CHEMICAL WEED CONTROL IN BLACK GRAM
(Vigna mungo)

E.M. Balasubramaniam and
Nirmala Perarajasingam
Regional Research Centre, Kilinochchi.

Black gram is one of the important grain legumes of the dry zone. Farmers usually grow Black Gram as a rainfed crop. It is an important component of the human diet during the recorded history and still continue to serve as an important source of protein in developing countries like Sri Lanka. The total extent cultivated 27.133 hectares and the gross national production was 21.460 metric tons per year (1).

Since the crop is cultivated mainly under rainfed condition the yields are generally low. Further the poor land preparation and heavy weed infestation during the early stage of the crop reduces the yield considerably. The obtained under complete weed free condition was 875 Kg/ha while the plot infested with weeds upto harvest gave the yield of 560 Kg/ha (Yield reduction of 56%). R.R.C., Kilinochchi seasonal report Maha 1984/85. The most critical period for weed competition was 30-40 days after sowing. Weed free environment from early stage up to 40 days ensures higher grain yields.

Pre emergence application of herbicides were found to be effective for weed control in black gram (2). An experiment was conducted during 1985/86 Maha season at the Regional Research Centre, Kilinochchi to find a suitable, economic pre emergence herbicide for weed control in black gram Table 1.

Table I.

Treatments	Rate and time of application.	Yield in Kg/ha
1. Tribunil	1.05 kg ai/ha Pre emergence	390
2. Lasso	1.35 Kg ai/ha Pre emergence	734
3. Machette	1.20 Kg/ ai/ha Pre emergence	410
4. Hand weeding)	2nd and 4th week after emergence	610
5. Hand weeding)	2nd, 4th and 6th week after emergence	648
6. Unweeded control	- ---	291

The experiment revealed that application of lasso 4 1.35 Kg ai/Ha gave the highest yield of 734 Kg/ha. There was no phytotoxic symptoms observed due to the application of lasso. However the application of other two pre emergence herbicides namely Tribunil and Machete showed a reduction in stand and thus the yield was reduced. Treatments where hand weeding was practiced at 2nd, 4th and 6th week after emergence gave the yield of 648 Kg/ha.

Economics of weed management

Method of weed managt.	Cost of Herb/ha Rs.	Regd. Labr.	Cost of Labr.* Rs	Total cost Rs	Cross** Return Rs	Benefit cost
Herbicide (Lasso)	975/-	2 (Md) (Sp)	150/-	1125/-	11010/-	5.9
Hand weeding (3)times	-	86 (Md)	4300/-	4300/-	9720/-	1.2
Unweeded control	-	-	-	-	4365/-	

* Produce sold at Rs.15/- per kg. sp = Spraying Md = Man days/ha. Rs.50/- per Man day.

The economics of chemical and hand weeding methods showed that Lasso at 1.35 Kg ai/ha as pre emergence was economical for weed control ion black gram. The benefit cost ratio due to effective chemical weed control was 5.9 when compared to hand weeding it was 1.2.

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