

L 552 : A NEW BOLD SEEDED VARIETY OF KABULI GRAM

Chickpea (*Cicer arietinum* L.) is an important pulse crop grown during *rabi* season in Punjab state. Major objective in breeding of *kabuli* gram is development of high yielding and bold seeded varieties as they fetch higher price in the market. The efforts lead to the development of a new variety of *kabuli* gram L 552 from the cross GLK 95091 x PBG 68 through pedigree method of selection. This new variety has been recommended during 2011 for general cultivation in irrigated areas of Punjab state except sub-mountainous regions.

Distinguishing features

The new variety flowers in 89 days and matures in 157 days. Its average plant height is 71 cm. It bears on an average 59 pods per plant. The most important trait is seed size and it has bold seeds with 100-seed weight of 33.6 g.

Yield performance

On the basis of 14 research trials conducted in the state during 2005-06 to 2009-10, the new variety recorded an average yield of 2430 kg/ha against 2099 kg/ha of check BG 1053 with per cent increase of 15.8 (Table 1). However, overall on the basis of 64 trials including research and adaptive trials, L 552 gave an average yield of 1835 kg/ha against 1674 kg/ha of check BG 1053 with 9.6 per cent increase.

Reaction to diseases and insect-pests

The new variety recorded low wilt incidence (6.8%) as compared to check BG 1053 (18.5%). The new variety has shown susceptible reaction to Ascochyta blight and grey mould and it is comparable to check BG 1053 (Table 2).

Table 1. Overall yield performance (kg/ha) oikabuli chickpea variety L 552 against BG1053

Name of trials	No. of trials	L552	BG 1053	% increase over check
Research trials (2005-06 to 2009-10)	14	2430	2099	15.8
Adaptive trials by Directorate of Extension Education, PAU (2009-10)	37	1630	1540	5.8
Adaptive trials by Department of Agriculture, Punjab (2009-10)	13	1780	1600	11.3
Overall Mean	64	1835	1674	9.6

Table 2. Incidence of diseases and insect pests in kabuli chickpea variety L 552 and BG1053 (Mean of 3 years)

Year	Variety	
	L552	BG 1053 (ch.)
Ascochyta blight (1-9 Scale)*	8.6	8.3
Gray mold (1-9 Scale)*	9.0	8.8
Wilt (%)	6.8	18.5
Pod borer damage (%)	20.0	24.6
PRSR	4.5	5.3

*1-3=Resistant; 3.1-5.0=Moderately resistant; 5.1-7.0= Moderately susceptible; 7.1- 9.0=Susceptible

** PRSR: Pest resistance susceptibility rating.

Table 3. Quality parameters of L 552 and BG 1053

Sr.No.	Characteristics	L 552	BG 1053
1.	Hard seeds (kokru)	0	0
2.	Water absorption (%) after cooking	115.33	113.77
3.	Volume expansion (%) after cooking	111.13	82.00
4.	Solid dispersion (%) after cooking	25.35	22.10
5.	Protein (%)	22.95	23.54

*1-3=Resistant; 3.1-5.0=Moderately resistant; 5.1-7.0= Moderately susceptible; 7.1- 9.0=Susceptible

** PRSR: Pest resistance susceptibility rating.

The new variety is more tolerant to pod borer (PRSR 4.50) than the check BG 1053 (PRSR 5.30).

Quality parameters

The new variety has more water absorption, volume expansion and solid dispersion after cooking than the check BG 1053. Hard grains (*kokru*) are absent in the new variety (Table 3).

Symbiotic features

The new variety has slightly better nitrogen fixing ability than the check variety. The new variety L 552, on an average of four years (2006-07 to 2009-10) produced 30.9 nodules per plant against 26.9 in the check variety BG 1053. The dry weight of nodules per plant was also higher in new variety i.e. 116.1 mg against 99.6 mg of BG 1053. Leghaemoglobin content of new variety is 4.22 mg/g of nodules as compared to 3.87 mg of check variety BG 1053

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