

CS 56 (CS 234-2): A new variety of Indian Mustard (*Brassica juncea* L. Czern & Coss) for late sown irrigated conditions of Zone II

A new variety of Indian mustard, CS 56 has been developed by the scientists of Central Soil Salinity Research Institute (CSSRI), Karnal for late sown irrigated conditions in the country. Presently there are 65 varieties of Indian mustard released in the country. Amongst the different varieties of Indian mustard, released for various agro-climatic conditions in the country, Kranti, Vardan and Ashirwad are specific for late sown irrigated conditions. Earlier, CSSRI has released two salt tolerant varieties of Indian mustard namely CS 52 and CS 54 to be grown in salt affected areas of the country. The latest variety CS 56 has been specifically developed for salt tolerance and late sown irrigated conditions as the farmers get late for the sowing of mustard after taking Basmati crop. This variety was developed by the combined research efforts of Dr T.S. Sinha (Principal Scientist, now retired), Dr P.C. Sharma (Principal Scientist) and Dr Gurbachan Singh, the Director of the institute. This variety has been identified for release for late sown irrigated conditions of Zone II during XIV Annual AICRP (Rapeseed and Mustard) Group Meeting held at Sher-e-Kashmir University of Science and Technology, Jammu, during August, 2007, in which more than 150 scientists participated. Seven centers of All India Coordinated Research Project on Rapeseed Mustard viz. Sriganaganagar, Bathinda, Ludhiana, Hisar, Bawal, Navgaon and Delhi comprises Zone II of the country with respect to rapeseed and mustard cultivation. According to team members Dr T.S. Sinha, Dr P.C. Sharma and Dr Gurbachan Singh, CS 56 was identified for late sown irrigated conditions on the basis of superior performance over nationally adopted high yielding checks continuously for three years over 12 locations with respect to seed and oil yield. Its overall mean seed yield over 12 locations in three years was 1283 kg/ha which was nearly 15, 57 and 17% higher over the National Checks Vardan, Varuna and Kranti respectively. The oil yield of CS 234-2 was 465 kg/ka over 12 locations in 3 years, which was higher by 12, 52 and 15% over the three National Check varieties Vardan, Varuna and Kranti respectively. Further, the mean 1000 seed weight of this variety CS 56 over 12 locations was 3.44 g which was 12, 49 and 25% higher than National Checks Varuna, Vardan and Kranti respectively. This variety can be sown after the normal sowing time upto 15th November.



Performance of CS 234-2 under late sown irrigated conditions

Dr P.C. Sharma (Principal Scientist) and Dr Gurbachan Singh, Director of the institute informed that this variety also showed superior performance with regard to aphid infestation compared to other advance breeding lines during the trail conducted for two years 2005-06 and 2006-07. The important characteristics of CS 234-2 are mentioned below.

	Description of variety	Range	Mean \pm S.E.
i	Days to flowering (50% flowering)	44 – 50 days	47 \pm 2.5 days
ii	Days to maturity and maturity group (Short, medium or late)	124 – 140 days medium	132 \pm 4.0 days
iii	Plant height (cm)	195 – 210 cm	202 \pm 6.5 cm
iv	Number of primary branches	4 - 8	6 \pm 1.5
v	Number of secondary branches	8 - 17	13.0 \pm 3.0
vi	Main raceme length (cm)	72 – 100 cm	86 \pm 4.5 cm
vii	Number of siliquae on main raceme	45 - 55	50 \pm 3.0
viii	Siliqua length (cm)	4.2 – 5.0	4.5 \pm 0.5 cm
ix	Number of seeds per siliquae	12 - 18	13.8 \pm 1.5
x	1000 seed weight	4.2 – 4.8 g	4.4 \pm 0.2 g
xi	Seed yield range (kg/ha)	1170 – 1423 kg/ha	1283 \pm 45 kg/ha
xii	Oil content (%)	43.2 – 39.7 %	37.4 \pm 1.7 %

Further, this variety was also evaluated for salinity and alkalinity tolerance. The mean seed yield of this entry over 5 locations was 2152 kg/ha which was 18, 5 and 22% higher over mean seed yield of National Checks Varuna, Kranti and Salt tolerant Check CS 52 respectively. The oil content was also at par with checks Varuna and Kranti. The mean Na/K content in shoots at harvest stage was lower in this variety CS 56 (1.95 mg/g dry wt) compared to salt tolerant check CS 54 (2.70 mg/g dry wt). The toxic ion accumulation in salt tolerant check CS 54 was 38% higher compared to CS 56.

