SHORT COMMUNICATION

MAJOR WEED SPECIES IN FINGER MILLET

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Abstract : The experiment comprising 13 weed management practices which comprised single application of different post-emergence herbicides either alone or in combination and hand weeding was conducted on Clayey *Vertisols* soil of College of Agriculture, Raipur during *kharif* season of 20012. *Echinochloa colona* among grasses, *Cyperus iria* among sedges and *Alternanthera triandra, Eclipta alba* and *Phyllanthus urinaria* among broad leaf weeds were dominant. Over all the most dominant species was *Echinochloa colona* which ranged between 24-46 per cent at all the growth stages.

Keywords: Major weed species, finger millet

INTRODUCTION

Finger millet (*Eleusine indica*) is an important small millet crop that is hardy and grows well in dry zones as rain-fed crops. It is used both as medicinal and traditional purposes. Finger millet is a high statue crop with slower initial growth which remains under smothering due to the infestation of weeds at early stages of growth. This situation causes higher competition and may result in drastic reduction in yield (Kushwaha *et al*., 2002). The production and productivity of the country is lower because of weeds pose one of the major constraints in the production of finger millet. Owing to initial slow growth of the finger millet favours weed growth, which cause more competition for sunlight, nutrient and water in early stages of growth lead in lowering productivity (Kumara *et al*., 2007). The critical period of crop weed competition for the finger millet varies from 25-45 days after sowing (Lall and Yadav, 1982). Weeds compete with crop plants for water, nutrients, space and solar radiations by reduction of yield upto 20 to 50 per cent. (Kushwaha *et al*., 2002). According to various research work major weed flower was observed in finger millet crop was *Cyperus rotundus* among sedges, *Echinochloa colona*, *Digitaria marginata*, *Cynodon dactyton*, *Chloris barbata*, *Erograstis uniloides*, *Panicum spp*., *Eleusine indica* and *Setaria glauca*, among monocot and *Commelina benghalensis*, *Acanthospermum hispidum*, *Portulaca oleracea*, *Borreria hispida*, *Amaranthus viridis*, *Phyllantlus niruri*, *Argemone mexicana*, *Cleome monophylla*, *Crotons sparsiflorus*, *Emilia sanchifol1a*, *Euphorbia hirta*, *Euphorbia geniculata*, *Legasca mollis*, *Parthenium hysterophorus*, *Tridax procumbens*, *Ipomoea eriopcarp*, *Hibiscus asper* and *Spilanthus ecmela* among broad leaf weeds.

MATERIAL AND METHOD

The present investigation entitled "Evaluation of post-emergence herbicides for weed management in direct sown Finger millet." was carried out at Instructional cum Research Farm, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) India, during the *kharif* season (July-November) 2012. The soil of experimental field was Clayey *(Vertisols)*. The experiment was laid out in randomized block design (RBD) with three replications. There were thirteen treatments of post-emergence herbicides along with two hand weeding and untreated control. The finger millet cultivar "GPU-28" was sown and harvested on 11th July, 2012 and 20th November, 2012 respectively, using seed rate of 10 kg ha^{-1} at 25 cm distance. Weed counts (number m^{-2}) was recorded by putting a quadrate (0.25 m^{-2}) at random spots in each plot and relative weed density (%) was calculated by using the formula

$$\text{Relative weed density} \quad \% \quad = \frac{D}{Td} \times 100$$

D = Weed density of weedy check plot of different weed species at different interval
Td = total weed density of weedy check plot

RESULT AND DISCUSSION

Weeds

The major weed flora of experimental field consisted of *Echinochloa colona, Phyllanthus urinaria, Eclipta alba, Alternanthera triandra and Cyperus iria*. The major weeds species were observed in weedy check which has been presented in Table 1.

