

Supplementary Table 1 Analysis of variance for morphological traits in line $\times$ tester analysis in Indian mustard

Characters Source of variation	DF	Oil content (%)	Seed yield (kg/ha)	Seed/silique	Test weight (g)	Days to flowering initiation	Days to flower senescence	Days to maturity	Plant height (cm)	Main shoot length (cm)	Primary branch	Secondary branch	Silique on main shoot	Silique length (cm)
Replications	1	33.43107***	40902.11268	5.44254**	0.00451	1.01408	1.58451	11.83803**	409.02113*	1.01408	40.67606***	6.76761	6.25381	0.27070***
Treatments	70	6.81423***	551633.11408***	4.67410***	1.24314***	36.97666***	74.07485***	22.42374***	318.93521***	121.17807***	2.16378***	6.03642***	41.73640***	0.55693***
Parents	15	12.01700***	485413.63333***	6.50925***	2.09965***	88.01458***	123.61458***	40.71458***	603.63125***	214.01458***	3.68125***	11.25833***	72.10394***	1.01131***
Parents (Line)	10	13.58500***	458144.04545***	5.87045***	1.56982***	111.58182***	103.92727***	43.58182***	631.44545***	247.03333***	3.84545***	8.10909***	24.31136***	0.92527***
Parents (Testers)	4	0.1865	216861.90000***	9.69250***	2.42750***	39.40000***	112.60000***	23.75000***	155.35	139.60000*	1.9	20.35000***	73.69152***	0.84350***
Parents (L vs T)	1	43.65897***	1832316.44545***	0.1642	6.08651***	46.80057***	364.54602***	79.90057***	2118.61420***	178.81875*	9.16420**	6.38409	543.67931***	2.54296***
Parents vs Crosses	1	23.05129***	14749602.61319***	22.07843***	4.93012***	68.09290***	276.96614***	45.97959***	1096.03240***	11.42786	9.28240**	0.58339	9.19986	1.03656***
Crosses	54	5.06833***	307102.05320***	3.84204***	0.93694***	22.22323***	56.55657***	16.90673***	225.46229***	97.42256***	1.61044*	4.68687***	33.90350***	0.42182***
Line effect	10	12.34816***	488328.64727*	7.01600*	2.15749***	54.50545***	139.42545***	33.13636***	635.09636***	80.56182	1.99636	5.02909	84.51508***	1.45885***
Tester effect	4	9.01582*	595689.1273	2.30614	5.73509	113.40000***	258.71818***	67.08182***	414.37727**	535.86364	1.01364	8.13636	157.60471***	0.90895***
Line $\times$ Tester effects	40	2.85362***	232936.69727***	3.20214***	0.15199	5.03500**	15.62318***	7.83182***	104.16227	57.79364	1.57364	4.253636**	8.88048***	0.11385***
Error	70	0.78306	23339.44125	0.61668	0.04336	2.18551	1.88451	1.42374	81.43541	42.91408	0.96177	2.05332	2.43209	0.0187
Total	141	4.0088	285737.4538	2.66523	0.63872	19.44941	37.72156	11.92313	201.66642	81.47138	1.84018	4.06418	21.97197	0.28769

July 2025]

Supplementary Table 2 Estimates of components of variance for morphological traits in Indian mustard

Characters/ Component of variance	Oil content (%)	Seed yield (kg/ha)	Seed/ siliqua	Test weight (g)	Days to flowering initiation	Days to flower senescence	Days to maturity	Plant height (cm)	Main shoot length (cm)	Primary branch	Secondary branch	Siliqua on main shoot	Siliqua length (cm)
σ^2 Line	1.1565***	46498.9206*	0.6399*	0.2114***	5.2320***	13.7541***	3.1713***	55.3661***	3.7648	0.1035	0.2976	8.2083***	0.1440***
σ^2 Tester	0.3742*	26015.8948	0.0768	0.2587***	5.0552***	11.6743***	2.9845***	15.1337**	22.4068***	0.0024	0.2765	7.0533***	0.0405***
σ^2 GCA	0.6187***	32416.8404***	0.2528**	0.2439***	5.1105***	12.3242***	3.0428***	27.7063***	16.5812***	0.034	0.2831**	7.4142***	0.0728***
σ^2 L $\times$ T SCA	1.0353***	104798.6280***	1.2927***	0.0543***	1.4247**	6.8693***	3.2040***	11.3634	7.4398	0.3059*	1.1015**	3.2242***	0.0476***
σ^2 GCA / σ^2 SCA	0.5976	0.3093	0.1955	4.4912	3.5869	1.7941	0.9497	2.4382	2.2287	0.111	0.257	2.2996	1.5307

Supplementary Table 3 Mean performance and estimates of better parent heterosis for seed yield in *Brassica juncea* genotypes

Lines	Testers					Mean seed yield of lines (kg/ha)
	M 84	M 37	RC 273	DRMR IJ 14-137	DRMRIJ 31	
RE 11	3480.0 (15.02**)	4114.0 (35.98**)	3490.0 (15.35**)	2968.5 (-1.88)	3396.5 (12.26*)	3025.5
RC 571	3106.5 (3.07)	2908.0 (15.08*)	2591.0 (21.07**)	3218.5 (29.70**)	3387.5 (21.90**)	1427.0
CN 105312	2289.0 (-24.05**)	3016.5 (19.37**)	3054.0 (26.54**)	2212.0 (-10.86)	2953.0 (6.26)	2413.5
Pusa Bahar	3096.0 (2.72)	3597.5 (42.36**)	2792.5 (30.49**)	2437.5 (-1.77)	2847.0 (2.45)	1953.0
RNN 505	2834.5 (-5.96)	3557.0 (40.76**)	3139.0 (46.68**)	2111.0 (-14.93*)	3043.5 (9.52)	1612.5
IC 597880	3602.0 (19.51**)	2804.0 (10.96)	2654.0 (24.02**)	3206.0 (29.20**)	3324.5 (19.63**)	1718.5
IC 597875	2823.5 (-6.32)	2874.0 (13.73*)	3248.5 (51.80**)	2961.0 (19.32**)	2417.0 (-13.03*)	1673.0
EJ 22	2999.0 (-0.50)	2945.5 (16.56**)	3551.0 (65.93**)	2654.5 (6.97)	3157.0 (13.60*)	2111.0
DJ 65	2879.0 (-4.48)	3115.5 (23.29**)	2438.5 (12.30)	2743.0 (10.54)	3202.0 (15.22**)	2171.5
IM 170	2455.5 (-18.53**)	2944.5 (16.52**)	2672.5 (24.88**)	2632.0 (6.06)	3175.5 (14.27*)	2043.0
CN 105379	3289.0 (9.12)	2989.0 (13.05*)	3391.5 (28.27**)	3051.0 (15.41*)	3420.0 (23.07**)	2644.0
Mean seed yield of testers (kg/ha)	3014.0	2527.0	2140.0	2481.5	2779.0	2588.3

** and *, Significant at 0.01 and 0.05, respectively.