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Combining ability for yield and oil quality traits in Indian mustard [*Brassica juncea* (L.) Czern & Coss] using line × tester analysis

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ABSTRACT : Ten lines and four testers of Indian mustard [*Brassica juncea* (L.) Czern & Coss.] genotypes were used to estimate general combining ability (GCA) and specific combining ability (SCA) effects estimate for yield and oil quality traits. For all the quantitative and quality traits, the mean sum of squares due to line/tester was highly significant, proving that the parental lines used in present investigation are comprising the diverse genetic background. Among the lines and testers, good general combiner RH-30, RAURD 214, EC 401574 and Rajendra Sufalam have exhibited desirable negative and significant GCA effect for days to 50 per cent flowering and days to maturity, whereas positive and significant GCA effect for number of primary and secondary branches per plant, siliqua per plant, siliqua length, 1000 seed weight, biological yield per plant, oleic acid, oil content and seed yield per plant, indicating the presence of additive gene action or additive x additive interaction effects. On the basis of desirable SCA effects for yield, oil and its component traits were found best cross combinations RAURD 153/JD-6, EC 401574/Rajendra Sufalam, RAURD 170/JD-6 and RAURD 214/Rajendra Sufalam. The cross combinations EC 401574/Rajendra Sufalam, RAURD 214/Pusa Bold and RAURD 172/Pusa Bold with highly significant economic heterosis and SCA effects, reflected presence of both additive and non-additive gene effects responsible for increase in grain yield over economic parents.

KEY WORDS : Combining ability, GCA, SCA, Seed yield, Oil quality, *Brassica juncea* L.

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