

New Wheat/Alien Chromosome Translocations: Production, Characterization and Stability. (C01- mujeebkazi114050-Oral)

Authors:

- A.Mujeeb-Kazi* - *CIMMYT*
- M.D.H.William - *CIMMYT*
- A.A.Vahidy - *University of Karachi*
- T.Razzaki - *University of Karachi*
- R.Delgado - *CIMMYT*
- A.Cortes - *CIMMYT*

Abstract:

Majority of the tertiary gene pool species when hybridized with wheat yield F1 intergeneric combinations devoid of intergenomic chromosomal associations. Conventional and modified protocols do exist that have potential to promote alien genetic introgression into the wheat genomes. We selected one wide hybrid targeted for scab resistance and salinity tolerance; (*Triticum aestivum*/*Thinopyrum bessarabicum*) where the Ph gene prevents the ABD and J or Eb chromosomes from recombining. In order to promote chromosome pairing, the amphiploid (Ph Ph) was crossed by Chinese Spring ph ph yielding the Ph ph heptaploid backcross I (AABBDDJ) from which the ph ph progeny was derived and had the alien (1J to 7J) chromosomes well represented. The protocol used an integrated process of ph based cytogenetic manipulation, maize influenced haploidy, PCR diagnostic to detect phph or ph haploids, FISH to detect translocation events, Giemsa C-banding to identify the translocated chromosomes, coupled with conventional meiotic/mitotic cytology. Several homoeologous and non-homoeologous translocations have been produced and their utility in wheat improvement is discussed.

Corresponding Author Information:

Abdul Mujeeb-Kazi	phone: 650-833-6655
International Maize and Wheat Improvement	fax: 650-833-6656
Center	e-mail:
Apdo. 370, P.O. Box 60326	m.kazi@cgiar.org
Houston, TX 60326	
MEXICO	

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