

Weed Diversity in Paddy Field in Gondia District of Maharashtra, India

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ABSTRACT

Gondia district is eastward district of Maharashtra known for rice production. Present study carried out to survey the major weeds which causes the low rice yield and increases the production cost. The study reveals the occurrence of 88 species of weeds distributed in 23 families of flowering plants and one family of pteridophyte. The studies species are collected and preserve in the form of photograph and Herbarium.

Key words: Weeds, rice, Gondia

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INTRODUCTION

Rice is one of the most important cereals which provide the food security to half of the world population. Rice is grown in more than hundreds countries but South and West Asia are two leading region of the world for rice production. The global annual production of rice is around 700 millions tones of which 90% produced in Asia [1]. Since 1960 the area under rice cultivation and production per Hectare also increases in India. This is due to the government policies like providing subsidies for fertilizers, electricity, seeds and machinery to keep the farmers input low as compared to output. In spite of all these efforts India is lacking far behind to China in Per hectare production of rice. There are several reasons for low production of rice in India such as most of the farmers not having sufficient irrigation facility and they fully depend on Manson rain. Other factors for low production are variable physical and chemical properties of soil, high labour cost, low yielding seeds, diseases susceptible varieties and weeds. Weeds are undesirable, competitive plants which grow along with main crop. It is one of the biotic factor which is responsible for lowering the yield of crop [2-6].

Gondia district is one of the major rice producing districts of Maharashtra. It is situated at 21° 27' 36.03" N latitude, 80° 11' 52.37" Elongitude and 346 m altitude. Total geographical area of the district is 586000 hectare of which 182.900 hectare area are under cultivation. The average rainfall and other climatic conditions are favorable for the growth of Paddy. It mainly grown as Kharif crop during SW monsoon (June-September) when he average rainfall 1230 mm available, while in some part where the irrigation facility available it grown as Rabi crop (February- May). The production of paddy is approximately 1256 kg/ha.

MATERIAL AND METHODS

The present study was conducted in three Tehsil of Gondia district viz. Amgaon, Salekasa and Deori. The study carried out from 2017 to 2019 for both Kharif and Rabi crops. The

extensive survey is carried out about 10 different fields of each Tehsil for both crop seasons. Weeds are collected from the field and herbariums are prepared. The collected plants are identified with the help of available literature. The identified plants are classified into families, Genus and species and photograph have been taken in the field. Herbariums are deposited in the Department of Botany, ShankarlalAgrawal Science College Salekasa.

RESULT AND DISCUSSION

Table1: List of Weed species Collected from the Rice Field

S. No.	Weed Species	Family
1	<i>Rorippa indica</i> (L.) Heirn.	Brassicaceae
2	<i>Oxalis corniculata</i> L.	Oxiladiaceae
3	<i>Aeschynomene indica</i> L.	Fabaceae
4	<i>Ammania baccifera</i> L.	Lythraceae
5	<i>Rotala occuliflora</i> Koehne.	
6	<i>Rotala indica</i> (Willd.) Koehne in Engl	
7	<i>Ludwigia perennis</i> L	Onagraceae
8	<i>Mollugo pentaphylla</i> L.	Molluginaceae
9	<i>Seseli diffusum</i> (Roxb. ex J. E. Sm.) Sant. &Wagh in Bull	Apiaceae
10	<i>Oldenlandia corymbosa</i> L.	Rubiaceae
11	<i>Ageratum conyzoides</i> L.	Asteraceae
12	<i>Eclipta alba</i> L.	
13	<i>Spilanthus paniculata</i> L.	
14	<i>Parthenium hysterophorus</i> L.	
15	<i>Spheranthus indicus</i> L.	
16	<i>Wahlenbergia marginata</i> (Thunb.) Dc	Campanulaceae
17	<i>Anagallis arvensis</i> L.	Primulaceae
18	<i>Hydrolea zeylanica</i> (L.) Vahl,	Hydrophyllaceae
19	<i>Chrozophorarottleri</i> (Geis.) Juss.	Boraginaceae
20	<i>Heliotropium indicum</i> L.	
21	<i>Coldenia procumbens</i> L.	
22	<i>Lindernia viscosa</i> (Horhem.) Boldingh	Scrophulariaceae
23	<i>Lindernia parviflora</i> (Roxb.) Haines	
24	<i>Lindernia crustacea</i> (L.) F. Muell.	
25	<i>Dopatrium junceum</i> (Roxb.) Buch.- Ham. ex Benth	
26	<i>Mazus pimulus</i> L.	
27	<i>Lippia nodiflora</i> L.	Verbenaceae
28	<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae
29	<i>Alternanthera philoxeroides</i> (Mart.) Ariseb	
30	<i>Amaranthus viridis</i> L.	
31	<i>Amaranths spinosus</i> L.	
32	<i>Digera muricata</i> (L.) Mart.	
33	<i>Aerva lanata</i> (L.) Juss. ex Sch	
34	<i>Euphorbia hirta</i> L.	Euphorbiaceae
35	<i>Euphorbia laeta</i> Heyne ex Roth	
36	<i>Euphorbia geniculata</i> Orteg.	

