International Journal of Agricultural Sciences
Volume **10** | Issue 2 | June, 2014 | 695-699
e ISSN-0976-5670 | Visit us | *www.researchjournal.co.in*

RESEARCH PAPER

Influence of fluazifop-p-butyl on grassy weeds in groundnut (*Arachis hypogaea* L.) and its residual effect on succeeding crops

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Abstract : A field investigation was carried out on Vertisol soil of Main Oilseeds Research Station, Junagadh Agricultural University, Junagadh, during *Kharif* 2010 and 2011 to study the efficacy of post-emergence herbicides on *Kharif* groundnut and its residual effect on succeeding crops of wheat and gram. An experiment comprised of eight weed control treatments, *viz.*, fluazifop-p-butyl 13.4 EC @ 100, 134, 167 and 335 gha^{-1} as post-emergence, imazethapyr 10 per cent SL @125 gha^{-1}as post-emergence and pendamethalin 30 per cent EC @750 gha^{-1}as pre-emergence, two hand weeding at 30 and 45 DAS and unweeded check was conducted in Randomized Block Design with three replications. The field was infested with complex weed flora comprising both grassy (69 %) and as well as broad leaf weeds (31%). The grassy weeds *viz.*, *Echinochloa* spp., *Dinebra retroflexa* and *Brachiaria* spp. and broadleaf weeds like, *Indigofera glandulosa*, *Commelina benghalensis*, *Phyllanthus niruri*, *Euphorbia hirta*, *Digera arvensis* and *Tridax procumbens* were predominant. Results revealed that among the herbicidal treatments, fluazifop-p-butyl 13.4EC @ 167 g ha^{-1} at 20 DAS recorded significantly least number of grassy weeds and total dry weed matter with weed control efficiency (79.55%) and weed index (20.2%). The highest weed control efficiency (91.05%) was under hand weeding against grassy weeds at 60 DAS. An herbicidal treatment irrespective of its doses was not effective against broadleaf weeds. Shelling per cent, pod yield, haulm yield and kernel yield of groundnut were also superior in plots treated with fluazifop-p-butyl 13.4EC @ 167 g ha^{-1} at 20 DAS, except hand weeding treatment. Fluazifop-p-butyl 13.4 EC was found safe to groundnut and did not cause residual toxicity to succeeding crops.

Key Words : Groundnut, Weed density, Weeds control efficiency, Herbicides, Residual effect

View Point Article : Vaghasia, P.M. and Nadiyadhara, M.V. (2014). Influence of fluazifop-p-butyl on grassy weeds in groundnut (*Arachis hypogaea* L.) and its residual effect on succeeding crops. *Internat. J. agric. Sci.*, **10** (2): 695-699.

Article History : Received : 02.12.2013**; Revised :** 23.04.2014**; Accepted :** 05.05.2014

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