

Localizing The Species Cytoplasm Specific Gene by Radiation Hybrid Mapping in Wheat. (C07-hossain145819-Oral)

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Abstract:

Species cytoplasm specific 9scs9 genes restore compatibility between the cytoplasm of *Aegilops longissima* 9lo9 and the nucleus of durum wheat. A compatible reaction results in plump seed with male sterile progeny while an incompatible reaction results in shriveled nonviable seeds. One scs gene has been identified on the long arm of the 1D chromosome of *Triticum aestivum* and transferred into an alloplasmic durum line 9lo9 durum. The molecular cytogenetic characterization of the 9lo9 durum line suggested that the 1D chromosome carrying the scs gene is introgressed into line through homoeologous recombination. Absence of eight molecular markers identified a distal region of 1DL chromosome missing in this line. The lack of a homologue for chromosome 1D in this line precludes conventional mapping approaches in localizing the scs gene. A radiation hybrid mapping population developed by irradiating plump seeds and molecular markers of chromosome 1D identified 36 lines with detectable chromosomal breaks. Analysis of the breakage and co retention between a marker and scs will be used to localize this gene.

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