

**ETHNO MEDICINAL ASPECTS OF WEEDS FROM PADDY FIELD IN
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ABSTRACT

The present investigation has been carried out to enumerate the medicinal plant growing in the Thiruvavarur district, Tamil Nadu south India. The study was based on extensive and intensive field surveys made during different months of rainy season 2014-2015. During the course of field study the authors have selected seven important paddy growing blocks in district of Thiruvavarur and divided the two sites (RS 1 upland site the blocks Mannargudi, Needamangalam and Valangaimaan in which is facilitated irrigation and RS2 lowland site containing blocks Kudavasal, Nannilam, Thiruvavarur, Thiruthuraiipoondi in which irrigation facility is lacking). Frequent field trips were made twice a month in each site for collection of weeds. During this period the authors have reported an Angiospermic

and Pteridophytes total 53 plant species belonging to 30 families weed plants are medicinally important to cure different diseases in human beings directly. Euphorbiaceae and Solanaceae and Amaranthaceae was dominant family were observation. The climate condition of this area support to the survival of weeds and magnificent nature. These weed species arranged in alphabetically. The medicinal formulation of these weeds species used in the treatment of different disorder of humans.

KEYWORDS: Ethno medicinal plants, weeds, paddy field.

INTRODUCTION

Paddy (*Oryza sativa L.*) is one of the most importance food crops of the world and emerging crop in India after wheat. India is the second largest producer of rice after China.^[1] Beside its use for human food, paddy is source for number products like rice starch, rice bran oil, flaked

rice, puffed rice and rice husk etc. Being staple food it plays an important role in the economy of India hence occupies a central position in agricultural policy making.^[2] The average per hectare yield of paddy in India is less as compared to china due to many factors like shortage and high cost labor: lack of irrigation facilities, quality of germplasm, agricultural output and ecological condition etc., but the problems of weed is the major contributor in the loss of production. Weed is a plant which is judged by man to be not of use and undesirable at place where it flourishes.^[3] The weeds that grow along with paddy crop results in low agriculture output. They are the major barriers to rice production because of their ability to compete for CO₂, space, moisture, sunlight and nutrients. The weed flora rich sources of many natural herbal products which have mostly used for human welfare especially in tonic to loss of viability and also reduce the human pain and suffering from many diseases. Weeds are always considered as a wanted plant. No doubt weeds are harmful to the crops and unwanted in the fields.^[4] At the same time it is not true that all weeds are unwanted plants and some of them possess nutritional value, allopathic, industrial and medicinal values.^[5] But unfortunately weeds are destroyed during cultural operation in different crop fields and may lead to the possibilities of extensively the weed species.^[4] Plants have been, and still are, a rich source of many natural products. In India, now - a - days throughout the world several thousands of plants mostly weed plants are medicinal but few drug plant are cultivated.^[6] Many of the drugs used in modern medicine were initially used in crude form in traditional uses and other useful biological activity.^[7] Man has inherited rich traditional knowledge of surrounding plants are used as food, fodder, fiber, woods, fuel, medicine beverage, oil, tannin, dye, resin, cosmetics, and crafts and for religious ceremonies.^[8] Food plants that are cultivated or grow naturally are playing an important role in sustaining human life for survival. Many traditional societies have accumulated a whole lot of empirical knowledge on the basis of their experience dealing with natural and natural resources.^[9] The traditional wisdom is based on the intrinsic realization that man and nature form part of an indivisible partner, and therefore should live in partnership with each other.^[10] It is also observed that more than 35000 plant species are used around the world for medicinal purposes.^[11] More than 8000 plants used in our country especially for their medicinal values by the rural people.^[12] Around 25000 formulations in modern allopathic system of medicine are derived from those plant species which are being used as folk medicines throughout the world since ages. Only 15% of pharmaceutical drugs are consumed in developing countries, and relatively more affluent people take a large proportion of it.^[13] It is due to extinction less availability of some of the rare plant species and partly due to poor

recognition of the traditional knowledge of folklore medicine. Thiruvarur district is more cultivation in paddy so the medicinal plants collected in paddy fields during the study, an extensive and intensive field survey of the medicinal plants done and the species used as folklore medicines were enumerated.

