

عنوان مقاله:

(Combining Ability and Heterosis for Seed Yield and Its Components in Indian Mustard (*Brassica juncea* L

محل انتشار:

مجله علوم و فناوری کشاورزی، دوره 17، شماره 7 (سال: 1394)

تعداد صفحات اصل مقاله: 11

نویسندگان:

- .H. Meena - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .A. Kumar - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .B. Ram - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .V. V. Singh - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .P. D. Meena - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .B. K. Singh - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India
- .D. Singh - Directorate of Rapeseed-Mustard Research, Sewar, Bharatpur (Rajasthan), PIN Code: ۳۲۱۳۰۳, India

خلاصه مقاله:

Brassica juncea L. is an important oilseed crop which occupies premier position in Indian agriculture. Developing high yielding genotypes has been a major breeding objective in Indian mustard. Present study was conducted at Directorate of Rapeseed-Mustard Research, India, during ۲۰۱۰-۲۰۱۳ to determine General combining ability (GCA) and Specific combining ability (SCA) of parental lines and better parent heterosis of ۳۶ crosses of Indian mustard. Parents and F₁ hybrids were evaluated in RCBD with ۳ replications. Line×tester analysis involving nine breeding lines and four testers revealed the operation of both additive and non-additive gene actions with predominance of non-additive gene action in controlling yield and contributing traits. Four lines, namely, DRMR ۲۲۴۳, DRMR ۲۳۴۱, DRMR ۲۴۸۶, DRMR ۲۶۱۳, and one tester, NRCHB ۱۰۱, were adjudged the best general combiner possessing highly significant positive GCA effects for seed yield and yield contributing traits. Significant SCA effects for seed yield, ۱۰۰۰-seed weight, oil content, and other attributing traits in desirable direction were recorded in a series of hybrids and a close association between SCA effects and heterosis was observed amongst the best hybrids identified on the basis of SCA effects. Hybrids DRMR ۲۲۴۳/NRCHB ۱۰۱, DRMR ۲۲۶۹/NRCHB ۱۰۱, DRMR ۲۳۲۶/NRCHB ۱۰۱, DRMR ۲۳۴۱/NRCDR ۲, DRMR ۲۳۹۸/NRCHB ۱۰۱, DRMR ۲۴۸۶/Ashirwad and DRMR ۲۶۱۳/NRCDR ۲ exhibited highest magnitude of better parent heterosis with highly significant SCA effects and higher per se performance for seed yield. The high yielding crosses may be exploited for developing superior genotypes and the parents involved may be converted to well adapted cytoplasmic male sterile or restorer lines.

کلمات کلیدی:

Additive gene actions, High yielding genotypes, Restorer lines, Specific combining ability

