



Received on 28 September 2021; received in revised form, 28 December 2021; accepted, 24 May 2022; published 01 June 2022

ETHNOMEDICINAL IMPORTANCE OF RAINY SEASON WEEDS OF JHANSI DISTRICT

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Keywords:

Ethnomedicinal, Folklore, Ailments, Weeds

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ABSTRACT: An ethnomedicinal exploration of weeds of Jhansi district, located in the state of Uttar Pradesh in India, has been carried out to identify and find out the use of weeds to treat different ailments. Folklore people living in remote areas do not have easy access to hospitals or medical facilities, so they depend on the plants and weeds present in their surroundings to treat various diseases or physical ailments. A survey was made to get the knowledge of medicinal values of weeds in three regions of Jhansi, and it was found that a total of 30 weeds was used at most by folklore people for their treatments. Identified weeds belonging to families Malvaceae, Asteraceae, Solanaceae, Euphorbiaceae, Poaceae, Amaranthaceae, Convolvulaceae, and Ceasalpinaceae, etc. were found to treat various ailments like fever, cough, flu, nausea, skin diseases, body ache, and overall weeds were also known to increase the immunity of the body. Although there is literature known about the uses of weeds or other plants, it is still required more to explore the medicinal values of weeds to break the fact that they are unwanted plants and conserve the biodiversity by avoiding their unnecessary cutting. It was found that all the parts of weeds were used to treat diseases, but leaves were mostly used, followed by stem, root and seeds for the treatment of particular diseases.

INTRODUCTION: Weeds are plants that grow and reproduce very fast in their natural habitat or outside their native habitat and have a strong root system¹. Weeds are known as undesirable plants that are able to grow in adverse environments; they are usually herbaceous and fast-growing². The weeds grow by themselves on the roadsides, gardens, and even agricultural lands. In the plant kingdom, weeds do not constitute any specific group. Usually, the weeds are harmful plants, but they have immense medicinal values also.

For example, *Abutilon indicum* (Kanghii), *Achyranthus aspera* (Chirchita), *Solanum nigrum* (Makoi) and *Xanthium strumarium* (Chota datura) have many important medicinal values, but in crop fields, they occur as troublesome weeds³. Weeds are also known to have medicinal values especially in remote areas or underdeveloped areas and villages⁴⁻¹².

In remote areas, people use plants and their various parts to treat different ailments due to lack of transportation facilities or easy approach to hospitals for timely treatment in cities. Tribe folklore has immense knowledge of traditional medicines from plants. They know the use of every part of plants in treating different types of problems. India is inhabited by more than 550 ethnic/tribal communities, consisting of about 8%

<p>QUICK RESPONSE CODE</p> 	<p>DOI: 10.13040/IJPSR.0975-8232.13(6).2508-17</p> <hr/> <p>This article can be accessed online on www.ijpsr.com</p> <hr/> <p>DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.13(6).2508-17</p>
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of the total population of country ¹³. An ethnomedicinal survey was carried out in the selected tribal areas of Jhansi district located in the state of Uttar Pradesh in India **Fig. 1**. Uttar Pradesh, at present, the fourth largest state of India, lies between 23°52' - 30°25' N latitude and 77°3' - 84°39' E longitude. The state covers a geographical area of 2, 36,286 sq km and is divided into 75 districts. It can be physically divided into three regions: Terai, Gangetic plain, and Deccan plateau. Jhansi is located at 25.4333 N 78.5833 E. It has an

average elevation of 284 meters (935 feet). This study aims to gather and prepare a database on various aspects of medicinal weeds in remote areas. Information about the medicinal values of rainy season weeds was collected. Tribal communities mostly rely on the traditional methods of treatment based on plants available in their locality. So the present survey was carried out to know how the tribal people of the Jhansi district use the weeds of the rainy season for their treatment.