MATERIALS AND METHODS

Study area Thiruvarur district extends over an area 2097.09 sq.km is situated in the south eastern portion of Tamil Nadu. It is bounded on the north by Nagapattinam and Thanjavur district on the east the Nagapattinam district on the south by the Bay of Bengal, Thanjavur and Pudukkottai district and on the west by Thanjavur district. The average maximum and minimum temperature ranges from summer highest day temperature in between 28°C to 36°C average temperature respectively. The district lies between 10° 22' and 11° 07' N latitude and 75°45' E longitude. The study was based on extensive and intensive fields surveys made during different months of rainy season 2014-2015. During the course of field study the authors have selected 6 important paddy growing blocks in district of Thiruvarur and divided them into two research sites (RS1 upland site and RS2 lowland site). RS1 site containing the blocks Mannargudi, Needamangalam, and Valangaimaan in which facility is and RS2 lowland site containing blocks Kudavasal, Nannilam, Thiruvarur, Thiruthuraipoondi in which irrigation facility is lacking). Frequent field trips were made twice a month in each site for collection of weed species. During this course interviews were conducted from farmers and agriculturalists of each site about seasonal weed species and important notes on flowering and fruiting seasons of weeds were reported. The collected weed plants were pressed, dried, preserved and properly identified with the help of available literature and monographs by.^[14,18] and confirmed from the authentic regional herbaria at Rabinat Herbarium Trichirappalli-24 and deposited then in the department of Botany M.R Government Arts College, Mannargudi, Thiruvarur district, Tamil Nadu.

RESULTS AND DISCUSSION

Present study is under taken with a view to explore the source, purpose and method of use of different plant resources of Thiruvarur district. The present survey was done to record the overall relationship of the local people with resources. The information obtained from the various source of the area of study has been given in the table observation indicated that weed species collected from crop fields are being used to cure different human diseases. The total of 53 medicinal plants identified in Thiruvarur district. The collected in 30 families the

dominant in four family in Euphorbiaceae (6), Amarantheceae (6), Solanaceae (4), Fabaceae (3), Acantheceae (2), Poaceae(2), Cucurbitaceae (2), convolvulaceae (2) Cyperaceae (2), Lamiaceae (2), followed by Malvaceae, Lythraceae, Aristolochiaceae, Nyctaginaceae, Asclepidaceae, Sapindaceae, Caesalpinioideae, Umbelliferace, Capparidaceae, commelinaceae, compositae, Gentianaceae, Boraginaceae, Verbinaceae, Marsileaceae, Aizoaceae, Pedaliaceae, Portulacaceae, Zygophyllaceae, Asteraceae. The district use of popular medicinal plants as ailment is now very low for many inhabitants. They don't grow medicinally important plants in their gardens and collect these from their surrounding environments rather than buy, because these plants used. The weeds in mostly annuals, they do not grow in the expected season and the people do not have the expertise or enough knowledge to the importance of the plants. Now younger generations is not interested in agriculture activities and do not popular with traditional practices. The use of medicinally important plants is very low level. The common health problems in the sites of study area were external problems such as burns, cuts and wounds, cough, fever, headache, poison bites and skin diseases and largest number medicinal important weeds was used to treat these troubles. On the traditional uses of weeds a little work has been carried out in India. Weeds play an important role in siddha system of medicine.^[19] The collected information on medicinal aspects of some weeds used by the Ahan and Khamti communities of Sivasagar. In the present report coincides with the earlier reports of.^[20,21] and.^[22] Workers like.^[23] and.^[24] have worked on weed flora and their management in other areas of India.

Table 1.The paddy field plant species in Thiruvavarur district study area present or absent (Percentage)

