

COMMON AND DURUM WHEAT GENETIC MATERIALS FOR STUDYING GRAIN QUALITY-RELATED TRAITS

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Wheat is an important food crop worldwide. Climate change, disease and abiotic stresses can decrease yield and reduce grain quality, therefore search for useful alleles in wild accessions and subspecies could improve resilience and sustainability. Two genetic resources useful for studying grain quality-related traits were analyzed and characterized in the frame of the CEREALMED project. An introgression line population obtained by crossing a durum wheat cultivar, PR22D89, and an accession of *Triticum dicoccoides*, MG2323, was evaluated for protein content, SDS-sedimentation volume, beta-glucans and carotenoids in two different pedoclimatic environments to find genetic loci involved in these traits. Furthermore, a collection of 59 accessions of *Triticum aestivum* subspecies, including cultivars, breeding materials, landraces and wilds, previously characterized by SNP markers, was evaluated for carotenoid content. The variability present in this panel was partially overlapped with that observed in durum wheat and therefore useful in enlarging the total variation for wheat. Moreover, significant SNP markers putatively associated to this trait in common wheat were identified, providing the chance to identify novel useful alleles to further improve carotenoid content in both durum and bread wheat.