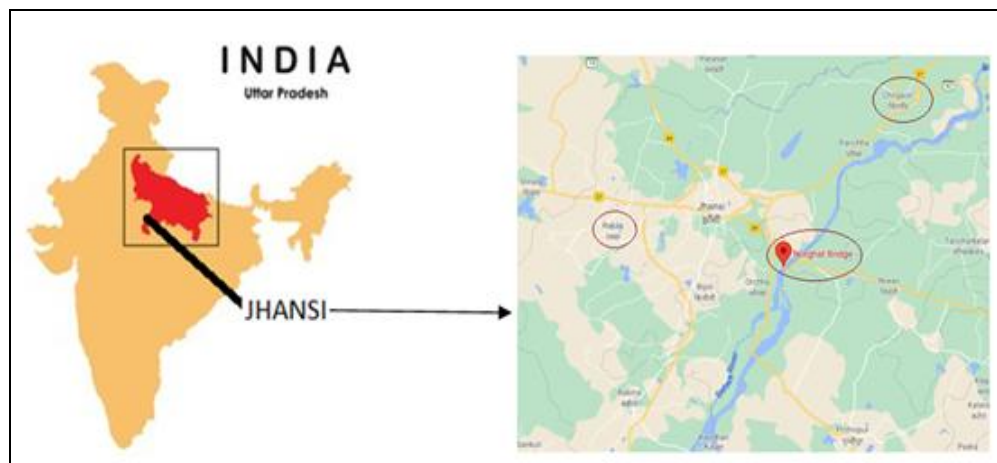


FIG. 1: LOCATION OF SURVEYED AREAS OF JHANSI (U. P.)

MATERIALS AND METHODS: For the exploration of medicinal values of weeds, regular surveys in the seasons were done to the remote areas of Jhansi and the information was collected by visiting the particular tribal regions: 1) Notghat region, Jhansi (2) Raksa, Jhansi. (3) Chirgaon, Jhansi. We visited those places during the rainy season, *i.e.*, July, August, and September 2020. After field observations, residents of the region were asked about the uses and medicinal values of rainy season weeds as a whole and their parts with formulations. The knowledgeable elder people, specially hakims or vaidyas, were also questioned for medicinal use of weeds, their parts

formulations, and dosage for the treatment of various diseases. Weed specimens of medicinal importance were collected with the help of local tribal people and identified using standard flora and maintained in the herbarium of Botany Department, Bipin Bihari College, Jhansi. The intensive study was done on the gathered information, cross-checked, and referred to the available literature. The collected data is categorized here under the local and botanical name of weed, its family, part used, type of ailment treated, mode, and consumption dosage. The collected information was cross-checked with the available literature, and references are also quoted in the present study.

TABLE 1: LIST OF IDENTIFIED WEEDS IN THE SURVEYED AREAS WITH THEIR BOTANICAL NAMES, FAMILY, PARTS USED AND MODE OF CONSUMPTION

S. no.	Botanical name (common name)	Family	Parts of plant used	Mode of consumption and ailments treated
1	<i>Abutilon</i> ^{14, 15, 16} <i>indicum</i> (kanghi)	Malvaceae	Whole plant Leaves Root	a) Whole plant dried and powdered .spoonful of this powder helps in safe and quick pregnancy b) Leaves decoction treats gout and ulcer c) root powder treats urinary tract infections and has diuretic properties
2	<i>Adhatoda</i> ^{17, 18, 19} <i>vasica</i> (adulsa)	Acanthaceae	Leaves Flowers Seeds	a) Fresh juice of leaves (2-4g) treats dysentery and diarrhea. b) Leaves decoction with ginger and pepper is very helpful to expel sputum from body

