



Short Note

Screening of Lima Beans (*Phaseolus lunatus*) for Rainfed Cultivation in High Altitude and Tribal Zone of Andhra Pradesh

K.M. Yuvaraj* and M. Mutyal Naidu

Regional Agricultural Research Station,
Chintapalle-531 111, Visakhapatnam

Seven accessions and two improved varieties of lima beans were studied for two years at Regional Agricultural Research Station, Chintapalle to test their suitability for the high altitude and tribal zone of Andhra Pradesh. The variety T₂ and Acc.No. 6 performed better over the other accession numbers during both the years of study. The variety T₂ and Acc.No. 6 had the maximum no. of pods / plant and no. of seeds / pod which were followed by RNLB-1. The yield of T₂ and Acc.No. recording a mean yield of 13.66q/ha and 13.04q/ha respectively were identified as suitable varieties for rainfed cultivation in high altitude and tribal zone of Andhra Pradesh.

Key words: Lima beans, high altitude, rainfed

Lima beans or butter beans (*Phaseolus lunatus* Linn.) is an important leguminous vegetable crop grown for its edible bold seeds. These smooth, flat shaped, sweet tasting beans have a rich starch, meaty texture and a creamy distinctive flavor. Lima beans are a good source of B vitamins, protein, fibre, iron, potassium and magnesium and they have a very little fat. It also contains the phytochemicals coumestrol and saponin compounds that may impart anticancer benefits. It is one of the most popular shell beans commercially grown under rainfed conditions in the agency areas of Visakhapatnam district of Andhra Pradesh. However, due to lack of knowledge the tribal farmers grow only local cultivars, that too without proper fertilization leading to poor harvest. Literature pertaining to varietal screening to identify a suitable variety for this tract is very scanty. Hence an investigation was under taken to study the performance of some accessions and improved varieties for their yield potential and other yield attributing characters to find out the suitable one for commercial cultivation in this region.

Materials and Methods

Field experiments were conducted at Regional Agricultural Research Station, Chintapalle, Visakhapatnam district of Andhra Pradesh which is located in high altitude and tribal (HAT) zone of Andhra Pradesh. The experiment was conducted during *khariif* 2003 and 2004 in a Randomized Block Design with seven accession numbers and two improved varieties and replicated thrice.

The distance between rows and plants were 2m x 2m respectively. A fertilizer dose of 90 kg of each of NPK was given as basal dose along with 15 t of FYM per ha. Besides 45 kg each of NPK per ha was given as top dressing 45 days after sowing. The other cultural operations followed were in conformity with the local practices. Observations were recorded on yield and its attributes.

Results and Discussion

The data (Table 1) revealed significant differences among accession numbers and varieties for all characters studied during both

*Corresponding author

Table 1. Screening of butter bean genotypes suitable for High altitude and Tribal area of Andhra Pradesh

Genotypes & Varieties	No. of pods / plant			No. of seeds / pod			Test weight of 100 seed (g)			Yield (q/ha)		
	2003	2004	Mean	2003	2004	Mean	2003	2004	Mean	2003	2004	Mean
Acc No.1	341.6	316.6	329.1	2.87	3.0	2.93	44.00	51	47.5	5.53	2.72	4.12
Acc No.2	196.0	135.8	165.9	3.27	5.0	4.13	40.00	50	45.0	4.67	5.25	4.96
Acc No.3	255.0	281.8	268.4	3.03	2.8	2.91	43.00	56	49.5	3.83	2.75	3.29
Acc No.4	290.0	343.0	316.5	3.20	3.0	3.1	43.00	48	45.5	4.67	2.77	3.72
Acc No.5	295.0	335.0	315.0	3.00	3.0	3.0	50.00	56.6	53.30	7.33	8.45	7.89
T2	436.6	614.0	525.3	3.33	2.6	2.96	51.33	52.6	51.96	14.33	13.0	13.66
RNLB-1	326.3	363.0	344.65	3.03	2.6	2.81	42.00	61.00	51.5	12.33	11.70	12.01
Acc No.6	324.3	302.0	313.15	2.83	3.2	3.01	38.33	54.00	46.16	8.33	8.25	8.29
Acc No.7	366.6	384.0	375.3	3.20	2.6	2.90	45.00	39.00	42.0	13.33	12.75	13.04
S.Em ±	2.02	0.79		0.08	0.16		1.32	0.95		0.29	3.14	
CD at 5%	6.06	2.37		0.24	0.23		3.95	2.84		0.88	9.42	

the years. The variety T₂ was found superior to the over local germplasm. Among the accession numbers accession number 6 recorded the highest yield (13.04 q/ha) followed by RNLBI (12.0 q/ha). The T₂ and accession number 6 butter beans performed superior to the other accession numbers regarding to no. of pods / plot, no. of seeds/ pod, test weight of seed and yield as shown in Table (1). The results are in conformity with Soorianatha Sundram *et al.* (1992).

Keeping in view the yield potential and consistent performance of T₂ and accession number 6 it was concluded to popularize these

two varieties for large scale cultivation in agency areas of Visakhapatnam district of Andhra Pradesh.

Reference

- Summerfield, R.J. and Roberts E. H.1985. *Phaseolus lunatus* in CRC Handbook of Flowering Vol.1 (Ed.) AH Halvey. CRC Press, Florida, 134-137.
- Soorianatha Sundaram, K., Nambisan, K.M., Sambandamoorthi, S. and Duraira, C. 1992. Evaluation of butter bean (*Phaseolus lunatus* Linn.) culture S 13. *South Indian Horticulture*, **40**: 105-108.

Manuscript number : 153/08
Date of receipt : August 6, 2008
Date of acceptance : June 8, 2009