

Mutant lines or varieties	Origin of the mutants	Grain yield t/ha	% as compared with check
DB 1	Xuan no.2/2765, 0.02% DMS	4.9	119
DB 2	" " "	5.8	138
DB 3	1623/Xuan no.2, 0.02% DMS	4.3	102
DB 4	IR 8/Xuan no.2, 0.02% DMS	5.6	133
DB 5	" " "	5.2	123
control	Xuan no.2/2765, no treatment	4.4	104
check	Xuan no.2 (yield check)	4.2	100

Resistance to major pests and diseases was maintained or improved:

Lines or varieties	Resistance to		
	Rice blast	BLB	BPH
DB 1 mutant	HR	HR	HR
DB 2 mutant	HR	HR	HR
DB 3 mutant	HR	HR	MS
DB 4 mutant	HR	HR	HR
DB 5 mutant	HR	HR	HR
CR 203 (BPH check)			HR
84-1 (BPH check)			HR
84-2 (BPH check)			HR
Xuan no.2 (yield check)	HR	R	HS

(Contributed by V.T. Hoang, N.T. Se, M.T. Mien and N.M. Don, Rice Breeding Division, Food Crops Research Institute, Tu Loc, Hai Hung, Vietnam).



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Induced dwarf mutant of lentil, RPL-1

Seeds of LL-78 variety of lentil were irradiated with 5, 10, 15, 20 krad of gamma rays. In M₂ from 20 krad treatment, a plant with dwarf stature was obtained. Its height was 16 cm, the parent plant 42 cm. In M₃ (1985-86 winter season) 23 plants could be grouped into two classes. Sixteen plants were shorter than 10 cm (dwarf) and seven were between 20 and 30 cm (semi-dwarf). Dwarf plant bred true in M₄ but semi-dwarf segregated in the ratio of 1 dwarf: 1 semi-dwarf.

This dwarf mutant line, RPL-1 is the dwarfest genotype of lentil so far known. It may be useful in lentil breeding to evolve high yielding dwarf varieties suitable for areas where lentil plants lodge due to excessive vegetative growth.

(Contributed by R.P. Sinha, Tirhut College of Agriculture, Dholi, Muzaffarpur, Bihar, India).

Serrated leaf mutant in mungbean (*Vigna radiata* (L) Wilczek)

Dry dormant seeds of mungbean (*Vigna radiata* (L) Wilczek) were treated with gamma rays (15, 30 and 60 kR).

The serrated leaf mutation was noticed in M₂ of cultivar Pak 32 treated with 60 kR. Cf 14 plants, 3 showed the altered leaf structure and the others were normal. The feature of this mutant was the deep serration of leaflet margins. The mutant had large thick leaflets with prominent venation. The mutant bred true in the M₃ and successive generation.



Details of the morphological characteristics of the mutant are presented in the the Table.

Table: Mean values of characters of parent and the induced serrated leaf mutant of mungbean

Characters	Parent	Mutant
Days to flower	51	57
Days to mature	85	90
Plant height (cm)	71	62
No. of pods per plant	27.4	32.5
Length of the pod (cm)	7.2	7.1
No. of seeds per pod	11.6	8.1
Thousand seed weight (g)	29.6	46.5
Length of the 6th leaflet (cm)	10.5	12.6
Breadth of the 6th leaflet (cm)	11.6	15.6
No. of branches	2.1	2.7
No. of pod clusters	10.5	11.5
Seed colour/surface	Green/Glossy	Yellowish green/glossy
Seed yield per plant (g)	7.6	6.4
Seed protein (%)	22.4	25.6
Pollen fertility (%)	96.7	88.2

(Range 46-95%)

The mutant exhibited slower growth particularly during the early stages of development, flowered later and attained shorter height. There was an increase in the number of pods, in seed weight and in seed protein content, but number of seed per pod was considerably reduced. The seed coat colour showed a change from green to yellowish green. In the mutant's flowers the stamina were placed much below the stigma level and the stigma sometimes protruded the corolla. Outcrossing of 4% recorded in some of the mutant lines revealed a reduced cleistogamy. The low number of seeds per pod in the mutant could be due to reduced pollen fertility.

The mutant behaved as monogenic recessive. The symbols SL/sl are proposed for this allelic pair. The mutant may have use as a green manure crop because of its large foliage and for the breeders as a genetic marker.

(Contributed by I.A. Malik, Ghulam Sarwar Yousaf Ali and M. Saleem, Division of Mutation Breeding, Nuclear Institute for Agriculture and Biology, Faisalabad, Pakistan).

Biochemical characteristics of mutant lines of currant tomato

The currant tomato is used in breeding for fruit quality. It contains up to 50 mg% ascorbic acid, a large quantity of sugar and 8-10% of dry matter. The weight of the fruit, however, does not exceed 1.2-1.5 g. The plants have long, spreading and very branchy stems.

Gamma ray induced mutants of currant tomato were used, as initial material in breeding for of fruit quality in varieties suitable for mechanized harvesting. The research was carried out mainly at the Department of Vegetable Growing Ukrainian Scientific Research Institute of Irrigation Farming. The regional variety "Lebyazhinskij" (suitable for mechanized harvesting) was adopted as the standard. Its fruits contain: 5.6% dry matter, 2.7% sugars, 0.543% titrated acidity, 26.6 mg/100 g ascorbic acid, 0.425 mg% carotene and 0.35% cellulose.

