

FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



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CEREALS MUTATION BREEDING IN TUNISIA

Cereal breeding programs are mainly released by governmental research institutions targeting disease resistance and yield increase. Most of the programs for durum wheat and barley are closely linked to international research centres such as CIMMYT and ICARDA for providing parental material, although, since the last decade, some of this material is also developed locally. There were few projects involving cereals mutation breeding attempts in Tunisia. Some were undertaken in the frame of IAEA supported projects such as TUN R0/12000 'Identification and pyramiding of mutated genes: novel approaches for improving crop tolerance to salinity and drought' and INT/5/150, 'Responding to the Transboundary Threat of Wheat Black Stem Rust (Ug99)'. In Tunisia, mutation breeding has been used to develop genetic material for harsh environments (drought and salinity). Many potential mutants tolerant to drought or salinity were isolated. However, the parental cultivars that were used had their resistance genes for major diseases overpassed and the generated mutants could no longer be considered for registration. Black rust Ug 99 resistant bread wheat mutant material was generated through the INT 5/150 project. However, the introgression into durum wheat, the main grown cereal in Tunisia, was not released yet. The former IAEA projects enabled capacity building which accounts as an important component for the ongoing mutation breeding projects. The TUN 5029 project is meant to capitalize on successes to develop drought tolerant barley and durum wheat, ready-to-register, mutants. Disease resistant parents will be used as starting material to generate mutants through seed irradiation as well as spikes (X ray and gamma) irradiation. Accelerated breeding techniques involving double haploid development will be used for fast development of drought tolerant cultivars.

Country or International Organization

Tunisia

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