3	<i>Acyranthes aspera</i> ^{20, 21, 22} (latjeera)	Amaranthaceae	Root Whole plant Leaves	<p>c) Flowers are shade dried, powdered, and 10g of this powder with 5g jaggery cures headache</p> <p>d) Stem bark is used as a toothbrush. It whitens teeth and cures toothache</p> <p>a) Root bark decoction treats asthma and relieves cough</p> <p>b) Decoction of all plant parts by taking 20g with 400ml of water boiled to 100ml filter it and have it lukewarm. It reduces acidity</p> <p>c) Fresh leaves juice applied on scorpion or wasp bites dissolves the poison and works as antiseptic. It also treats skin problems like boils, blisters or pocks</p>
4	<i>Argemone mexicana</i> ^{23, 24, 25} (satyanashi)	Papaveraceae	Leaves Stem Whole plant Root	<p>a) Leaves fresh juice, filtered and put 2 drops in eyes relieves eye pain and swelling in eyes</p> <p>b) Leaves and stem juice (5g).for 1 month removes all skin diseases</p> <p>c) 5g of juice of whole plant parts 4 times a day treats ascites disease in almost 10 days</p> <p>d) Root dried and powdered (1g) with lukewarm water spills cough out</p>
5	<i>Amaranthus spinosus</i> ^{26, 27} (chaulai)	Amaranthaceae	Root Fruit	<p>a) Fresh juice of root 2g for 3-4 days treats indigestion and vomiting</p> <p>b) Fresh paste of root applied on skin treats eczema and gonorrhea</p> <p>c) Fruits, dried and burnt. Its ash is used for the treatment of jaundice</p>
6	<i>Boerhavia</i> ^{28, 29} <i>diffusa</i> (punarnava)	Nyctaginaceae	Leaves Root	<p>a) Fresh leaves extract 20ml with 40 ml water for 4-5 days dissolves kidney stones</p> <p>b) Fresh extract of leaves act as anti-dermatophyte and treats skin redness, fissures</p> <p>c) Leaves decoction is taken as an antidote for scorpion bite or snake bite</p> <p>d) Root extract has significant diuretic activity. Root extract (3g) with 500mg of turmeric twice in a day for 7 days treats asthma</p>
7	<i>Basella alba</i> ^{30, 31, 32} (pooi leaf or creeping spinach)	Basellaceae	Stem, root, leaves	<p>a) 2g paste of root taken with a glass of water (200ml) regularizes the menstruation problems</p> <p>b) Leaves decoction taken to treat dysentery</p> <p>Stem and leaves paste applied on wounds or burnt skin to minimize its effect</p>
8	<i>Cannabis sativa</i> (bhang) ^{33, 34}	Cannabinaceae	Leaves Seeds Flowers	<p>a) Fresh leaves juice filtered and put 7-8 drops in the ear prevents earache</p> <p>b) Leaves extract applied on scalp removes dandruff and kills lice</p> <p>c) Oil of seeds is used for massage to treat arthritis.</p> <p>d) Female flowers dried and powdered (65g) dissolved with 200ml water spills cough out and treats asthma.</p>
9	<i>Cassia</i> ^{35, 36} <i>occidentalis</i> (kasunda)	Caesalpineaceae	Leaves Root Seeds	<p>a) Fresh juice of leaves, filtered and put 2 drops in eyes twice treats redness and itching of eyes</p> <p>b) 10g of fresh leaves juice with 2 spoons of honey relieves from vomiting</p> <p>c) Roots decoction (10g root boiled with 100ml water). Twice in a day is diuretic</p> <p>d) Fresh root extract 2g with 200ml whey treats ascites fever</p> <p>e) 10g seeds with 2 black pepper and 50ml water twice in a day treat khoonibawasir</p>
10	<i>Cassia tora</i> ^{37, 38} (chakunda))	Caesalpineaceae	Leaves Root Seeds	<p>a) Leaves decoction (10-12 leaves boiled with 200ml water reduced to 50ml) taken for 3 days reduces swelling in the body</p>

11	<i>Convolvulus microphyllus</i> (shankpushpi) ^{39, 40}	Convolvulaceae	Stem Leaves Root	<p>b) Root decoction (10g boiled with 400ml water reduced to 100 ml) taken for a week treats diabetes.</p> <p>c) Seeds dried and crushed (2g) taken with lukewarm water spills dry cough out</p> <p>d) Seeds grinded 20g with kanji (Indian probiotic) relieve migraine and half head pain</p> <p>a) Dried stem and leaves powder (3-5g) taken with milk in morning for 10-15 days increases memory power</p> <p>b) 2g of dried stem powder with 1g of black sesame seeds with 200ml milk treats enuresis</p> <p>c) Dried powder of root (2g) with lukewarm water helps in the treatment of diabetes</p>
12	<i>Cleome viscosa</i> (hurhur) ^{41, 42, 43}	Cleomaceae	Leaves Seeds	<p>a) Fresh crushed leaves extract is applied on wounds as antiseptic</p> <p>b) Decoction of fresh leaves (5-6 leaves boiled with 200ml water).acts as a digestive stimulant and treats dysentery</p> <p>c) Seeds decoction helpful to treat diarrhea, rheumatism and gonorrhea</p>
13	<i>Cuscuta reflexa</i> (amarbel) ^{44, 45}	Convolvulaceae	Whole plant	<p>a) Lukewarm paste of plant when applied externally treats rheumatism</p> <p>b) Fresh paste applied on forehead cures headache.</p> <p>c) Fresh paste applied on scalp treats dandruff and prevents hairfall</p>
14	<i>Cynodon dactylon</i> (dhoob) ^{46, 47}	Poaceae	Whole plant	<p>a) Fresh juice acts as astringent. It helps in wound healing.</p> <p>b) 5g of fresh juice with 100ml lukewarm water treats diarrhea</p> <p>c) 5g fresh juice with one teaspoon honey treats menorrhagia</p> <p>d) Decoction is used to treat fever and remove fatigue.</p>
15	<i>Eclipta prostrata</i> (ghamira) ^{48, 49,}	Asteraceae	Leaves Stem Whole plant	<p>a) Fresh leaves extract is used as antidote for snakes and scorpion bites</p> <p>b) Stem and leaves crushed and filtered (2-4g) extract twice a day cures fever</p> <p>c) Fresh leaves juice 5g with honey twice a day for 20 days treats high blood pressure</p> <p>d) Plant extract with coconut oil applied a scalp for strong and healthy hair</p>
16	<i>Euphorbia hirta</i> (dudhi) ^{51, 52}	Euphorbiaceae	Whole plant, leaves and root	<p>a) Decoction of leaves used to treat asthma.</p> <p>b) Whole plant decoction reduces swelling of the body thus is anti-inflammatory</p>
17	<i>Phyllanthus niruri</i> ^{53,} ^{54, 55} (bhuiamla)	Euphorbiaceae	Leaves Stem Whole plant	<p>a) Gargles of 50g fresh leaves extract with 200ml lukewarm water treats mouthache</p> <p>b) 50g crushed stem and leaves boiled with 500ml water, reduced to 150ml. one spoon of it daily for a week relieves dry cough</p> <p>c) Decoction of 50g of whole plant with 250ml of water treats kidney stones</p> <p>d) 15g whole plant extract with 15 black pepper powder taken twice a day for 7 days treats diabetes.</p>
18	<i>Datura metel</i> ^{56, 57} (dhatura)	Solanaceae	Leaves Whole plant	<p>a) 2-3 fresh leaves just gulp with water daily for 5-6 days cures headache</p> <p>b) Heat the leaves and tie them on breasts to cure the swelling of breasts</p> <p>c) Smoke of dried powder of whole plant treats asthma</p> <p>d) Fresh extract of leaves applied on the area of joints pain relieves the pain</p>
19	<i>Lantana indica</i> ^{58,}	Verbanaceae	Leaves	<p>a) Fresh leaves extract when applied on skin with</p>

