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Czech J. Genet. Plant Breed.

Chaudhary H.K., Kaila V.:

Influence of different wheat and *Imperata cylindrica* genetic backgrounds on haploid induction efficiency in wheat doubled haploid breeding

Czech J. Genet. Plant Breed., 50 (2014): 195-200

Four Indian and one Japanese accession of *Imperata cylindrica* were assessed for their influence upon haploid production in F_1 generations of 21 wheat crosses

(winter \times spring, spring \times spring and winter \times winter) to find an efficient pollen source for haploid induction, which would enhance doubled haploid breeding in bread wheat. The frequency of haploid

induction was influenced differently by the wheat and the *I. cylindrica* genotypes, indicating both maternal and paternal genetic influence on haploid induction. The gene actions controlling the inheritance of haploid induction appeared to be non-additive. Haploid formation efficiency was closely associated with other haploid induction parameters, i.e. pseudoseed formation, embryo formation and haploid regeneration. Amongst wheat F₁ groups, spring × spring wheats exhibited the highest potential for haploid induction. General combining ability for haploid production was highest for the, *I. cylindrica* genotype Ic-Aru, native to the northeastern Himalayas, which appears as a potential pollen source for efficient haploid induction in bread wheat.

Keywords:

general combining ability; haploid induction; *Imperata cylindrica*; interactive influence; wheat

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