

研究论文

芥菜型油菜×羽衣甘蓝种间杂种的获得及其性状表现

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收稿日期 2004-9-24 修回日期 2005-2-12 网络版发布日期 接受日期

摘要 芸薹属内遗传和变异类型极其丰富, 这为芸薹属植物种间杂交提供了条件。通过甘蓝(*B. oleracea*, $2n=CC=18$)和芥菜型油菜($2n=AABB=36$)的种间杂交可以获得六倍体新物种, 为油菜育种创造新的种质资源。本文选用芥菜型油菜和黄籽羽衣甘蓝(*B. oleracea* var. *acephala*, $2n=CC=18$)进行种间杂交, 在10个杂交组合中, 共授粉559朵花, 剥离种子35粒, 对所得种子进行组织培养, 建立了9个无性系。对该无性系进行染色体加倍处理和形态学、生物化学、细胞学、育性综合鉴定, 发现其中2个无性系为黄籽芥菜型油菜×黄籽羽衣甘蓝组合(03K169×03K05)的未加倍真杂种($2n=ABC=27$), 其籽粒为红色。杂种植株在各生长阶段, 形态均趋近于甘蓝型油菜; 在减数分裂后期 I、后期 II, 杂种都有不同程度的染色体丢失现象。杂种的酯酶同工酶具有两个亲本互补酶带。杂种植株生长势较强, 和双亲相比具有较强的杂种优势。杂种植株高度自交不亲和。

关键词 [种间杂交](#) [芥菜型油菜](#) [羽衣甘蓝](#)

分类号 [S565](#)

Obtaining and Character of the Interspecific Hybrids between *B. juncea* and *B. oleracea* var. *acephala*

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Abstract There are abundant genetic types available for making interspecific hybrids in Brassica. New sextuploid species ($2n=AABBCC=54$) can be obtained through interspecific hybridization between Brassica juncea ($2n=AABB=36$) and Brassica oleracea ($2n=CC=18$). 10 crosses between *B. juncea* and *B. oleracea* var. *acephala* ($2n=CC=18$) were selected, and 559 flowers were pollinated artificially and 35 seeds were obtained, 9 clones were gained through tissue culture (Table 1). These clones were treated for chromosome doubling and distinguished by the methods in morphology (Plate I -1, Plate I -2, Plate I -3), cytology (Plate I -4), biochemistry (Fig.1) and sterility. The results showed that two clones are true hybrids with red seedcoat, which derived from the same interspecific cross between *B. oleracea* var. *acephala* and *B. juncea* (03K169 × 03K05), however, they failed to be doubled in chromosome number. The hybrid plants were similar to *B. napus* in morphology in every growing period (Plate I -1, plate I -2, Plate I -3); some chromosomes lost in different degrees in meiosis anaphase I and meiosis anaphase II (Plate I -4); the hybrids had complementary esterase isozyme bands compared with its parents in the zymograms (Fig.1); the hybrids had stronger growth vigor and higher heterosis than their parents (Table 2). Most of them are self-incompatibility highly.

Key words [Interspecific hybrid](#) [B. juncea](#) [B. oleracea](#) var. *acephala*

DOI:

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