SELECTION OF SHORT DURATION HIGH YIELDING YELLOW SEEDED PROMISING LINES OF *Brassica rapa* FROM THE ADVANCED LINES OBTAINED THROUGH INTRASPECIFIC HYBRIDIZATION

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Extended Summary

An experiment was carried out in a Randomized Complete Block Design with twenty five F_7 lines of the 6 cross combinations of intraspecific crosses done among 6 parental materials of *Brassica rapa* along with four checks during the rabi season of 2009-10. The aim of the experiment was to select short durated high yielding yellow seeded promising lines from the advanced lines. BARI sarisha 6 and SS75 were the varieties used in crossing program because of their higher yield and yellow seed coat colour. Tori 7, BARI sarisha 9 and one F_6 lines were used as short durated rape seed germplasm with comparatively lower yield. Twenty five F_6 lines were evaluated those were selected from seven cross combinations of which 9 F_6 lines have been selected from BARI sarisha 6 × F_6, 6 from F_6 lines from BARI sarisha 9 ×BARI sarisha 6, 3 from F_6 lines from each of three cross combinations viz., BARI sarisha 6 × Tori 7, SS75 × Tori 7 and F_6 × BARI sarisha 9. However, only one F_6 line was selected from the cross combination- BARI sarisha 6 × Tori 7.

The highest average yield/plant of 13.68 g/plant in line 3 of the cross BARI sarisha 6 × Tori 7. The highest yield was mainly due to average 259.9 siliqua/plant with 16. 32 seed/siliqua having 0.35 g of 100 seed weight. Line 3 of the cross F_6 × BARI sarisha 9 produced on an average 12.57 g/plant yield with 269.9 siliqua/plant. Both of these lines produced higher yield than all the 3 checks used. Thirteen individual plants selected from 5 cross combinations produced higher yield/plant than all the checks (Table 1).

However, plant 3 of line 3 (L_3P_3) and L_4P_3 of the cross combination BARI sarisha 9 × F_6, L_5P_7 and L_6P_7 of the cross combination BARI sarisha 9 × BARI sarisha 6 produced higher yield/plant even than the highest yielding lines. Some selected plants that produced lower number siliqua / plant but produced good seed yield/ plant either due to higher number of seeds per siliqua or more seed weight. Some of the selected plants are very promising that can be used to increase the seed to carry out replicated multilocation trials. Some of the high yielding selected plant materials matured in quite short duration. Thus there is ample scope to select good materials for release.

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Table 1. Some of the selected plants from the 25 F_7 lines obtained through intraspecific hybridization

Crosses Line No.& Plant No.	No. of siliqua/ plant	No. of seed /siliqua	100 seed weight (g)	Yield/plant (g)
BARI Sarisha 9 x F6				
L1P2	245	13	0.29	10.98
L3P3	213	14.6	0.26	14.6
L4P3	353	11.4	0.30	15.5
L4P6	328	21.4	0.30	13.3
L5P7	132	20.2	0.40	13.2
L8P8	325	14	0.30	11.3
BARI Sarisha 9 x BARI Sarisha 6				
L5P7	285	14.6	0.49	13.8
L6P7	254	12.6	0.29	17.3
BARI Sarisha 6 x Tori 7				
L1P6	163	16.0	0.50	11.5
L2P10	275	20.4	0.30	12.2
F6 x BARI Sarisha 9				
L2P10	234	15.2	0.30	12.0
L3P10	246	20.8	0.40	12.5
SS 75 x Tori 7				
L1P3	160	20.8	0.30	12.4
L3P7	87	25.8	0.32	12.2
SAU Sarisha 1	173.4	24.8	0.56	10.01
Tori 7	196.1	20.96	0.29	9.0
SAU Sarisha 2	148.9	24.34	0.34	8.89
SAU Promising 3	150.9	22.08	0.31	10.98