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Paddy Weeds Diversity and its Medicinal uses from Junnar (Shivneri) Taluka Dist. Pune Maharashtra India

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ABSTRACT

The current research is being conducted in the junnar tehasil in order to better understand paddy field variety. The research was based on extensive and in-depth field surveys conducted over the course of several months between 2020 and 2022. During the field study collect a variety of paddy weeds in a systematic manner, including collection identification and the preparation of three voucher specimens for the creation of a herbarium. Weeds were collected on two-monthly field trips in each site. During that time, the authors identified 84 weed species from 36 Angiospermic and one pteridophytic family. Monocot groups like Cyperaceae and Poaceae, with 08 and 14 weed species, respectively, dominated the 21 Angiospermic families. There were one weed species from the pteridophytic family Marsileaceae. The goal of this study is to collect data on rice-field weeds and establish that the majority of them are of medical value. 84 plants with ethnomedicinal effects have also been discovered. Plants from the Amaranthaceae, Asteraceae, and Poaceae families were the most commonly utilised for dysentery, wounds, and skin illnesses. Before some of them may be employed as pharmaceuticals to benefit humans, more phytochemical research is required. Exploration, identification, and use of new ethnomedicinal plants are urgently needed to assist economic growth.

Keywords: Paddy weed , Medicinal, Junnar, Rice.

I. INTRODUCTION

According to the FAO, rice is the most important human food crop on the planet. Rice feeds half of the world's population, particularly in Asia, America, and Africa. Rice is an important part of Asian diets, particularly in India. India is one of the world's largest rice producers and consumers. Rice-growing land covers 43.20 million hectares. A total of 499.2 million metric tonnes of milled rice were consumed globally. Rice output in Asia is expected to reach 680.1 million metric tonnes, with India accounting for 148.26 million metric tonnes (FAO, 2017). The biodiversity of paddy weed varies by area tonne area lourishes (Patilet al., 2010). Low agricultural output is caused by weeds that grow alongside rice crops. Because of

their propensity to compete for CO2, space, moisture, sunlight, and nutrients, they are the most significant obstacles to rice production. A weedy crop might sometimes result in total failure (Singh et al., 2005). Weeds are believed to account for one-third of overall losses owing to various biotic causes (Rao and Nagamani, 2007). Weeds that grow alongside rice crops create low agricultural productivity. They are the most major barriers to rice production because they fight for CO2, space, moisture, sunlight, and nutrients. A weedy crop can occasionally lead to complete disaster (Singh et al., 2005). Weeds are thought to be responsible for one-third of all losses due to biotic factors (Rao and Nagamani, 2007). If rice is not deweeded at an early stage of growth, grain yield is drastically diminished. Rice provides 16% of world protein and 23% of global calories per capita. Rice protein is one of the most nutritious cereal proteins, despite its low protein level (Shah Alam, 2014). After China, India produces the second most rice in the world (Savaryet al., 2005). Rice is used to make a range of industrial goods, including rice starch, rice branoil, flaked rice, puffed rice, and rice husk, as well as for human use. Because staple foods are so important to India's economy, agricultural policymakers prioritise them (Dangwalet al., 2012). Rice is harvested throughout the kharif and rabi seasons. The rabbinical season spans from mid-January to mid-May, while the kharif season goes from June to November. Due to the favourable ecological conditions in rice fields, weeds thrive. Expanding the use of weeds as therapeutic plants and assisting farmers in establishing their companies are vital in light of recent demand.

II. METHODS AND MATERIAL

The current study focuses on the primary weeds found in rice fields in the Maharashtra taluka of Junnar. The research was based on thorough and in-depth field surveys conducted throughout the cropping seasons of 2020 and 2022. Two times a month, field trips were performed to each site to collect weed species. During this time, farmers and agriculturalists from each site were interviewed regarding seasonal weed species. Weed flowering, fruiting, and ethno-medicinal usage were all mentioned. With the help of accessible literature of floras and Google lens, the collected weed plants were correctly recognised. (Dangwalet al.,2012).