S.no	Botanical Name	Mannargudi	Needamangalam	Valangaimaan	Kudavasal	Nannilam	Thiruvavarur	Thiruthurai Poondi
1	Abutilon indicum (L.) Sweet	++++	+++	+	++	+	++	++++
2	Abrus precatorius L.	+	++	+	++	+++	+	++
3	Acalypha indica L.	++++	++++	++	++++	++	+++	++++
4	Achyranthus aspera L.	++++	++	++	++++	+++	++++	++++
5	Adhatoda zeylanica L.	+	+	++	+++	++	+	++
6	Alternanthera sessilis (L.) R.Br.ex Rome. & Schultz	++++	++++	++++	++++	++++	++++	++++
7	Alternanthera echinata Smith.	++	+	++	++	+++	++	+
8	Amarathus spinosus L.	++++	++	++	++	+++	++++	++++
9	Amaranthus tricolor L.	++++	+++	+++	+++	++	+++	++
10	Amaranthus viridis L.	++	++	++	+	+++	++++	+
11	Ammannia baccifera L.	++++	+	+	++	+	++	-
12	Andrographis paniculata (Burm.f.) Wall.exNees	++	+	+	+	++	++	+
13	Aristolochia bracteolate Retz.	++	++	++	+++	++	++	+++
14	Boerhaavia diffusa L.	++++	+++	+++	+++	++++	+++	++++
15	Calotropis gigantea (L.) R.Br.	++++	+++	++	++	+++	+++	++
16	Cardiospermum halicacabam L.	+++	+++	+++	++++	++	++++	++
17	Cassia auriculata L.	++	++	+++	++	+	++	+
18	Centella asiatica (L.) Urb.	++++	++	++	-	++	+	-
19	Chloris barbata Sw.	++++	++++	++++	++++	++++	++++	++++
20	Croton Sparciflorus Mor.	+++	+++	+++	++++	+++	+++	+++
21	Cleome viscosa L.	++++	++	+++	++	+++	++++	+++
22	Clitoria ternatea L.	+++	++	+	+	++	+	+
23	Coccinia cordifolia (L.) Cong	++++	+++	+++	++++	++++	++++	++++
24	Commelina benghalensis L.	++++	+++	+++	++	+++	++++	++++
25	Convolvulus arvensis L.	+++	+++	++	+	+++	++	++++

26	Crotolaria verucosa L.	+	+	++	+	++	++	+++
27	Cynodon dactylon (L.) Pers.	++++	++++	++++	++++	++++	++++	++++
28	Cyperus rodandus L.	++++	++++	++++	++++	+++	++++	++++
29	Cyperus scariosus R.br.	++++	+++	++	+++	+++	++	+++
30	Eclipta alba (L.) Hassk.	++++	++++	++++	++++	++++	++++	++++
31	Enicostemma axillare (Lam.) A. Raynal.	++	+	+	+++	+++	++	+++
32	Euphorbia hirta L.	++++	++++	++	++	+++	++	++++
33	Evolvulus alsinoides (L.) L.	++	+	+++	++	+	++	+
34	Gynandropsis pentaphylla DC.	++	+	+	+++	++	++++	+
35	Heliotrobium indicum L.	+++	++++	++	++	+	++	+++
36	Leucas aspera (Willd.) Link	++++	++++	++++	++++	++++	++++	++++
37	Lippia nodiflora L.	++++	++++	+	+	+	++	+
38	Marsilea minuta L.	++++	++++	++++	++++	++++	++++	++++
39	Mullugo nudicalis Lam.	++++	+++	+++	++	++	+++	++++
40	Mukia maderaspatana (L.). M.J.Roem.	+++	++	+++	+++	+++	++	+++
41	Ocimum canum L.	++++	+++	+	+++	++++	+++	++
42	Pergularia daemia. (Forsk.) Chiov	++	+	+++	++	++++	++	+
43	Phyllanthus amarus Schum. & Thonn.	++++	+++	+++	+++	++++	+++	++++
44	Phyllanthus maderaspatensis L.	++++	+++	+++	++++	++	++	-
45	Physalis minima L.	+++	+++	+++	+++	+++	++	+
46	Pedaliu murex L.	++++	++++	++++	++++	+++	++++	+++
47	Portulaca oleracea L.	++++	++++	++	++++	+++	+++	+
48	Ricinus communis L.	+++	++	++	++++	++	+++	++++
49	Solanum nigrum L.	+++	++	+++	++++	+++	+++	++++
50	Solanum trilobatum L.	++++	++++	++++	+++	+++	++++	++++

51	<i>Solanum xanthocarpum</i> Schard & Wendl.	++	+	+++	+++	+++	++	++
52	<i>Tribulus terrestris</i> L.	++++	+++	+++	++++	++++	++++	++++
53	<i>Tridax procumbens</i> L.	++++	++++	+++	++	++++	+++	++++

(+) =25% (++) =50% (+++) =75% (++++)=100%

Table2. Survey of weeds of medicinal plant in paddy fields at Thiruvavur district, Tamil Nadu