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37	<i>Pouzolzia pentandara</i> Roxb.	Utricaceae	
38	<i>Monochoria vaginalis</i> (Burm.f.) Pres	Pontederiaceae	
39	<i>Commelina benghalensis</i> L.	Commelinaceae	
40	<i>Cyanotis fasciculata</i> (Heyne ex Roth) J. A. & J. H. Schult.		
41	<i>Murdannia nudiflora</i> (L.) Brenan		
42	<i>Sagittaria sagitifolia</i> L.	Alismataceae	
43	<i>Chloris barbata</i> Sw.	Cypraceae	
44	<i>Cynodon dactylon</i> L.		
45	<i>Cyperus iria</i> L.		
46	<i>Cyperus alulatus</i> Kern.		
47	<i>Cyperus difformis</i> L.		
48	<i>Cyperus corymbosus</i> Rottboell		
49	<i>Eleocharis geniculata</i> (L.) R. & S.		
50	<i>Fimbristylis argentea</i> (Rottb.) Vahl		
51	<i>Fimbristylis dichotoma</i> (L.) Vahl		
52	<i>Fimbristylis falcata</i> (Vahl.) Kunth.		
53	<i>Fimbristylis miliacea</i> (L.) Vahl		
54	<i>Courtosia cyperoides</i> (Roxb.) Nees		
55	<i>Kyllinga brevifolia</i> Rottb		
56	<i>Kyllinga tenuifolia</i> Steud.		
57	<i>Lipocarpas phacelata</i> (Vahl) Kunth		
58	<i>Rikliella squarrosa</i> (L.)		
59	<i>Scleria tessellate</i> Willd		
60	<i>Scleria rugosa</i> R. Br.		
61	<i>Scleria biflora</i> Roxb		
62	<i>Scripus setaceus</i> L.		
63	<i>Digitaria ciliaris</i> Retz.		
64	<i>Digitaria longiflora</i> (Retz.) Pers		
65	<i>Digitaria stricta</i> Roth ex R. & S.		
66	<i>Dinebra retroflexa</i> (Vahl.) Panz		Poaceae
67	<i>Echinochloa colona</i> L.		
68	<i>Echinochloa crus-galli</i> L.		
69	<i>Eleusine indica</i> L.		
70	<i>Elytrophorus spicatus</i> (Willd.) A. Camus		
71	<i>Eragrostis japonica</i> (Thunb.) Trin		
72	<i>Eragrostis gangetica</i> (Roxb.) Steud.		
73	<i>Paspalum distichum</i> Auct.		
74	<i>Paspalum scrobiculatum</i> L.		
75	<i>Paspalidium flavidum</i> Retz.		
76	<i>Setaria glauca</i> L.		
77	<i>Sporobolus capillaris</i> Miq.		
78	<i>Sacciolepis interrupta</i> (Willd.) Stapf		
79	<i>Panicum psilopodium</i> Trin Gram.		
80	<i>Panicum notatum</i> Retz.		
81	<i>Moorochloa eruciformis</i> (J. E. Sm.) Veldk		
82	<i>Leersia hexandra</i> Sw		
83	<i>Isachne miliacea</i> Roth ex Rbr.		
84	<i>Marselia quadrifolia</i> L.	Marseliaceae	

The study reveals the occurrence of 88 species of weeds in paddy field. These species are distributed in 61 genus and 24 families of angiosperm and one species belongs to Pteridophyta. In angiosperm 42 species belongs to dicotyledons and remaining 43 species

belongs to monocotyledons. Among the dicotyledons Asteraceae, Amarantaceae, Scrophulariaceae and Euphorbiace families are well represented by weed flora. In monocotyledons Cyperaceae and Poaceae are dominant and each represented by 21 and 21 species respectively. Most of the dicot species are less prevalent during the crop season and mostly occur after harvesting of paddy. Most of the Cyperaceae and Poaceae members competes with rice and responsible for the decrease production of the rice. The predominance of some weedare found in Kharif crop while some other species dominates during Rabi crop. *Marselia* is predominantly occur in the field where both Kharif and Rabi crop produce. During the survey it was observe that weeds are responsible to increase the production cost besides directly affecting the growth of paddy [7-9].



Cyperus difformis L.

Echinochloa colona L.

Cyperus iria L.



Fimbristylis falcata (Vahl.)Kunth. *Sacciolepisin terrupta* (Willd.)Stapf *Ludwigia perennis* L



Elytrophorus spicatus (Willd.) A. Camus *Paspalum distichum* Auct. *Marselia qudrifolia*



Alternanthera sessilis (L.) DC.

Lippia nodiflora L

Eclipta alba L.

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