RESEARCH ARTICLE

COMPARATIVE STUDY OF MIXED WEED FLORA IN WHEAT WITH APPLICATION OF HERBICIDES AND ITS RESIDUAL EFFECT ON THE MUNGBEAN CROPS

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Received-24.07.2021, Revised-19.08.2021, Accepted-28.08.2021

Abstract: The field experiment conducted at research farm, RARI, Durgapura for two consecutive years during *rabi* seasons 2013-14 and 2014-15. Results of revealed that highest weed control efficiencies of 89.4 per cent were recorded with hand weeding at harvest stage. It was closely followed by sulfosulfuran @ 25 gm a.i. /ha, clodinafop-propargyl 15 % + metsulfuran methyl 1 % @ 64 g a.i. /ha, sulfosulfuran 75 % + metsulfuran methyl 5 WG @ 32 g a.i. /ha, carfentrazone Ethyl 40 % DF @ 20 g a.i./ha, metsulfuran methyl @ 4 g a.i. / ha, 2,4-D ester @ 0.5 kg/ha and pendimethalin pre emergence treatments. N, P and K in grain and straw of wheat were significantly improved due to most of the weed control treatments over weedy check. Weed free, clodinafop propargyl 15 % + metsulfuran methyl 1 % @ 64 g a.i. /ha, sulfosulfuran 75 % + metsulfuran methyl 5 WG @ 32 g a.i. /ha and hand weeding were the superior treatments in this regarded. Further, none of the applied herbicides/mixtures in *rabi* season (wheat) had residual toxicity on effective nodules and total branches per plant of moongbean crop grown in *kharif* season.

Keywords: Herbicide mixture, Weed control efficiencies, Nutrient concentration, Effective nodule, Mungbean crop

REFERENCES

Anonymous (2015). Economic Survey, Government of India, Ministry of Finance and Company Affairs Economic Division. pp. S•16-S•18.

Anonymous (2015a). Commissionerate of Agriculture, Rajasthan, Jaipur.

Bhatia, R.K., Singh, V.P. and Amarjeet (2012). Effect of integrated nutrient management and weed control on yield and nutrient uptake by wheat and weeds.*Haryana Journal of Agronomy* **28** (1 & 2): 66-70.

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

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

Fakkar, A.A.O. and Amin, I.A. (2012). Integration between sowing methods and mechanical weed control and their effect on wheat productivity. *Australian Journal of Basic and Applied Science* **6**:519-529

Jackson, M.L. (1957). Soil chemical analysis. Prentice Hall of India Pvt. Ltd., New Delhi

Kanojia, Y. and Nepalia, V. (2006). Effect of chemical weed control on nutrient uptake by wheat and associated weeds.*Agricultural Science Digest***26**: 141-143.

Khokhar, A.K. and Nepalia, V. (2010). Effect of herbicides and nutrient management on weed flora, nutrient uptake and yield of wheat (*Triticumaestivum*) under irrigated conditions.*Indian Journal of Weed Science***42**: 14-18.

Kurchania, S.P., Bhalla, C.S. and Paradhkar, N.R. (2000). Bio-efficacy of metsulfuron-methyl and 2,4-D combinations for broad leaf weed control in wheat. *Indian Journal of Weed Science***32** (1&2): 67-69.

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, 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.

Singh, R.K., Verma, S.K., Sharma R. and Singh, S.B. (2009). Bio-efficacy and selectivity of sulfosulfuron and metribuzin before and after irrigation in wheat (*Triticumaestivum*) under zero-tillage system.*Indian Journal of Agricultural Sciences***79**:735.

Snell, F.D. and Snell, G.T. (1949). Colorimetric methods of analysis.3rd Edn. II D Van Nostrand Co., Inc. New York.

Umrani, N.K. and Boi, P.G. (1982). Studies on weed control in Bajra under dryland conditions.

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*Journal of Maharastra Agricultural University***7**(2): 145-147.

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