	⁵⁹ (ghaneri or panjphulli)			rashes cures it
20	<i>Ocimum basilicum</i> ⁶⁰ ⁶¹ (tulsi)	Lamiaceae	Leaves Whole plant	b) Crushed leaves are applied to reduce the effect of snakebite c) 4-5 leaves boiled with water for 5 minutes; this water inhaled in the form of steam treats respiratory problems
21	<i>Oxalis corniculata</i> ^{62,63,64} (changeri)	Oxalidaceae	Whole plant	a) Leaves consumed fresh are very helpful in treating digestive disorders, stomach ache, and diarrhea b) Leaf decoction is used to spill dry cough out c) Decoction of whole plant parts are used to cure fever, whooping cough
22	<i>Polygonum barbatum</i> ^{65, 66} (knotweed or chimiti saag)	Polygonaceae	Root	a) Plant is rich in vitamin c. so drink is prepared by infusing leaves in hot water for 10 minutes, sweetened, chilled, and consumed to increase the immunity b) Juice of plant mixed with some oil and applied on the region of muscular swellings or boils treats it.
23	<i>Rauvolfia tetraphylla</i> ^{67, 68, 69, 70} (sarpanasini)	Apocynaceae	Leaves Whole plant	a) Its root is used externally in the treatment of scabies b) Decoction of leaves used for the treatment of fever and is diuretic
24	<i>Saccharum spontaneum</i> ^{71, 72} (Kans)	Poaceae	Stem Root	a) Latex of the plant is diuretic, treats urinary problems b) Extract of leaves taken in very small amount treats high blood pressure c) Plant extract externally applied to wounds or snake bite areas cures it
25	<i>Sida cordifolia</i> ^{73, 74} (bala)	Malvaceae	Stem Leaves Whole plant	a) Young shoots are eaten raw. they have high fibre b) It is used as a natural sweetener c) Root boiled with cow milk is given to lactating women to increase milk
26	<i>Solanum nigrum</i> ^{75, 76} (makoi)	Solanaceae	Leaves Root	a) Extract of stem and leaves mixed with Shatavari are used to enhance the beauty b) Decoction is used to relieve chest congestion and treat asthma
27	<i>Sonchus brachyotus</i> ^{77, 78} (sadhi)	Asteraceae	Stem Leaves Whole plant	a) fresh juice of the leaves is used treat skin diseases b) asthma is cured by consuming fresh juice of its roots (5g juice diluted with 200ml of lukewarm water)
28	<i>Tridax procumbens</i> ^{79, 80} (phulana)	Asteraceae	Leaves	a) Decoction of the whole plant is used to treat stomach ache and ulcers. b) Extract of stem and leaves when applied externally treats inflammation
29	<i>Withaniasomnifera</i> ^{81, 82} (ashwagandha)	Solanaceae	Leaves	a) It is used for the treatment of skin diseases. leaf extract is applied on wound to prevent sepsis b) Leaves decoction for 7 days gives relief from high sugar level
30	<i>Xanthium strumarium</i> ^{83, 84} (chotadhatra)	Asteraceae	Root Leaves	a) It is taken to treat cold, cough, bronchitis or asthma. b) Dried leaves powder (one spoon) for 15 days treats diabetes c) Fresh leaves decoction is used to treat respiratory problems
				a) Root decoction is used to treat high fever. b) Decoction of leaves used to treat rheumatidis