III. RESULTS AND DISCUSSION

Every plant on the planet is beneficial to humans, crops, and animals, according to ancient Indian literature. Biological diversity abounds in rice fields. Allelopathic effects can be produced by weeds. Allelopathy refers to the harmful effects of one substance on another. Any weed's positive (inhibitory) allelopathic effects on other weeds can be used to build eco-friendly, low-cost, and effective green herbicides. It contains green allelochemicals, which are an important aspect of organic or environmentally friendly cultivation (Oudhiaet al.,2002). The floristic composition of the area was documented, and it may act as a green herbicide. Rice and weeds were studied ecologically.. He further mentioned that after uprooting these valuable weeds, many farmers sell them to local marketplaces. Farmers will be able to earn more money as a result of this. According to the study, providing a firm foundation for farmers and local people to launch small cottage industries and a good market price for their products can be accomplished by training them on proper weed grading and processing and forming village level cooperative societies. the cost of their goods Ethnomedicine and traditional knowledge are excellent examples of disadvantaged tribes living in remote locations. Plant parts are used as medications directly by the majority of people all over the world, and they have no adverse effects like allopathic drugs. The majority of current medicines are derived from medicinal plants in some way. Phytotherapy

(treatment with medicines made from plants and their derivatives) is an important part of local culture in Odisha, and information about plants and their uses is passed down through the generations through oral folklore, primarily among the elderly, who are the natural keepers of traditional knowledge in their communities (Rautet al., 2012). Rice is the most important crop in these areas. Regular cultivation is carried out, however the rice yield per hectare in this district is lower than in other parts of India. (Table-1). Family Cyperaceae i.e., *Cyperus rotundus, C. iria and C.difformis,C.odorantus, C. pilosusetc.* were dominant. However some of the weeds reported from the study area i.e., *Achyranthes aspera, Eclipta alba, Commelina benghalensis, Cynodon dactylon, Euphorbia hirta, Amaranths virdis, Cyperus rotundus, Ammania baccifera ,Ludwigia parviflora, Mollugo pentaphylla, Eleusine indica, Phylla nudiflora* etc. are of medicinal importance, used in traditional medicines by vaidhyas of these area. The weeds like Amaranthus *viridis, Boerhaavia diffusa, Trianthema portulaca strum, Portulaca oleracea, Oxalis* corniculata etc. are used in some cooking racepies. Other 42 weed species used as fodder for domestic animals. Biomass from weeds is also suggested to use for compost and green manure. Medicinal plants constitute the base of health care systems in many societies. Plants are responsible for over 85% of traditional medicines used in basic healthcare around the world (Farnsworth, 2012). According to the World Health Organization (WHO), traditional medicine is used by up to 80% of the world's population, and Ayurveda is used by 65 percent of India's rural population (WHO, 2002). Because of the lack of modern facilities and the remoteness of the Koraput district's interior parts, plants have become the only source of medication (Pattnaik and Mohapatra)

IV. CONCLUSION

The current study was the first attempt from the study region to examine and identify the 84 species of weeds in the rice crop field, which are divided into 37 families. This will aid farmers and agriculturists in identifying weeds and developing weed management strategies. Weeds compete for nutrients with the rice crop, lowering production. They also have an impact on the quality of germplasm and cost farmers a lot of money. It's critical to increase the use of weeds as therapeutic plants. These weeds offer a wealth of opportunity to examine them in depth for new medicine development via chemical analysis while preserving biodiversity. This research will also aid in the adaptation of weeds to cultivated plants. Weed plants are usually the hosts.

Table 1. Plant list with their medicinal values.

Sr.No	Habit	Botanical Name	Family	Uses
1.	Herb	***Aclypha indica***	Euphorbiaceae	Anthelmintics, ulcers
2.	Herb	***Portulaca olaracea***	Portulacaeaee	Cooking vegetable, diabetes
3.	Herb	**Baccopa monneri**	Gentinaceae	improving memory, reducing anxiety, and treating epilepsy
4.	Herb	***Oldenlandia 436orymbose*** **L**	Rubiaceae	Fodder, composting
5.	Herb	***Phyla nodiflora*** **L.**	Verbenaceae	Ulcer, wounds, asthma
6.	Herb	***Physalis minima*** **L.**	Solanaceae	Fodder, composting

7.	Herb	***Mazus pumilus* (Burm F.) Van Steen.**	Scrophulariaceae	Fodder, composting
8.	climber	***Cordiospermum helicacabum* L.**	Spindaceae	Fodder, composting
9.	shrub	***Polygonum hydropiper* L.**	Polygonaceae	Haemorrhage, diuretic
10.	shrub	***Polygonum barbatum* L**		
11.	Herb	***Suttera disecta***	Scrophulariaceae	Itching, skin problem's
12.	Herb	***Rorripa indica***	Brasicaeaeae	Cough, promotion blood circulation and detoxifying
13.	Herb	***Oxalis corniculata***	Oxalaidiaceae	Treatment of influenza, fever, urinary tract infections, enteritis, diarrhoea, traumatic injuries, sprains a poisonous snake bites
14.	Herb	***Cyperus rotundas* L**	Cyperusceae	diarrhoea, diabetes, pyresis, inflammation, malaria, and stomach and bowel disorders
15.	Herb	***Anagalis arvensis* L.**	Primulaceace	anti-mycotic, antimicrobial, molluscicidal, antioxidant, anti-inflammatory, anti-leishmania, antiviral, cytotoxic, and spermatogenesis.
16.	Herb	***Ageratum conyzoyds***	Asteraceae	To treat fever, rheumatism, headache ,colic, wounds caused by burns, dyspepsia, eye problem ,uterine disorders and pneumonia
17.	Herb	***Acmella olerscea***	Asteraceae	Dermatitis., Diuretic. ,...Dry mouth.
18.	Herb	***Stemodia viscosa***	Plantaginaceae	sleep, or crushed and mixed with fat to make a rubbing medicine to treat cold and flu symptoms
19.	Herb	***Acalypha crenata***	Euphorbiaceae	antispasmodic, sedative, and emmenagogue

