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Bidhan Sadabahar: A bushy cowpea variety resistant to cowpea aphid borne mosaic virus

Bidhan Sadabahar, a bushy, early maturing, high yielding variety, having resistance to cowpea aphid borne mosaic (CABM) virus (both under field and sap transmission), and field resistance to pod borer, has been developed through hybridization followed by selection from a cross between Bidhan Barbati 1 and Kashi Kanchan by Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal. This variety has been released by the State Variety Release Committee, West Bengal and notified by the Central Variety Release Committee for State release during 2019. Pods are pulpy, meaty and soft with less fibre. The variety can be fitted well in multiple cropping system, and can perform well in eastern parts of India apart from West Bengal.

THE variety Bidhan Sadabahar has been developed through hybridization followed by selection from a cross between Bidhan Barbati 1 and Kashi Kanchan. Bidhan Sadabahar is a determinate, early maturing (within 45 days after sowing) variety and it can grow up to 75 cm height. Pod shape is round with dark green colour and slightly curved. Average pod length, pod diameter and pod weight is 26.00 cm, 0.95 cm and 11.00 g respectively. Pods are more pulpy, meaty and soft with less fibrous, and pod contains 4.2% protein. The variety is resistant against cowpea aphid borne mosaic virus disease and field resistant against pod borer. Bidhan Sadabahar is recommended for three major seasons (*Pre-kharif*, *kharif* and autumn-winter) under irrigated/rainfed conditions. First harvest can be done within 45 days from the date of sowing. However, the periodic harvest can be continued up to 85 days. The average pod yield of this variety is 113.24 q/ha.

Cultivation

This variety grows under all kinds of soil but well drained sandy loam soil rich in organic matter is ideal for its cultivation. Prepare the land well in advance with repeated ploughings to a fine tilth. Remove all stubbles, weeds, etc. and level the land. Add well rotten organic manure preferably farm yard manure or compost @ 10-15 t/ha during final land preparation. Seeds can be sown in three major seasons (*pre-kharif*, *kharif* and autumn-winter) under irrigated/rainfed conditions. Seed treatment should be done by captan or thiram @ 3.0 g per kg of seeds before sowing. Thirty (30) kg seeds are sufficient to sow in one hectare area. Seeds are to be sown at 60 × 45 cm spacing.

Fertilizer doses

Cowpea is a leguminous crop which can fix atmospheric nitrogen; hence nitrogen requirement is lesser than other vegetable crops. The optimum fertilizer dose is 25:60:40 kg N:P_2O_5:K_2O/ha along with 10-15 t/ha FYM. All fertilizers are to be applied as basal during final field preparation.

Plant canopy of Bidhan Sadabahar (BCCP-3)

Aftercare

At the initial stages of weed growth, shallow hand weeding and hoeing are sufficient to check the weed growth. Pre-sowing application of fluchloralin @ 2 l/ha checks weed growth for 20-25 days. Cowpea is a deep rooted crop and requires comparatively less moisture for its growth and development. The crop must be irrigated during its most critical stages i.e. flowering and pod development stages. Irrigate regularly at 7-10 days interval during dry periods to get high yields particularly during spring-summer and early autumn season.

Plant protection measures

Cowpea is attacked by several diseases and insects-pests. Although Bidhan Sadabahar is resistant against cowpea aphid borne mosaic virus disease (both under field and sap transmission) and field resistant against pod borer (Table 1), some control measures are to be taken for getting higher yield and quality product. Spray the crop thrice with systemic fungicide like carbendazim or tridemorph @ 0.1% at weekly interval to check powdery mildew. Spray the crop with 0.1% hexaconazole or 0.2% chlorothalonil at 10 days interval to check anthracnose. Spraying the crop with carbendazim (1 g) + mancozeb 2 g/l or captan @ 2.5 g/l along with sticker to check ashy stem blight. Spray with 0.01% streptocycline + 0.2% copper oxychloride to check bacterial blight. Alternate spray the crop with spinosad (0.15 ml/l) or flubendiamide @ 0.05% to check pod borer. Spray with Nuvacron 0.15% twice at weekly interval from the time of complete seed germination to check stem fly.

Table 1. Reactions against diseases and insect-pests at different agro-climatic conditions of West Bengal

Variety	Cowpea aphid borne mosaic disease severity (%)	Pod borer infestation (%)
Bidhan Sadabahar	9.17 (R)	0.63 (R) (8.50)

R, Resistant; Variety is categorized as per standard rating scales.

Table 2. Mean pod yield (q/ha) of Bidhan Sadabahar over State and National trials

Mean yield of State trials (q/ha) over three agro-climatic conditions (2010-11 to 2012-13)	Yield of National trials (q/ha)			Mean yield of National trials (q/ha)	Average yield (q/ha)
	IET (2008-09)	AVT-I (2009-10)	AVT-II (2010-11)		
135.92	85.13	88.79	92.83	**90.57**	**113.24**

Pods of Bidhan Sadabahar

Harvesting

Harvest the pods periodically by hand picking when they are fully grown, succulent and have not become more fibrous (10-12 days maturity after anthesis). Normally, harvesting starts 50-55 days after sowing in bushy cultivar. In bush types harvesting is completed by 5-6 pickings of tender pods. Based on State and National trials over three years, the average green pod yield of Bidhan Sadabahar is 113.24 q/ha (Table 2).

For further interaction, please write to:
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