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STATUS OF DURUM WHEAT GENETIC RESOURCES AT ICARDA

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Durum wheat is a major cereal crop mainly grown around the Mediterranean basin. Its center of origin and diversity is within the Fertile Crescent, with secondary centers of diversity extending to North African and Abyssinian regions. ICARDA holds a unique durum wheat collection along with its wild relatives and runs a durum wheat breeding program serving mainly non-tropical dryland areas. The collection comprises of 20,509 durum wheat accessions (16,487 *Triticum turgidum* subsp. *durum* and 4,022 *Triticum aethiopicum*), 712 primitive tetraploid wheat (*Triticum turgidum* subsp. *dicoccon, Triticum turgidum* subsp. *carthlicum, Triticum turgidum* subsp. *polonicum, Triticum timopheevii* subsp. *timopheevii*) and 1,123 wild tetraploid wheat (*Triticum turgidum* subsp. *dicoccoides, Triticum timopheevii* var. *araraticum*). In addition, another 5,922 accessions of primitive and wild diploid wheat (*Triticum monococcum* subsp. *monococcum, Triticum monococcum* subsp. *aegilopoides, Triticum urartu*) and *Aegilops* species are conserved at ICARDA's Genebank, to serve in introducing potentially novel diversity into durum wheat cultivated genepool. Currently, all activities of ICARDA's Genebank have been relocated to Morocco and Lebanon, where efforts are focused on the reconstitution of the active and base collections, through an intensive regeneration plan of more than 5,000 durum wheat accessions regenerated and characterized annually. Overall, more than 90% of ICARDA's durum wheat collection is characterized, while a process for genotyping the collection has started in collaboration with CIMMYT with approximately 12,000 ICARDA's durum wheat accessions being already characterized using DArTseq. ICARDA continues the efforts for collecting novel diversity for targeted adaptive traits using GAP analysis, and being a pioneer using FIGS approach for distribution as an innovative way to develop manageable subsets for efficient mining of genetic resources for breeders sought adaptive traits. Pre-breeding using wild *Triticum*, primitive tetraploid wheat and some *Aegilops* species with "S" genomes is considered a major component of ICARDA breeding efforts allowing to derive unique germplasm with better adaptation to major biotic and abiotic stresses. This germplasm has allowed the national agricultural research systems in many countries to release high yielding and better adapted varieties.