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Somatic embryogenesis and double haploid techniques for improvement of mutant wheat

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To release new mutants is a long process that may need up to 12 years to be completed for some crops. This process depends largely on the nature of propagation of the crop, the targeted trait and the ability to recognize and select individuals carrying these traits in segregating populations. Induced mutation techniques and combination with advanced techniques such as doubled haploids and somatic embryogenesis techniques provide alternative for generating variability for biotic/abiotic stress resistance or tolerance and for manipulating and evaluating them in efficient ways for improved germplasm. These techniques also are important tools for modern crop improvement programs to increase breeding efficiency and shorten the time breeding programs. Although plant mutation breeding is faster than conventional breeding, application of these techniques speed up the time from mutation induction to mutant variety release. The present investigation was undertaken to study the somatic embryogenesis and doubled haploid techniques for improvement of wheat mutant to reach sufficient homozygosity to have advance a mutant line. This allowed us to choose the more apt of these two strategies for the next stage of research, combining plant tissue culture strategy via mutation breeding.

Biography

Ayşe Sen has completed her PhD from Istanbul University (2011) and Postdoctoral studies from FAO/IAEA Plant Breeding and Genetics Laboratory (PBGL) of FAO/IAEA Agriculture and Biotechnology Laboratories (2014) in Seibersdorf, Austria. Currently, she is a Research Assistant at the Istanbul University. Her main area of research tracks is in the field of agricultural and biological science, particularly in mutation breeding, molecular plant breeding, abiotic stress factors (drought, salinity etc.), oxidative stress, antioxidant defense system, magnetic field, radiobiology in plants.

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