20.	Herb	*Bidens bipinata*	Asteraceae	emmenagogue, expectorant, stimulant, antidiarrhetic and antispasmodic.
21.	Herb	*Chrozophora rotleri*	Euphorbiaceae	wounds ,laxative.
22.	Herb	*Chorchorus species*	Malvaceae	Emulcent, deobstruent, diuretic,lactagogue , purgative, and tonic.
23.	Shrub	*Solanum migrum*	Solanaceae	treat pneumonia, aching teeth, stomach ache, tonsillitis, wing worms, pain inflammation and fever,tumor,inflammation, and also as hepaprotective, diuretic, antipyretic
24.	Herb	*Heliotropiun currasavicum*	Boraginaceae	Antifungal and antifungal
25.	Herb	*Eclipta alba*	Asteraceae	antiseptic, febrifuge, tonic, deobstruent in hepatic and spleen enlargement and is emetic.
26.	Herb	*Rungia repens*	Acanthaceae	treatment of cough and fever
27.	Herb	*Phyllanthus urinaria* (L.)	Phyllantahaceae	jaundice, diabetes, malaria, and liver diseases.
28.	Herb	*Laphangium luteoalbum (L.)Tz*velev	Asteraceae	astringent, cholagogue, diuretic, febrifuge
29.	Herb	*Cythocline purpurea*	Asteraceae	inflammation hemostasia, control various inflammation and flu
30.	Herb	*Dinebra retroflexa* (Vahl) Panz	Poaceae	fodder for cattle
31.	Shrub	*Cortaderia selloana* (Schult.& Schul.f.)Asch.	Poaceae	Wound heling and vegetable
32.	Shrub	*Cyperus rupestris*	Cyperaceae	diarrhoea, diabetes, pyresis, inflammation, malaria, and stomach and bowel disorders
33.	Shrub	*Cyperus longus*		Burning and Poisonous
34.	Herb	*Bolboschoenus sp* (Asch.) Palla	poaceae	Treatment of Human Immunodeficiency Virus.
35.	Herb	*Scirpus syuaticus*	Cyperaceae	diarrhoea, nausea, scanty micturition, jaundice,

				weakness of cardiac
36.	Herb	***Acmella radicans***	Asteraceae	
37.	Herb	***Shperanthus indicus***	Asteraceae	
38.	Shrub	***Leucaus stelligera***	Lamiaceace	cough, cold, diarrhoea, and inflammatory skin disorder.
39.	Herb	***Parthenium hysterophorus***	Asteraceae	remedy for skin inflammation, rheumatic pain, diarrhoea, urinary tract infections, dysentery, malaria and neuralgia.
40.	Herb	***Salvia sp***	Lamiaceae	wounds, treating colds and coughs. Seeds used as emetic, for dysentery, colic, haemorrhoids. Used for psychoactive effects.
41.	Shrub	***Schoenopletctus lacusstris***	Cyperaceae	This plant is a traditional medicine for cancer
42.	Herb	***Fimbristylis spp.***	Cyperaceae	The *plant* is sometimes harvested from the wild for local ***use*** as a source of materials. It is sometimes also ***used*** as a green manure and soil stabilizer.
43.	Herb	***Cyperus diformis***	Cyperaceae	Diarrhoea, diabetes, pyresis, inflammation, malaria, and stomach and bowel disorders.
44.	Herb	***Eleocharis geniculat***	Cyperaceae	Used in medicine as an analgesic drug.
45.	Herb	***Eriocaulon procumbens***	Cyperaceae	Inflammation, rheumatism, and viral ailments.
46.	Herb	***Centraurium pulchereium***	Gentianaceae	*used* for kidney damage
47.	Herb	***Exacum pumilum***	Gentianaceae	laxative.
48.	Herb	***Chochleri cochlearioides***	Gentianaceae	to prevent loss of residual hearing post-implantation
49.	Herb	***Cleome viscosa***	Cleomaceae	Rheumatic arthritis, hypertension, malaria,

