

## EFFECT OF HERBICIDES IN WHEAT AND THEIR RESIDUAL EFFECT ON THE PULSES CROPS

H.L. Yadav<sup>1\*</sup> and A.K. Gupta<sup>2</sup>

<sup>1</sup>Division of Agronomy, Rajasthan Agriculture Research Institute, Durgapura, Jaipur

<sup>2</sup>SKN College of Agriculture, Jobner, SKNAU, Jobner, Jaipur, Rajasthan

Email: [jadam1984@gmail.com](mailto:jadam1984@gmail.com)

Received-04.07.2021, Revised-15.07.2021, Accepted-24.07.2021

**Abstract:** The field experiment conducted at research farm, RARI, Durgapura for two consecutive years during *rabi* seasons 2013-14 and 2014-15. Results revealed that maximum reduction in weed density at 25 DAS was recorded with pendimethalin pre emergence @ 0.750 kg/ha and at 50 DAS with 2, 4-D ester @ 0.5 kg/ha, clodinafoppropargyl 15 % + metsulfuran methyl 1 % @ 64 g a.i./ha and metsulfuran methyl @ 4 g a.i./ha. All the weed control treatments produced significantly higher grain and straw yield compared to weedy check. Hand weeding, except weed free produced the maximum grain and straw yield of 46.40 and 56.20 q/ha and thus out yielded over rest of the treatment. Being at par with clodinafoppropargyl 15 % + metsulfuran methyl 1 % @ 64 g a.i. /ha and sulfosulfuran 75 % +metsulfuran methyl 5 WG @ 32 g a.i. /ha, application of clodinafoppropargyl 15 % +metsulfuran methyl 1 % @ 64 g a.i. /ha registered an increase of 32.6 and 35.1 per cent in grain and straw yield, respectively over weedy check and thus found as the next superior herbicidal treatment. Further, none of the applied herbicides/mixtures in *rabi* season (wheat) had residual toxicity on germination of predominant crops (pearlmillet, mungbean and clusterbean) grown in *kharif* season.

**Keywords:** Weed density, Herbicide mixture, Crop productivity, Wheat, Germination, Succeeding Crops

### REFERENCES

Agrawal, K.K. and Jain, K.K.(1998). Weed control studies in wheat. *World Weeds*.5:69-72.

Chopra, N. and Chopra, N.K.(2005). Bioefficacy of fenoxaprop, clodinafop, metribuzin alone and in combination against weed in wheat and their residual effect on succeeding crop. *Indian Journal of Weed Science* 37: 163-166.

Gomez, A.A. and Gomez, A.A.(1984). Statistical Procedures for Agricultural Research (2<sup>nd</sup>ed.). John Wiley and Sons. Singapore.

Kumar, Bhumesh, Mishra, J.S., Singh, V.P. and Sharma, A.R.(2016). Challenges of weed management under changing climate. pp 203-219 Invenkateswaluet al. (Eds) Climate Resilient Agronomy, *Indian Society of Agronomy*, New Delhi

Kumar, J., Kumar, A. and Sharma, B.C.(2010). Effect of chemical and crop establishment methods on weeds and yield of rice and their residual effect on succeeding wheat crop. *Indian Journal of Weed Science* 42 (1&2): 78-82.

Nadeem, M.A., Tanveer, A., Ali, A., Ayub, M.K. and Tahir, M.(2007). Effect of weed control practices and irrigation levels on weeds and yield of wheat (*Triticumaestivum*). *Indian Journal of Agronomy* 52 (1): 60-63.

Sardana, V., Walia, U.S. and Mahajan, G.(2001). Management of broad leaf weeds in wheat (*Triticumaestivum* L.). *Indian Journal of Weed Science* 33: 69-71.

Sharma, A.R., Bhullar, M.S., Singh, V. Pratap, Singh, Mandeep and Das, T.K.(2016). Harnessing

weed-fertilizer-water interactions for higher crop productivity and resource-use efficiency. *Indian Journal of Fertilizers*.12(11); 114-130.

Singh, J. and Singh, K.P.(2005). Effect of organic manures on yield and yield attributing characters of wheat. *Indian Journal of Agronomy* 50: 289-91.

Singh, P. and Ali, M.(2004). Efficacy of metsulfuron methyl on weeds and its residual effect on succeeding soybean crop grown on vertisols of Rajasthan. *Indian Journal of Weed Science* 36: 34-37.

Singh, R., Shyam, R., Singh, V.K., Kumar, J., Yadav, S.S. and Rathi, S.K.(2012). Evaluation of bioefficacy of clodinafop-propargyl + metsulfuron-methyl against weeds in wheat. *Indian Journal Weed Science* 44(2): pp 81-83.

Surin, S.S., Singh, M.K., Upasani, R.R., Thakur, R. and Pal, S.K.(2013). Weed management in rice (*Oryza sativa*)–wheat (*Triticumaestivum*) cropping system under conservation tillage. *Indian Journal of Agronomy* 58(3): 288- 291.

Vala, G.R.(2005). Efficacy of various herbicides and determination of their persistence through bioassay technique for summer Groundnut (*Arachishypogaea* L.). Ph.D. (Agri.) thesis submitted to Junagadh Agricultural University, Junagadh (Gujarat).

Yadav, A., Mehta, R., Punia, S. S., Hooda, V., Malik, R. R., Rana, V. and Brillinder, R. R.(2003). Residual effect of four sulfonylurea herbicides applied on wheat on succeeding crops in rotation. *Indian Journal of Weed Science* 35: 259-261.

\*Corresponding Author