



# FLORISTIC DIVERSITY OF WEEDS OF DRY SEEDED RICE AND TRANSPLANTED RICE FIELDS IN BILASPUR (C.G.)

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## ABSTRACT

Bilaspur is district of Chhattisgarh and is situated between  $21^{\circ}37'$  to  $37^{\circ}7'$  north latitude and  $81^{\circ}12'$  to  $81^{\circ}40'$  east longitude. The texture of soil varies from matasi to kanhar and pH range from 5.9 to 7.1 with a mean value of 6.2. A climatic condition is favorable to weed and crop growth. Climate is generally wet and humid.

Paddy is the main crop grown in this area. The crop is heavily infested with the weeds. The losses caused by weed flora of the two rice cultures i.e. dry seeded and transplanted.

Present study has been carried out with the view and floristic diversity of weeds of DSR and TPR were studied during 2021-22. Eighty weed species belonging to 64 genera of Angiosperms, 01 genus of pteridophytes and 03 genera of Algae are found to be associated with paddy crop. Forty one and 39 weed species were found associated with DSR and TPR respectively. The most dominating families in term of their weediness were Poaceae, Cyperaceae and Asteraceae. Four genera of family Cyperaceae were distributed in 09 species, and 10 genera having 12 species of poaceae were recorded. *Echinochloa colona*, *Cyperus iria*, *Cyperus flavidus*, *Cyperus rotundus*, *Ageratum conyzoides*, *Cynodon dactylon* and *Saccharum spontaneum* were commonly distributed weed species. Dicot/Monocot ratio 1.13 (genera wise) and 0.818 (species wise) was obtained.

**KEYWORDS:-** Rice weeds, Bilaspur district, Chhattisgarh, Weed Species

**INTRODUCTION :-** Rice (*Oryza sativa* L.) is a member of poacea and it is important food crop by majority of world's population. It provides 20% of the total calories' intake of people in the world (Dass et al. 2016). Chhattisgarh is known as "Bowl of Paddy". Bilaspur is north-western district of Chhattisgarh State, which is situated between  $21^{\circ}37'$  and  $23^{\circ}7'$  North latitude and  $81^{\circ}12''$  and  $81^{\circ}4''$  East longitude. Paddy is main growing crop in this region. This crop is infested with many weeds. Weeds reduce 40-60% rice production approximately. Weeds absorb nutrients, minerals and fertilizers and reduce the production of rice. An extensive survey of weed flora in (DSR) direct seeded rice and (TSR) transplanted seeded rice of

the paddy field in the study sites Masturi and Ganiyari was done during the peak period of weed growth during cropping season July to November 2021. To plan a better weed control strategy, the identification of weeds is an essential pre-requisite. One has to depend on plant taxonomists for this purpose. Survey of weeds was also done with floristic viewpoints.

**METHODOLOGY :-** Extensive field visits at regular intervals were done during 2004-2006. The weed plant species were collected at their peak of flowering period. The specimens were collected, their herbarium was prepared and identified with the help of standard floras. The families were assigned and analysis for species/genera and dicot/monocot ratio was done.

**OBSERVATIONS:-** It was observed that eighty weed species belonging to 64 genera of Angiosperms, 01 genus of pteridophyte and 03 genera of Algae are found to be associated with paddy crop. It was observed that there were 33 genera of weeds distributed in 09 families of dicotyledons and 3 families of monocots. One pteridophyte was also observed. The most dominating families in terms of their weediness were poaceae and cyperaceae. Four genera of family cyperaceae were distributed in 09 species and 10 genera having 12 species of poaceae were recorded. Dicot/monocot ratio was 1.13 (genera wise) and 0.818 (species wise). (Table 01)

In transplanted seeded rice (TPR) there were 31 genera of weeds, distributed in 11 families of dicotyledons and 03 families of monocots. Three pteridophyte and 01 algae was also observed. The most dominating families in term of their weediness were poaceae and cyperaceae. Two genera of family cyperaceae were distributed in 06 species and 09 genera having 12 species of poaceae were recorded. Dicot/monocot ratio was 1.25 (genera wise) and 0.842 (species wise).

