

# Productivity and profitability of blackgram varieties in front line demonstration

K. MAHANDRAKUMAR, K. SUJATHA AND S. KUMAR

Accepted : April, 2009

## SUMMARY

Front line demonstration was conducted to identify the productivity and profitability of blackgram varieties along with local varieties. The variety VBN 3 performed well in Madurai district and fetched better market price than local and gave additional profit of Rs. 2000/ ha for additional seed cost of Rs.250/ha

**Key words :** Blackgram, Productivity and Profitability

In TamilNadu blackgram is cultivated in an area of 1.97 lakhs hectare with the production of 78.6 lakh tonnes and productivity of 400 kg/ha. For the last two decades the area as well as productivity had declined. Non adoption of improved varieties, poor management practices, low yield potential of varieties and the cultivation restricted to the rainfed area are the major constrain factors attributed for the lower productivity.

Availability of short duration blackgram varieties with high yield potential and the possibility of raising them all through the year, offers now immense scope to increase the productivity. Hence, ever since the establishment of KVK, Madurai (2004), Front line demonstration on varietal performance of blackgram was conducted.

## MATERIALS AND METHODS

Front line demonstration was conducted in an area of 5 ha in 12 farmers field at rainfed area of Madurai district namely, Thirumangalam and Kallikudi block during 2008 to find out the performance of blackgram variety such as VBN 3 with local variety. Line sowing was taken up during last week of August with the spacing of 30 x 15 cm along with recommended dose of fertilizer and usual cultivation practices.

Observations recorded were plant height (cm), number of pods, number of grain / pod, single plant grain yield, (g), 100 grain weight (g) and grain yield kg /ha. Correlation coefficient was worked out as per the methods suggested by Johnson *et al.* (1955).

## RESULTS AND DISCUSSION

From the Table 1 it could be observed that local varieties were having maximum height (38.37 cm) than the improved varieties such as VBN 3 (34.8 cm). Among the varieties, VBN 3 produced more number of pods/plant (20.0), grains/plant (5.29) and single plant grain yield /plant (4.18g) compared to local variety. However, in VBN 3, 100 grain weight was same when compared with local (3.95 g). In spite of having minimum plant height (34.8) VBN 3 performed maximum productivity of 805 kg/ha than local (706 kg/ha). Further analysis revealed that plant height was significantly having negative relationship with productivity. On the other hand rest of the yield parameters such as total number of pods, number of grains/pod, single plant grain yield (g) had positive relationship with the productivity.

From the Table 2 it could be observed that cost of cultivation of improved varieties such as VBN 3 (Rs. 8250 / ha) was slightly more than the local (Rs. 8000/ha) due to investment on seed cost. The slight differences in seed cost has resulted in 14.0 % increase of grain yield in VBN3. Hence, gross return of Rs. 16098/ ha and additional profit of Rs.2000/ ha were obtained in VBN 3 than the local varieties. The cost benefit ratio of VBN 3 (1: 1: 95) was significantly higher than the local (1: 1.76). Further analysis revealed that the additional cost of cultivation had significant positive relationship with gross return and profit and hence, the additional seed cost beared by the farmers to get maximum gross return and profit.

It can be concluded that, VBN 3 performed well in Madurai district than local. Moreover, the, size of the seeds are bold in improved varieties and fetched better market price than local. An additional investment on seed cost of Rs. 250/- on VBN 3 varieties gave a net profit of Rs. 1982/-. Hence, VBN 3 can be promoted further through state department of Agriculture in Madurai district.

