

Integrated weed management in gram (*Cicer arietinum*)

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An investigation was carried out during the winter (*rabi*) season of 1992–93 on a clay soil at Agricultural College, APAU, Bapatla, to study the efficacy of different herbicides on the control of weeds in gram (*Cicer arietinum* L.) var. 'ICCV 10'. The experiment was laid out in randomized block design with 11 treatments (Table 1) and replicated thrice. The soil of the experimental field was clay with pH 7.8. It was

medium in available nitrogen (310 kg/ha), low in available phosphorus (P_2O_5 , 24 kg/ha) and rich in available potash (654 kg/ha).

The experimental field was dominant with *Cynodon dactylon* (L.) Pers. and *Cyperus rotundus* L., constituting about 51.2 and 40.5% respectively. Of the dicot. weeds, viz. *Trianthema protulacastrum* L., *Euphorbia hirta* L., *Croton bonplandianum* Baill., *Amaranthus viridis* L., *Abutilon indicum*

Table 1. Weed dry matter, weed-control efficiency and seed yield of gram as affected by different weed-control treatments

Treatment	Weed dry matter (g/m ²) at			Seed yield (kg/ha)
	30 days*	60 days*	Harvest	
Control	42.3	145.0	144.5	338
Weed-free	1.1	0.9	0.8	980
Pre-plant incorporation of fluchloralin @ 1.0 kg ai/ha	14.2	54.9	53.9	737
Pre-emergence application of alachlor @ 1.0 kg ai/ha	17.9	70.4	65.2	548
Pre-emergence application of isoproturon @ 1.0 kg ai/ha	22.3	88.6	86.5	477
Hand-weeding at 15 days*	13.4	70.1	67.2	454
Hand-weeding at 30 days*	40.3	49.1	48.4	550
Hand-weedings at 15, 30 days*	12.1	34.72	33.8	828
Pre-plant incorporation of fluchloralin @ 1.0 kg ai/ha + hand-weeding at 30 days*	15.3	24.1	23.6	883
Pre-emergence application of alachlor @ 1.0 kg ai/ha + hand weeding at 30 days*	17.7	45.1	44.9	652
Pre-emergence application of isoproturon 1.0 ai/ha + hand weeding at 30 days*	22.5	67.1	65.9	538
CD (P = 0.05)	6.17	16.0	18.3	96.7

*Days after sowing

(L.) and *Phyllanthus niruri* L., *Trianthema protulacastrum* L. constituted about 45% of the total dicots

Fluchloralin alone and fluchloralin + handweeding reduced the dry weight of weeds up to 57.8 and 83.7% respectively compared with the weedy check. (Table 1).

Highest grain yield (980 kg/ha) was recorded in weed-free treatment, followed by fluchloralin + hand-weeding (884 kg/ha) and hand weeding twice (828 kg/ha). The yield reduction in the weedy compared with check treatments of weed free fluchloralin + hand-weeding and hand-weeding twice was

65.5, 61.7 and 59.1%, respectively. This reduction in grain yield due to herbicides alone compared with integrated weed management system could be due to their lower persistence of herbicides in the soil, which resulted in reappearance of weeds at the later stages. These results support the findings of Kumar and Kolar (1988).

REFERENCE

- Kumar, K. and Singh Kolar, J. 1988. Relative performance of terbutryn methabenzthiazuron and pendimethalin for weed control in chick-pea. *Journal of Research, Punjab Agricultural University, Ludhiana* **25** : 534-538.

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Fibre yield of rainfed tossa jute (*Corchorus olitorius*) as affected by planting methods of preceding winter crops

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Tossa jute (*Corchorus olitorius* L.) is a main pre-rainy (*kharif*) crop under rainfed condition in West Bengal. Some *paira* or *utera* crops are grown in rice fallows without any tillage in winter for higher production (Das and Sarkar, 1990). As jute is a deep-rooted crop, there is a possibility of decreasing of fibre yield due to poor tillage, if it is grown after no-tillage relay crops (*paira*) like grasspea and lentil. But information on this aspect is not available. Hence

the experiment on jute was conducted after rainfed winter *paira* crops to evaluate the fibre-yield production at different stages of growth.

'JRO 524' jute was sown in plots under different planting methods (BAH, Broadcast seeds after harvest of rice; DSC, drilling seeds after conventional tillage, i.e. 4 ploughings; and DSM, drilling seeds after minimal tillage i.e. 2 ploughings) after different *paira* crops (grasspea, lentil and