RESULTS AND DISCUSSION: During the surveys of uses of rainy season weeds of Jhansi, we observed that out of total 30 weeds which grow in abundance in remote areas of Jhansi district, belongs to 19 families, of which 4 weeds were from

family Asteraceae, 3 from Solanaceae, 2 each from Euphorbiaceae, Malvaceae, Poaceae, Amaranthaceae, Convolvulaceae, Caesalpinaceae and 1 each from Verbenaceae, Lamiaceae, Oxalidaceae, Polygonaceae, Apocynaceae,

Acanthaceae, Nyctaginaceae, Basellaceae, Cannabaceae, and Cleomaceae. Different ailments like blood pressure, stomach problems, toothaches, headache, diuretic problems, menstrual problems and hair problems, treatments of snake bites or recovery of wounds are treated by the correct usage of different parts of plants in a particular ratio, the proper mode of usage and consumption by the residents.

Leaves were found to be the most widely used part of the plant, followed by whole plant, root, stem, seeds, and flowers. The percentage of these plant parts was calculated and depicted in Fig. 2. It is represented as follows: leaves (73%), whole plant (43%), roots (40%), stem (27%), seeds (17%) and flowers (6%).

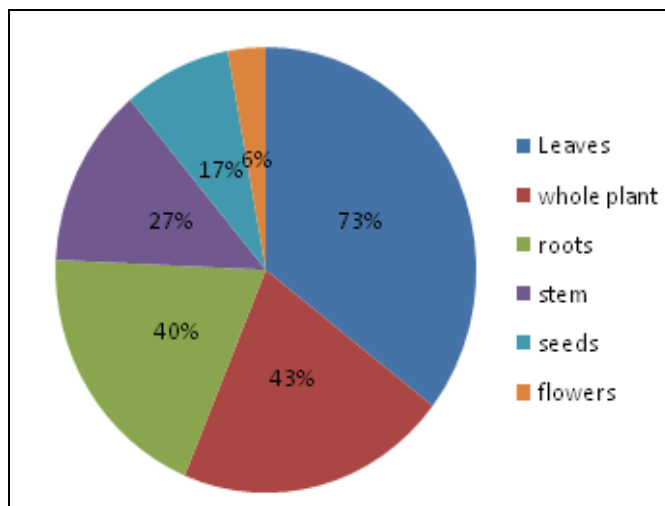


FIG. 2: PERCENT OF PLANT PARTS USED ETHNO-MEDICINALLY



*PHYLLANTHUS NIRURI**DATURA METEL**LANTANA INDICA**OCIMUM BASILICUM**OXALIS CORNICULATA**POLYGONUM BARBATUM**RAUWOLFIA TETRAPHYLLA**SACCHARUM SPONTANEUM**SIDA CORDIFOLIA**SOLANUM NIGRUM**SONCHUS BRACHYOTUS**TRIDAX PROCUMBENS**WITHANIA SOMNIFERA**XANTHIUM STRUMARIUM*

CONCLUSION: Although weeds are known as unwanted plants, but uses of weeds as medicine has given new insight to plants research. Use of weeds for medicinal purposes is wide spreading and is of tremendous help. Weeds are mostly used by people in remote areas but now people all over the world are acknowledging the traditional uses and ethnobotanical values of weeds present in different parts of world. More exploration of medicinal values of weeds is proving that plants in any form are important for human life and treated as local heritage in their particular areas.

ACKNOWLEDGEMENT: The authors are thankful to the principal of Bipin Bihari College, Jhansi (U.P.), for providing facilities and the folklore people contacted for the present study for their help and cooperation.

CONFLICT OF INTEREST: There is no conflict of interest between the authors.

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How to cite this article:

Dassani S, Sharma TK and Richhariya J: Ethnomedicinal importance of rainy season weeds of Jhansi district. Int J Pharm Sci & Res 2022; 13(6): 2508-17. doi: 10.13040/IJPSR.0975-8232.13(6).2508-17.

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