No	Botanical Name	Family	Vernacular Name	Parts Used	Medicinal uses
1.	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Thutti	Whole plant	The leaf juice is specifically used for control in over bleeding, tooth pain and piles.
2.	<i>Abrus precatorius</i> L.	Fabaceae	Kundumani	Root& leaves	Leaf paste applied nerves pain.
3	<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimaeni	Leaves	Leaf paste applied in skin diseases, wounds, stomach pain control in delivery women.
4	<i>Achyranthus aspera</i> L.	Amaranthaceae	Naayuruvi	Root&leaves	Indigenous people used stem chewing for cleaning the teeth.
5	<i>Adhatoda zeylanica</i> L.	Acantheceae	Adhatoda	Leaves	Adult fever, cough, asthma control heart problem and child cough control.
6	<i>Alternanthera sessilis</i> (L.) R.Br.ex Rome. & Schultz.	Amaranthaceae	Ponnaankanni	Whole plant	The leaf soups used for diabetes, anemic patients and body cooling. The leaf paste used for wounds.
7	<i>Alternanthera echinata</i> Smith.	Amaranthaceae	Mull ponnaankanni	Leaves	The leaf extract used for hair tonic.
8	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Mullukeerai	Leaves	The leaf juice specifically used for stomach problem and peptic ulcer.
9	<i>Amaranthus tricolor</i> L.	Amaranthaceae	Thandukeerai	Leaves	The leaf juice used for blood pressure, urinary diseases.
10	<i>Amaranthus viridis</i> L.	Amaranthaceae	Kuppaikeerai	Whole plant	The plant powder used for wounds and ulcer.
11	<i>Ammannia baccifera</i> L.	Lythraceae	Neermelneruppu	Whole plant	Whole plant paste used for ringworm.
12	<i>Andrographis paniculata</i> (Burm.f.) Wall.exNees	Acanthaceae	Nilavembu	Leaves& root	The fresh juice used for stomach pain.
13	<i>Aristolochia bracteolata</i> Retz.	Aristolochiaceae	Aaduthinnapalai	Whole plant	Plant paste used for skin disease.
14	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Muskkurattai	Root&leaves	Indigenous people used root paste as a dressing for dematous swelling.

15	<i>Calotropis gigantean</i> (L.) R.Br.	Asclepidaceae	Erukku	Leaves	The leaf paste used for inflammatory and snake bite.
16	<i>Cardiospermum halicacabam</i> L.	Sapindaceae	Mudakathan	Leaves	The leaf soups used for cough, fever and vomiting.
17	<i>Cassia auriculata</i> L.	Caesalpinioideae	Aavarai	Whole plant	The flower juice used for control over bleeding, The leaf and seed paste used for skin diseases.
18	<i>Centella asiatica</i> (L.) Urb.	Umbelliferae	Vallari	Leaves	The leaf extract used for sprain and hair tonic.
19	<i>Chloris barbata</i> Sw.	Poaceae	Kuthuraival pillu.	Root	The root soups used for Cough, cold and asthma the leaf paste used for wounds.
20	<i>Croton Sparciflorus</i> Mor.	Euporbiaceae	Rail poondu	Leaves	The leaf juice used for Cough and fever. The leaf powder used for wounds.
21	<i>Cleome viscosa</i> L.	Capparidaceae	Nayikkadugu	Whole plant	The plant juice and paste used for wounds and ulcers.
22	<i>Clitoria ternetea</i> L.	Fabaceae	Kakarattan, sangupushpam	Root	The leaf juice used for cough, cold, and wounds.
23	<i>Coccinia cordifolias</i> (L.) Cong	Cucurbitaceous	Kovai	Fruit& leaves	The fruit juice and leaf soup used for diabetic and body cooling. The leaf paste used for snake bites.
24	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanankeerai	Leaves	The fresh juice used for massaged over the body.
25	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Thalikodi	Whole plant	The plant extract used for wound wash and fevers.
26	<i>Crotolaria verucosa</i> L.	Fabaceae	Gilugilupai	Leaves	The leaf paste used for headaches and body pain relief.
27	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Arugampullu	Whole plant	The plant fresh juice taken in empty stomach used for poison control and blood purifier.
28	<i>Cyperus rodandus</i> L.	Cyperaceae	Koraipillu	Rhizome	The tuber powder is considered as diuretic and is diaphoretic and widely used by tribal doctors.
29	<i>Cyperus scariosus</i> R.br	Cyperaceae	Poonkorai	Rhizome	The rhizome powder used for dysentery and blood pressure.
30	<i>Eclipta alba</i> (L.) Hassk.	Compositae	Karisalankanni	Whole plant	The herbal extract used as a dye for coloring the hair. The leaf juice used for diabetics and body cooling.
31	<i>Enicostemma axillare</i> (Lam.) A. Raynal.	Gentianaceae	Vellarugu	Leaves	Leaf paste used for Poison control, skin disease.
32	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Ammaanpacharisi	Whole plant	Leaf paste applied in wounds and pimples.
33	<i>Evolvulus alsinoides</i> L.	Convolvulaceae	Vishnukiranthi	Entire plant	The juice is considered as brain tonic and febrifuge used in some fever.
34	<i>Gynandropsis pentaphylla</i>	Capparidaceae	Kattukadugu	Leaves	Leaf paste used for round worms.

