

# Agro-morphological markers and organo-sulphur compounds to assess diversity in Tunisian garlic landraces.

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UNKNOWN LABEL

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This work is aimed at studying diversity of 31 garlic landraces from Tunisia and structuring this diversity. It helped at establishing correlations between content of organo-sulphur compounds and agro-morphological characteristics. For this purpose the quantitative variability of five organo-sulphur compounds, namely: alliin, isoalliin, glutamyl allyl cysteine (GluAICs), isoglutamyl allyl cysteine (isoGluAICs) and allicin is studied. The diversity of the accessions for number of leaves per plant, the pseudostem length, dry weight of bulb, weight of one clove, weight of one bulb, bulb diameter, number of cloves in one bulb, the yield and number of days to dormancy release, is assessed. Particular correlations related to the yield and to the organo-sulphur compounds were demonstrated. Genetic diversity was assessed between and within accessions using statistical analyses including coefficients of variation, one way analysis of variance, hierarchical cluster analysis (HCA) and principal component analysis (PCA). Significant agro-morphological traits and organo-sulphur contents variations were found between accessions, except for the number of days for dormancy release (DDR). There is no correlation between total measured organo-sulphur compounds and any of the agro-morphological characteristics. The yield is highly influenced by the following characteristics: weight of the clove, the weight and the diameter of the bulb, the number of leaves per plant and the stem length. Total variance was well described by the first three PCA axes which represent 80.57% of the variance. The PCA and HCA distinguished two major groups of garlic. Clustering does not correspond to the geographical origin but it distinguishes clearly between coloured and light coloured accessions.

**DATES**

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**AUTHOR(S)**

Naouel Jabbes, Ingrid Arnault, Jacques Auger, Bouthaina Al Mohandes, Cherif Hannaki

**SOURCES**

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