



## Chickpea and weed management

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### INTRODUCTION

As chickpea is important pulse crop among the all pulses. Chickpea have highest area and production in India. Pulses have important property to improve soil fertility, so they acquire dominant place in cropping system and rich in protein, mineral and vitamin play vital role in human diet.

As per ICMD recommended dose of pulses per capita per day is 75 g but only 36 g is available for that increase production weed is major problem. One of major obstacles in growing chickpea successfully in their poor ability to compete with weeds. Crop losses of 90 per cent are possible situations (Knights, 1991) and the lack of registered post emergence herbicides for broadleaf weeds reduces the options for weed management (Wright *et al.*, 1995). Chickpea can grow in wide range of soil type it prefers the medium to clay (Knights, 1991). But excepting these there are number of difficulties associate with growing chickpea in India.

### Current weed control status and future scope :

Weed emergence with the *Rabi* sown chickpea crop creates a severe competition unless controlled timely and effectively. Inter-row cultivation is not sufficient and inter-row hand weeding is necessary under most conditions. There is, therefore, an urgent need to move from the costly manual mechanical weed control to chemical weed control (Marwat *et al.*, 2003).

Methods used to control weeds in various crops include manual, mechanical, cultural including crop rotations, crop competition, biological and chemical. The first two methods are common in the less developed farming systems while the last is dominant in the industrial Imazethpyr {2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]5-ethyl-3-pyridinecarboxylic acid} is an imidazolinone compound used as a selective herbicide to control most annual grasses and certain broadleaf weeds. This herbicide is applied as pre-plant incorporated, pre-emergence and early post emergence for control of annual and perennial grass and broad-leaf weeds in chickpea and other legume fields (Peterson *et al.*, 2001).

Bhutada and Bhale, 2013 observed that Pendimethaline 1 kg ha<sup>-1</sup>+1H at 40 DAS recorded highest yield in chemical treatment which is comparable with cultural weed control treatment 2H at 15 and 40 DAS +

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HW at 30DAS recorded highest grain yield and B:C ratio.

Seed and straw yields were recorded significantly higher under IC+HW at 20 and 40 DAS ( $W_4$ ) as compared to rest of the treatments barring treatments of oxadiargyl @ 0.075 kg ha<sup>-1</sup> ( $W_3$ ) and pendimethalin @ 0.75 kg ha<sup>-1</sup> ( $W_2$ ). Treatments of oxadiargyl @ 0.075 kg ha<sup>-1</sup> ( $W_3$ ) and pendimethalin @ 0.75 kg ha<sup>-1</sup> ( $W_2$ ), both being at par with fluchloralin @ 1.0 kg ha<sup>-1</sup> ( $W_1$ ), were significantly superior over weedy check ( $W_5$ ). Higher seed and straw yields under IC+HW at 20 and 40 DAS and oxadiargyl application may be due to the fact that effective control of weeds lead to direct increase in uptake of nutrient and thereby proper growth and development of crop which resulted in maximum number of pods plant<sup>-1</sup> and test weight ultimately resulting into increased seed yield (Patel *et al.*, 2006).

Rashid *et al.* (2009) stated that it can be concluded application only nutrients supply and plant protection measures are not enough to get higher yield unless weeds are not controlled under rainfed condition,

Mital and Singh (1984) reported that the application of weedicides help in controlling weeds population, increase in grain yields and net return. All the herbicides, except nitrofen gave more than 100 per cent higher yield of green gram than unweeded control but trifluralin and chloramben proved more promising. In clusterbean, alachlor, trifluralin and nitrofen proved effective in controlling weeds, giving a yield equal to that of the hand weeding.

Effective pre-planting and soil incorporated (PPI) herbicides include fluchloralin, oxyfluorfen, trifluralin and triallate. Those effective as pre-emergent herbicides are alachlor, chlorobromuron, cyanazine, dinoseb amine, methabenzthiazuron, metribuzin, pronamide, prometryne and terbutryne. Post-emergent herbicides included luazifop-butyl and fenoxprop-ethyl. Post-emergent applications need great care with respect to stage of growth and air temperature to avoid phytotoxicity, (Solh and Pal, 1993).

Above all discussion showing that different herbicide to control weed in chickpea play important role to increase yield. In Sacristy of labour herbicide in best alternative option now a days.

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