				neurasthenia, and wound healing
50.	Herb	*Hydanthythus enneaspermus*	Violaceae	Diarrhoea urinary infection leucorrhoea
51.	Herb	*Polycarpa corymbose*	Careophyllaceae	reducing fever; anti-inflammatory and as a poultice for boils and other swellings; antidote for snakebite
52.	Herb	*Portulaca qudrifalora*	Portulacaeae	asthma, cough, urinary discharges, inflammations and ulcers.
53.	Herb	*Cassia tora*	Caeselpinaceae	acrid, laxative , antiperiodic, anthelmintic, ophthalmic, liver tonic, cardiotonic and expectorant.
54.	Herb	*Rhyncosia bracteata*	Fabaceae	antidiabetic, abortifacients, healing of wounds, hepatoprotective, remedial of boils, rheumatic pains and skin infections
55.	Herb	*Rhynchosia capitata*	Fabaceae	antidiabetic, abortifacients, healing of wounds, hepatoprotective, remedial of boils, rheumatic pains and skin infections
56.	Herb	*Conyza aegyptica*	Asteraceae	nephritis, dysmenorrhea, tooth pain, and headache
57.	Herb	*Alternanthera sessilis*	Acanthaceae	treatment of dysuria and haemorrhoids.
58.	Herb	*Alternanthera philoxcoides*	Acanthaceae	diuretic, demulcent, vermifuge and also used in lithiasis, headache, cough and sudden swellings
59.	Herb	*Galnsoga parriflora*	Asteraceae	blood coagulation problems, cold, flu, toothache, and dermatological and eye diseases
60.	Herb	*Trianthema portulacostrum*	Aizoaceae	analgesic, stomachic, laxative, treatment of blood disease, anaemia, inflammation, and night blindness

61.	Herb	*Nasturtium officenalis*	Brasicaceae	Urinary tract infection, Cough and bronchitis
62.	Herb	*Murdanaia nudiflora*	Commelinaceae	Asthma ,leprosy, piles astringent
63.	Herb	*Cynotis vaga*	Commelinaceae	Used for increase Testosterone
64.	Climber	*Ipomoea eriocarpa*	Convolvulaceae	Hypertension , inflammation dysentery
65.	Climber	*Ipomoea triloba*	Convolvulaceae	Hypertension , inflammation dysentery kidney diseases
66.	Herb	*Cyperus iria*	Cyperaceae	Tonic, Stimulant, febrifuge
67.	Herb	*Cyperus odoranchus*		Antispasmodic and Stomachic.
68.	Runner	*Cynodon dactylon* L.	Poaceae	Laxative coolant expectorant , carminative , heart tonic
69.	Herb	*Digitaria ciliaris* Retz.	Poaceae	Treatment of Gonorrhoea
70.	Herb	*Echinochloa crus-galli* L.	Poaceae	spleen problems. In Java, vegetable. haemorrhages, sores, s difficulty, cancer, and wounds, and tonic.
71.	Herb	*Eleusine indica* L.	Poaceace	a diuretic, anti-helminthic, febrifuge and for treating cough
72.	Herb	*Imperata cylindrica* (L.) P. Beauv.	Poaceae	treatment of a wide range of infectious diseases, particularly of bacterial infections
73.	Herb	*Ophiurus corymbosus* Gertn.	Poaceae	diuretic, anti-helminthic, febrifuge
74.	Herb	*Paspalum scrobiculatum* L.	Poaceae	management of diabetes
75.	Herb	*Paspalum distichum* Auct.	Poaceae	hay fever
76.	Herb	*Saccharum spontaneum* L.	Poaceae	Burning urination , bleeding piles Improve quantity of breast milk
77.	Herb	*Setaria glauca* L.	Poaceae	Diuretic , Tonic , febrifuge
78.	Herb	*Setaria virdis* L.	Poaceae	Diuretic , Tonic

79.	Herb	*Boerhavia diffusa* L	Nyctaginaceae	Intestinal colic Kidney disease insomnia
80.	Herb	*Mollugo pentaphylla* L.	Molluginaceae	Anticancer , Mouth infection,
81.	Herb	*Marselia quadrifolia* L.	Marseliaceae	Diabetic Cough eye diseases, Skin diseases
82.	Herb	*Ludwigia parviflora*L.	Onagraceae	Fever and burning
83.	Herb	*Vernonia cinarea* Lees.	Asteraceae	Diarrhoea , cough , Asthma, Leprosy.
84.	Herb	*Echinochloa colona* L.	Poaceae	Spleen and haemorrhage problem

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