	DC.				
35	<i>Heliotrobium indicum</i> L.	Boraginaceae	Thelkodukku	Whole plant	Fractured bone, wound healing.
36	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thumbai	Whole plant	The plant extract used for skin eruption, cough, fever and infection.
37	<i>Lippia nodiflora</i> L.	Verbinaceae	Poduthalai	Leaves	The leaf paste used for stomach problem, gastric problem and vomiting.
38	<i>Marsilea minuta</i> L.	Marsileaceae	Aarakkeerai	Leaves& shoots	The leaf soup control blood pressure, sleeping disorders and mental problem.
39	<i>Mullugo nudicalis</i> Lam.	Aizoaceae	Paarpadagam	Entire plant	Plant paste used for skin disease.
40	<i>Mukia maderaspatana</i> (L.). M.J.Rome	Cucurbitaceae	Musumusukka	Whole plant	The plant juice used for Cough, fever and diabetes.
41	<i>Ocimum canum</i> L.	Lamiaceae	Naaithulasi	Leaves	Leaf juice used for cough and dysentery.
42	<i>Pergularia daemia</i> . (Forsk.) Chiov	Asclepidaceae	Vaeliparuthi	Leaves	Leaf paste applied for Pain reliever, stomach problem.
43	<i>Phyllanthus amaras</i> Schum. &Thonn.	Euphorbiaceae	Keelannelli	Whole plant	Fresh juice used for Jaundice and stomach problem.
44	<i>Phyllanthus maderaspatensis</i> L.	Euphorbiaceae	Mellanelli	Whole plant	The plant powder and juice used for Jaundice and headache.
45	<i>Physalis minima</i> L.	Solanaceae	Tholthakkali	Whole plant	The plant extract used for urinary problem.
46	<i>Pedaliium murex</i> L.	Pedaliaceae	Perunerinjil	Leaves& flowers	The plant part used for ulcer, stomach problem and body cooling.
47	<i>Portulaca oleracea</i> L.	Portulacaceae	Kozhikeerai	Leaves	The leaf extract used for snake bites, dysentery, diarrhea and control the bleeding.
48	<i>Ricinus communis</i> L.	Euphorbiaceae	Aamanakku	Root& leaf	Tribal's used the leaves poultice to boils sores and wounds.
49	<i>Solanum nigrum</i> L.	Solanaceae	Manatthakkaali	Leaf,	The plant is highly medicinal and the berries and employed as domestic remedy in diarrhea, fever and eye pupil.
50	<i>Solanum trilobatum</i> L.	Solanaceae	Thoodhuvalai	Leaf& flowers	The leaf paste used for cough, cold, and asthma. The flower used for earache.
51	<i>Solanum xanthocarpum</i> Schard & Wendl.	Solanaceae	Kandankathiri	Leaves	The leaf extract used for children cough, stomach pain and asthma.
52	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Nerinji	Leaves	The leaf juice used for Stone problem, and urine problem.
53	<i>Tridax procumbens</i> L.	Asteraceae	Vettukayapoondur	Leaf	The juice is beneficial in the treatment of leucorrhoea.

CONCLUSION

Indian council of agriculture has recommended that proper utilization of weeds itself can contribute significantly to enhance the income of poor farmers. Weeds are tremendously grown in open area and people are not aware for medicinal value of weeds. On other hand India is a leading exporter of the medicinal plants in the world trade. So, one should understand the importance of weeds. It may be useful for taxonomists, agriculturists and scientists involved in the management of weeds. Awareness should be carried out to the local peoples to use these weeds as medicine and to practice them in their day today life. The various uses of these weeds may aid dealers in crude drugs manufactures of plant products or persons interested in the beneficial aspects of plants. Used as medicine directly or in ayurvedic medicine in large scale.

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