**Table -1 Number of genera and speices of weed flora in dry seeded rice (DSR) fields.**

S No.	Family	Genera	Species	Weed flora
Dicots				
1.	Asteraceae	03	03	<i>Ageratum conyzoides, Eclipta alba</i> <i>(Syn, G. Prostrata), Parthenium hysterochrous</i>
2.	Amaranthaceae	02	02	<i>Alternanthera sessilis, Achyranthes aspera</i>
3.	Acanthaceae	03	03	<i>Astercantha longifolia, Justicia simplex,</i> <i>Rungia pectinata</i>
4.	Convolvulaceae	01	01	<i>Ipomaea aquatica</i>
5.	Leguminosae	04	04	<i>Alysicarpus monilifer,</i> <i>Aeschynomene indica,</i> <i>Cassia tora, Crotalaria Juncea</i>

6.	Lythraceae	01	01	<i>Ammannia baccifera</i>
7.	Malvaceae	01	02	<i>Sida acuta, S. cordifolia</i>
8.	Oxalidaceae	01	01	<i>Oxalis corniculata</i>
9.	Polygonaceae	01	01	<i>Polygonum plebejum</i>
<b>Monocot</b>				
1.	Cyperaceae	04	09	<i>Cyperus iria, C. flavidus, C. rotundus, C. haspan, C. difformis, Fimbristylis littoralis, F. ferruginea, Kyllinga monocephala, Scripus gressus</i>
2.	Poaceae	10	12	<i>Andropogon pumilis, Cynodon dactylon. Digitaria adscendens, D. sanguinalis, Echinochloa colona, E. Crus-galli, Eragrostis pilosa, Oplismanus burmanni, Paspalum puspalooides, Panicum repens, Saccharum spontaneum, Setaria glauca.</i>
3.	Commelinaceae	01	01	<i>Commelina benghalensis</i>
<b>Pteridophytes</b>				
1.	Marsiliaceae	01	01	<i>Marsilia minuta</i>
Total	Dicot	17	18	
	Monocot	15	22	
	Pteridophyte	01	01	
	Total	33	41	
	Dicot/monocot ratio	1.33	0.818	

Table -2 Number of genera and species of weed flora in Transplanted seeded Rice (TSR) fields

S.NO.	Family	Genera	Species	Weed flora
<b>Dicots</b>				
1.	Asteraceae	02	02	<i>Caesulia axillaris, Cyathocline purpurea</i>
2.	Acanthaceae	02	02	<i>Hygrophila angustifolia, Justicia simplex</i>
3.	Convolvulaceae	01	01	<i>Ipomoea aquatica</i>
4.	Euphorbiaceae	01	02	<i>Euphorbia hirta, E. thymifolia</i>
5.	Gentianaceae	01	01	<i>Hoppea dichotoma</i>
6.	Hydrocharitaceae	01	01	<i>Hydrilla verticellota</i>
7.	Leguminosae	01	01	<i>Aeschynomene indica</i>
8.	Lemnaceae	02	02	<i>Spirodela polyrrhiza, Wolffia arrhiza</i>
9.	Polygonaceae	01	01	<i>Polygonum plebejum</i>
10.	Scrophulariaceae	02	02	<i>Limnophila conferta, Mazus pumilus</i>
11.	Oxalidaceae	01	01	<i>Oxalis corniculata</i>
<b>Monocot</b>				
1.	Commelinaceae	01	01	<i>Commelina bengalensis</i>
2.	Cyperaceae	02	06	<i>Cyperus bulbosus, C. difformis, C. haspan, C. iria, C. pilosus, Fimbristylis littoralis</i>
3.	Poaceae	09	12	<i>Andropogon pumilus, Cynodon decrylon</i> <i>Digitaria adscendeus, D. royleana,</i> <i>Echinochloa colonum, Eragrostis pilosa, E. viscosa,</i> <i>Eriocaulon auinquangu, Scripus roylei, S. gressus, Setaria glauca, Sporobolus diander</i>
<b>Algae</b>				
1.	Characeae	01	01	<i>Chara species</i>
	Pteridophytes			

1.	Azollaceae	01	01	<i>Azolla sp.</i>
	Marseliaceae	01	01	<i>Marselia minuta</i>
	Salvinaceae	01	01	<i>Salvinia sp.</i>
Total	Dicot	15	16	
	Monocot	12	19	
	Ptreiclophyte	03	03	
	Algae	01	01	
	Total	31	39	
	Dicot/Monocot ratio	1.25	0.842	

## **DISCUSSION**

Weeds species associated with paddy crop in DSR and TPR may be allotted in three categories 1. Sedges 2. Grasses and 3. Broad leaved weeds. First two belong to monocots and the other contain only dicot weeds. Ratio of sedges: Grasses: Broad-leaved weeds was calculated as 9: 12: 18 in DSR and 06: 12: 17 in TPR. Most dominating families in both rice fields are Cyperaceae and Poaceae.

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