

IDENTIFICATION OF A SET OF WIDE UNTAPPED DIVERSITY FOR REACTION TO TAN SPOT IN DURUM WHEAT

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The CerealMed research project (Enhancing diversity in Mediterranean cereal farming systems 2020-2023) is aiming to implement a biodiversity-based wheat cropping system in the Mediterranean area. CerealMed includes 11 research partners active in 7 countries around the Mediterranean basin (Italy, Spain, Morocco, Egypt, Lebanon, Turkey, and Greece), to bring together expertise and innovation in genetics, agronomy, microbiology, and agro-socioeconomics by an integrated approach. In the frame of the CerealMed project, a population of nearly 130 introgression lines (genome of *T. dicoccoides* MG4343 introgressed into durum wheat PR22D89) has been evaluated during 2020-2021 growing season in a field trial in two locations (Fiorenzuola d'Arda-Northern Italy and Foggia-Southern Italy).

Heading date and plant height were measured for the genotypes as main morpho-phenological traits. The reaction to a natural infection of tan spot caused by *Pyrenophora tritici-repentis* was also evaluated. A wide

phenotypic variation was found in the segregating population in both locations, with many susceptible lines. Interestingly, in both trials a significant difference for disease severity was observed between the two parents, with a more susceptible reaction in PR22D89 than in MG4343. A set of lines with a resistant phenotype registered consistently in the two locations has been identified as promising lines carrying genes for resistance to tan spot. A preliminary mapping of resistant loci was carried out in the introgression line population, and a group of seven lines sharing a region of interest on the long arm of chromosome 1B have been identified, together with closely linked molecular markers potentially useful for the marker-assisted transfer of these loci in breeding programs.

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