

A Comparative Study of Dipping and Broadcasting of Rice Fallow Blackgram (*Vigna mungo*) (L) Hepper.)

S. RAMASAMY¹ and S. RAMIAH²

A field study on the methods of sowing and pre-emergence application of Alachlor at 1.0 kg ai/ha at planting time of rice fallow Blackgram (*vigna mungo*) (L) Hepper) showed that dibbling the Co 4 blackgram seeds in lines immediately after harvest of Paddy gave 16 per cent increased grain yield over broadcasting the seeds in rice stubbles without any land preparation. Alachlor at 1.0 kg a.i./ha had no effect on weed control.

Nattribhop and Ferraris (1970) recorded significant yield differences in Blackgram by planting on ridges. Egrochenkov and Sigvta (1974) reported that soyabean grown on ridges gave an increased seed yield over flat bed which was ascribed to improve soil aeration, moisture, temperature, root development and nitrogen fixation. Subramanian (1978) reported that blackgram dibbled immediately after the harvest of rice in the stubbles, recorded profitable yield. Hence a study was undertaken to compare the efficacy of to dibbling as broadcasting of Co 4 blackgram in Rice fallows to results presented.

MATERIAL AND METHODS

Field experiments were conducted in the Tamil Nadu Agricultural University during summer and *kharif* 1978, to study the methods of sowing of rice fallow Co 4 blackgram with 0 and 1.0 kg

ai/ha of Alachlor. The study was carried out in a split plot design replicated four times. Two methods of sowing viz. broadcasting in rice stubbles and dibbling seeds in lines and two levels of Alachlor were taken up in four main plots. Five levels of foliar spray of three per cent DAP solution were in the sub-plots.

A harvested Paddy field previously spaced 20 x 10 cm was taken up for this study. The experiment was carried out immediately after the harvest of Paddy. Dibbling of seed was done with a spacing of 20 cm between rows and 10 cm between plants. Broadcasting was done with the same quantity of seeds by weight as used for dibbling. To test the efficacy of Alachlor at 1.0 kg ai/ha on weed control effect, the same was sprayed pre-emergence application in the harvested paddy field next day after dibbling of blackgram.

1. Research Associate, University Research Centre, Aduthurai.

2. Professor and Head, Kumaraperumal Farm Science Centre, Navelur Kuttapattu, Trichy-620 009.

RESULTS AND DISCUSSION

The results of the summer and *kharif* sown crops are presented in Table.

There was significant differences in number of plant population between the two methods. Dibbling enabled the germination to score 99 per cent and 96 per cent of population in summer and *kharif* season respectively, while in broadcasting 85 per cent and 86 per cent respectively in summer and *kharif* seasons was recorded to the total number of plants expected in 20 x 10cm spacing. Alachlor has no effect on the plant population of blackgram. Number of pods per plant was affected neither by methods of sowing nor by Alachlor application, while plant height was slightly increased by dibbling the seeds in stubbles in summer.

Between the two methods of sowing, dibbling the seed performed well in both the seasons. The higher plant density prevailed in dibbling had recorded 1147 and 516 kg/ha in the summer and *kharif* seasons respectively while broadcasting gave only 987 and 496 kg/ha. The grain yield obtained in summer was significantly higher than in *Kharif*. The grain yield in the case of dibbling was 16 and 14 per cent higher than the broadcasting in the summer and *kharif* seasons respectively. Dibbling the seeds in line with all other agronomic practices gave a net return of Rs. 3,394/ha than broadcasting the seeds (Rs. 2797/ha) imme-

diately after the harvest of rice crop. There was not much variation in the income between the herbicide treated (Rs. 2983/ha) and untreated (Rs. 3045/ha) one. The possible reasons for increased grain yield in dibbling were uniform germination and even stand of crop with higher number of population. Ojehomon and Bamiduro (1971) found that the increase in plant density resulted in higher yield of Co 4 blackgram. Alachlor had no effect on grain yield of blackgram, since at the dose tried its efficacy for weed control could not be seen.

REFERENCES

- EGROCHENKOV, A.E. and A.I. SIGUTA, 1974. Effect of ridges on growth and development of Soyabean. *Referativnyi Zhurnal* 10:55, 450 (Fld. crop Abstr. 28 : 3577, 1975)
- NATTRIBHOP, S. and FERRARIS 1970. Effect of ridge spacing, nitrogen application and number of rows planted per ridge on the yield of mung bean. In Thai Australian chaophya Research Project. Second report to the Ministry of the Kingdom of Thailand. Part B (Fld. Crop. Abstr. 26 : 6625, 1973)
- OJEHOMON, O.O. and T.A. BAMIDURO 1971. The effect of plant density and pattern of plant arrangement on Cowpea using parallel and systematic spacing design. *Nigerian agric. J.* 8 : 11—19.
- SUBRAMANIAN, A. 1978. Studies on the response of blackgram (*Vigna Mungo* (L.) Hepper) to phosphorous in different systems of cultivation Ph.D. Thesis. Tamil Nadu Agricultural University, Coimbatore-641002.

TABLE: Response of Co. 4 Blackgram to method of planting and pre-emergence application of alachlor under rice fallow conditions.

	Methods of planting				Alachlor kg ai/ha			
	Broad-casting	Dibbling	SE	CD (P=0.05)	0 kg	1.0 kg	SE	CD (P=0.05)
Summer 1978								
1. Plant population (percentage to 20x10 spacing)	85	99	3.5	11	93	92	3.5	N.S.
2. Number of pods per plant	17.43	17.90	0.26	N.S.	17.54	17.79	0.26	N.S.
3. Plant height (cm)	26.9	28.3	0.42	1.34	27.5	27.7	0.42	N.S.
4. Drymatter (kg/ha)	3256	3970	51.7	165	3491	3556	51.7	N.S.
5. Grain yield (kg/ha)	987	1147	25	81	1059	1074	25	N.S.
Kharif 1978								
1. Plant population	86	96	2.4	7.0	91	91	2.4	N.S.
2. Number of pods per plant	10.69	11.33	0.27	N.S.	10.98	11.04	0.27	N.S.
3. Plant height (cm)	20.0	20.5	0.24	N.S.	20.3	20.2	0.24	N.S.
4. Drymatter (kg/ha)	1962	2050	26.3	84	2002	2010	26.3	N.S.
5. Grain yield (kg/ha)	496	516	14	N.S.	505	507	14	N.S.