last century, because of their suitability to environmental conditions of Mediterranean areas. Because of their high adaptability and their particular qualitative characteristics, some landraces, such as "Timilia" (Fig. 1), are still cultivated in little areas of Sicily and used to produce typical local bread (Fig. 2).

Whole grain flour of "Timilia" is used for the preparation of the handmade bread from Castelvetrano ("Pane Nero di Castelvetrano") (Fig. 3), widely diffused in the western area of Sicily. Principal characteristic of this typical Sicilian bread is the dark colour of breadcrumb and the sweet taste.

RESULTS AND DISCUSSION

The results show that the eleven accessions of "Timilia" present later date of heading and higher plants, compared with tester varieties. Moreover, all Timilia's accessions present the highest length of spike. Regarding 1000-kernel weight, all accessions have registered low values (Tab. 1). Furthermore, tested genotypes showed high and comparable values of protein content (Fig. 4).

Electrophoretic characterization of storage proteins has highlighted a certain variability among accessions but a good uniformity within each accession. Particularly, "Timilia" landrace shows HMW "6+8" subunits pair, and LMW type "2" (Fig. 5).

Storage proteins, extracted by 26 seeds for each population, were characterized by SDS-PAGE on polyacrilamide gel electrophoresis identification of HMW and LMW gluten subunits, according to Dal Belin Peruffo et al. method (1981). Moreover it has been carried out an experimental bread-making test, according to AACC method n° 10-10, modified for durum wheat.

CONCLUSIONS

Sicilian landraces of durum wheat represent a precious source of biodiversity. Morphologic, agronomic and qualitative analysis of "Timilia" accessions showed a significant variability for all bio-agnostic and qualitative parameter. Furthermore, semolina of "Timilia" presents very peculiar qualitative characteristics which make this landrace particularly appropriate to be used, alone or in mixture, in production of handmade bread as "Pane nero di Castelvetrano" (TP) and bread from "Isnello" (PA).