Czech Journal of GENETICS AND PLANT BREEDING

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Czech J. Genet. Plant Breed.

B., Verma N., Shivanna K.R.:

Broadening the genetic base of crop brassicas by production of new intergeneric hybrid

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Wide hybridization between crop brassicas and their wild relatives is an important approach towards increasing the genetic variability, which can be utilised for brassica breeding programs. A new intergeneric hybrid between *Erucastrum cardaminoides* and *Brassica oleracea* var. alboglabra was produced using embryo rescue techniques. The F1 hybrid was intermediate between the male and female parent for most of the morphological characters. Cytological studies of pollen mother cells of the hybrid revealed a preponderance of

univalents at metaphase I. The number of bivalents in the digenomic hybrid was lower than expected. However, the presence of trivalent and quadrivalent in cells indicated some homoeology between the two genomes and hence the possibility of introgression of genes into the cultivar. The first backcross progeny was obtained using *B. oleracea* var. alboglabra as the pollen parent. Further, it is being used for developing new alloplasmic lines. The intergeneric hybrid was also used as bridge species to transfer wild (*E. cardaminoides*) cytoplasm to *B. napus* and *B. carinata*. The new intergeneric hybrid and bridge cross hybrids produced in the present investigation have contributed towards increasing the genic and cytoplasmic variability and thus broadening the genetic base of crop brassicas.

Keywords:

Brassica oleracea var. alboglabra; embryo-rescue; *Erucastrum cardaminoides* genetic variability; wide hybridization

[fulltext]