### Correspondence to:

**K. MAHANDRAKUMAR**, Krishivigyan Kendra, Agricultural College and Research Institute, MADURAI (T.N.) INDIA

### Authors' affiliations:

**K. SUJATHA AND S. KUMAR**, Krishivigyan Kendra, Agricultural College and Research Institute, MADURAI (T.N.) INDIA

**Table 1 : Productivity of blackgram VBN 3 in front line demonstration**

Sr. No.	Plant height (cm)		Total no. of pods		No. of grains/pod (g)		Single plant grain yield (g)		100 grain weight (g)		Grain yield (kg/ha)	
	VBN 3	Local	VBN3	Local	VBN3	Local	VBN3	Local	VBN3	Local	VBN3	Local
1.	30.5	44	20	18	5.6	4.8	4.11	3.2	3.8	3.6	800	590
2.	33.6	40	19	20	5.4	4.5	3.96	3.55	3.9	3.95	794	650
3.	32	41	19	20	5.2	4.6	4.18	3.55	4.2	3.85	820	700
4.	36.5	39	21	18	5.2	5.2	4.25	3.75	3.9	4	840	720
5.	37.5	38	20	20	5.0	5.0	4.14	4.00	4.0	3.9	790	790
6.	35.5	34	21	19	5.2	5.2	4.2	4.00	3.9	4	790	760
7.	37	42	22	20	5.0	5.0	4.3	4.20	3.95	4.2	810	810
8.	36.5	39	21	16	5.2	5.0	4.35	3.20	3.85	3.9	830	650
9.	35	36	19	17	5.3	4.8	4.3	3.60	4.2	4.2	810	750
10.	37.5	36	18	18	5.8	4.8	3.96	3.55	3.8	3.9	780	690
11.	32	38	21	18	5.4	4.8	4.4	3.75	3.8	4	820	750
12.	34.5	33.5	19	19	5.2	5.0	4.05	3.85	4.1	3.9	775	610
Mean value	34.8	38.375	20	18.583	5.29	4.89	4.1833	3.68	3.95	3.95	805	706
Over all mean	36.66		19.29		5.09		3.93		3.95		755.3	
S.D.±	3.2		1.4		0.29		0.34		0.14		71.46	
r' -value	-0.453*		0.536**		0.563**		0.871 **		0.356**		1	

\* and \*\* indicates significant of values at P=0.05 and 0.01, respectively

**Table 2 : Profitability of blackgram VBN 3 in front line demostration**

Sr. No.	Grain yield kg/ha		% increase	Cost of cultivation (Rs)		Gross return (Rs)		Profit (Rs)		C:B ratio	
	VBN3	Local		VBN3	Local	VBN3	Local	VBN3	Local	VBN3	local
1.	800	590	35.59	8100	7800	16000	11800	7900	4000	1.98	1.51
2.	794	650	22.15	8200	8100	15880	13000	7680	4900	1.94	1.6
3.	820	700	17.14	8200	8000	16400	14000	8100	6000	2	1.75
4.	840	720	16.66	8300	7900	16800	14400	8600	6500	2.05	1.82
5.	790	790	0	8500	8300	15800	15800	7300	7500	1.86	1.9
6.	790	760	3.94	8100	8000	15800	15200	7700	7200	1.95	1.9
7.	810	810	0	8350	8000	16200	16200	7850	8200	1.94	2
8.	830	650	27.69	8150	7900	16600	13000	8400	5100	2.03	1.65
9.	810	750	8.0	8300	8300	16200	15000	7900	6700	1.95	1.81
10.	780	690	13.04	8350	8100	15600	13800	7300	5700	1.87	1.7
11.	820	750	9.33	8150	7600	16400	15000	8250	7400	2.01	1.97
12.	775	610	27.04	8300	8000	15500	12200	7200	4200	1.86	1.52
Mean value	805	706	14.02	8250	8000	16098	14117	7848	6117	1.95	1.76
Over all mean	-		-	8125		1507		6982		-	
S.D. ±	-		-	203.7		1429.3		1326		-	
r value				1		0.547**		0.435*			

\* and \*\* indicates Significant of values at P=0.05 and 0.01, respectively

## REFERENCES

Jonsonn, H.W., Robinson, H.F. and Comstock, R.K. (1955).  
Estimates of genetic and environmental variability in  
soybean. *Agron. J.*, **47**: 314-318.

\*\*\*\*\*  
\*\*\*\*\*