Table 1 : Major weeds species observed in the experiment field

S. No.	Scientific name	Family	Common name	Group
1	*Echinochloa colona*	Poaceae	Sawan/Jungle rice	Grasses
2	*Cyperus iria*	Cyperaceae	Motha/Yellow	Sedges
3	*Alternanthera triandra*	Compositae	Resham kanta	Broad leaf
4	*Eclipta alba*	compositeae	Bhringraj/False daisy	Broad leaf
5	*Phyllanthus urinaria*	Euphorbiaceae	Dodania	Broad leaf

Table 2: Weed density and relative weed density at different interval in weedy check in direct seeded finger millet

S. No.	Major weed species	Weed density (m^{-2})						Relative weed density %					
		15 DAS	30 DAS	45 DAS	60 DAS	75 DAS	90 DAS	15 DAS	30 DAS	45 DAS	60 DAS	75 DAS	90 DAS
1.	*Echinochloa colona*	30.00	85.00	100.67	72.00	64.00	52.67	40.36	45.78	36.26	24.30	29.22	35.51
2.	*Cyperus iria*	2.34	18.00	35.00	67.00	20.33	8.33	3.15	9.69	12.60	22.61	9.28	5.62
3.	*Alternanthera triandra*	9.00	9.33	25.00	26.67	20.00	18.33	12.11	5.03	9.00	9.00	9.13	12.36
4.	*Eclipta alba*	3.33	18.33	51.33	59.67	57.33	28.67	4.48	9.87	18.49	20.14	26.18	19.33
5.	*Phyllanthus urinaria*	13.67	30.33	35.33	38.33	30.67	26.33	18.39	16.34	12.72	12.93	14.00	17.75
6.	Other weed species	16.00	24.67	30.33	32.67	26.67	15.33	21.52	13.29	10.92	11.02	12.18	10.34
	Total weed species	74.34	185.66	277.66	296.34	219	149.66	100.00	100.00	100.00	100.00	100.00	100.00

The weed flora composition (%) at different stages of direct seeded finger millet is given in Table 1. At 15 DAS, the percentage composition of *Echinochloa colona* (28%) was recorded highest followed by other weed species (20%) and *Phyllanthus urinaria* (29%). At 30 DAS the percentage composition of *Echinochloa colona* (29%) followed by *Phyllanthus urinaria* (17%) and 45 DAS the percentage composition of *Echinochloa colona* (25%) was recorded highest followed by *Eclipta alba* (18%) while, at 60 DAS, the composition of *Echinochloa colona* (20%) was recorded highest. At 75 and 90 DAS, the percentage composition of *Echinochloa colona* (22% and 25%, respectively) was recorded highest followed by *Eclipta alba* (21% and 19%, respectively). At harvest the percentage composition of *Alternanthera triandra* (39%) was recorded highest followed by other weed species (33%).

Over all the most dominant species was *Echinochloa colona* which ranged between 24-46 per cent at all the growth stages. It was followed by *Phyllanthus urinaria* (13-18 %), *Eclipta alba (5-26 %), Cyperus iria* (3-23 %) and *Alternanthera triandra* (5-12 %).

Other weed species like *Commelina benghalensis, Cynodon dactylon, Cynotis axillari, Cyperus rotundus, Euphorbia hirta, Euphorbia geniculata, Fimbristylis miliacaea etc*. were also observed in the experiment field in negligible quantum. These results were in conformity with Pradhan *et al*. (2010) and Gowda *et al*. (2012).

REFERENCES

Gowda, S.G.K., Naveen, D.V., Bhagyalakshmi, T. and Gowda, R.C. (2012). Weed management practices on nutrient removal by weeds and its relation to yield of finger millet in eastern dry zone of Karnataka. *International Journal of Agricultural Sciences* **8** (2):385-389.

Kumara, O., Basavaraj Naik, T. and Palaiah, P. (2007). Effect of weed management practices and fertility levels on growth and yield parameters in Finger millet. *Karnataka Journal of Agricultural Sciences* **20***(2): 230-233.*

Kushwaha HS, Tripathi ML and Singh VB. (2002). (Eds.). Weed management in coriander (*Coriandrum sativum*). In: *Proceeding of Second International Agronomy Congress on Balancing Food and Environment Security: a Continuing Challenge (*Eds.), Singh Panjab, IPS Ahlawat and Gautam RC. *Indian Society of Agronomy*, IARI, New Delhi: 985-987.

Lall, M. and Yadav, L.N.S. (1982). Critical time of weed removal in finger millet. *Indian Journal of Weed Sciences* **14**: 85-88.

Pradhan, A., Rajput, A.S., and Thakur, A. (2010). Effect of weed management on growth and yield of finger millet. *Indian Journal of Weed Science* **42**(1&2): 53-56.