Indian Journal of Weed Science 43 (3&4) :239-240, 2011 **Short Communication**

Effect of weed control treatments on growth of little seed cannary grass and productivity of wheat

R.K. Tiwari, B.S. Dwivedi, G. Deshmukh, A.K. Pandey[1] and Amit Jha[2]
JNKVV College of Agricultural, Rewa [1]Krishi Vigyan Kendra Shahdol,[2]
[3]JNKVV, College of Agriculture, Jabalpur (Madhya Pradesh)
E-mail : rktkvkrewa@rediffmail.com

ABSTRACT

The experiment was conducted in the fields of 10 farmers as 'On farm trial' in adopted villages of Krishi Vigyan Kendra (KVK), Rewa. Population and dry matter accumulation of *Phalaris minor* were significantly reduced with post emergence application of sulfosulfuron (25 g/ha), mesosulfuron+ iodosulfuron (12+2.4 g/ha) and pinoxaden (50 g/ha) when compared with unweeded control during both the years of investigations. Significantly more grain yield was recorded in all herbicidal treatments as compared to unweeded control.

Key word: *Phalaris minor*, Weed control efficiency

Wheat is an important main *rabi* crop of Madhya Pradesh, contributing towards food security of the country to a large extent. Heavy weed infestation is one of the major factors determining productivity of wheat. Weeds cause yield reduction up to 50% or some time more depending upon the weed density and type of weed flora (Jat *et al.* 2003). Wheat fields of Madhya Pradesh are infested with wide range of grassy and non-grassy in general but *Phalaris minor* is very noxious weed which reduce the grain yield and quality. Use of herbicides can effectively control *P. minor*.

On farm trial (OFT) were carried out in 10 farmers field (4000 m^2 in each) in adopted village of Rewa district. Before sowing wheat, the average nutrient status was tested of the trials fields. The soil was sandy loam, low in organic carbon (0.45%) and available nitrogen (158kg/ha), available P (12.5 kg/ha) and potassium (180 kg/ha). Wheat variety *GW-273* was shown on 25th November to 30th November, 2008 and 28th November to 30th November, 2009, at the seed rate of 100 kg/ha. Recommended doses of N P K:100, 50,40 kg/ha were applied through urea DAP and Muriate of potash, respectively. DAP, Muriate of potash and one third N was applied at the sowing time while rest of N was applied after first and second irrigation. For the control of *P. minor,* sulfosulfuron (25 g/ha) mesosulfuron + iodosulfuron (12+2.4 g/ha) and inoxaden (50 g/ha) and unweeded control were assessed. All herbicides were applied as post emergence after first irrigation 20-25 (DAS). Population and dry matter of *Phalaris minor* was recored at 60 days after sowing and at harvest. Weed control efficiency was calculated as per standard formula.

Among the weed control treatments during both the years, maximum weed control efficiency was observed with mesosulfuron + iodosulfuron (12+2.4 g/ha) being at par with sulfosulfuron, (25 g/ha) and pinoxaden (50 g/ha), recorded the least population and dry matter accumulation of *P. minor* than the unweeded control at 60 DAS and at harvest (Table 1). Similar results were also reported by Brar *at el.* (2007). The interaction effect was found to have no significant impact on population and dry matter of *Phalaris minor*.

In various weed control treatments, all the herbicides treatments were found to be significantly superior to unweeded control treatments with respect to production and yield attributes (Table 2), during both the years. Similar finding were also reported by Kaur (2005).

On an average, mesosulfuron + iodosulfuron (12+2.4 g/ha), sulfosulfuron, (25 g/ha) and pinoxaden (50 g/ha) treatments gave additional net return of Rs 24,058.0, 23,010.0 and 20,212.5 /ha, respectively, when compared with unweeded control treatment.

Table 1. Weed population (m^2), dry matter accumulation (g/m^2) of *Phalaris minor* and weed control efficiency under weed control treatments

Treatment	Population (no./m^2)				Dry matter accumulation (g/m^2)				Weed control efficiency (%)	
	60 DAS		At harvest		60 DAS		At harvest		60 DAS	At harvest
	07-08	08-09	07-08	08-09	07-08	08-09	07-08	08-09	07-08	08-09
Sulfosulfuron, 25 g/ha	1.5	1.1	2.4	2.2	0.2	0.3	21.2	19.0	94.6	95.2
Mesosulfuron+ iodosulfuron,12+2.4 g/ha	1.3	1.0	2.2	1.8	0.3	0.2	19.0	17.2	95.8	95.9
Pinoxaden, 50 g/ha	1.9	1.1	2.8	2.5	0.29	0.4	23.1	20.4	94.9	94.3
Unweeded Control	107.0	90.0	115.0	120.6	38.0	32.2	185.0	215.0	-	-
LSD (P=0.05)	0.4	0.4	0.5	0.3	0.4	0.5	0.5	0.5	-	-

DAS = Day after sowing

Table 2. Yield attributes and economics of weed control treatments

Treatment	Effective tillers (per metre row length)		Grain yield (kg/ha)		Net return (Rs/ha)	
	07-08	08-09	07-08	08-09	07-08	08-09
Sulfosulfuron, 25 g/ha	82.2	89.4	516	519	43642	42615
Mesosulfuron+ iodosulfuron,12+2.4 g/ha	83.4	94.6	528	524	44530	43823
Pinoxaden, 50 g/ha	80.2	90.2	486	502	40150	40512
Unweeded Control	69.4	72.6	276	306	17612	22625
LSD (P=0.05)	9.2	10.2	31	27	-	-

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