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Indigenous Medicinal Plants of Rasra, Ballia District of Uttar Pradesh, India

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ABSTRACT

The study was conducted on indigenous medicinal plants of tehsil Rasra, Ballia district of Uttar Pradesh (India) to reveal the biodiversity of medicinal plants used as local healers and folklore medicine. There were 95 medicinal plants observed during the study. Documentation of such knowledge is important to evaluate the traditional exerts on the local flora. It is not only important for the conservation of indigenous knowledge, but also for drug development and economic gain for rural India.

KEYWORDS

Indigenous medicinal plants, Ethno-medicinal plants, Biodiversity, Rasra (Ballia, Uttar Pradesh, India)



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INTRODUCTION

India is one of the 17 mega biodiversity centers around the globe¹. Humans have always relied on plants for all their needs from living to sustenance. Plants have been used as food as well as remedies for ailments time immemorial. Indigenous since medicinal plants are a wealth of India and traditionally they were obtained from the wild, where they grow naturally. India has a rich biodiversity of medicinal plants and especially the North-East region are the richest reservoir of medicinal wealth. Many ethnobotanical survey studies have done in North-Eastern India, but no one mentioned the medicinal biodiversity of tehsil Rasra, of district Ballia, Uttar Pradesh ²⁻³. The ethnomedicinal survey always has been considered as the right way to study of traditional herbal knowledge. The present paper is an attempt to focus and record the ethnomedicinal plants present in Rasra, Ballia.

MATERIALS AND METHODS

Defining study area:

The survey study of medicinal plants was conducted from March 2015 to December 2015 in tehsil Rasra, in district Ballia, Uttar Pradesh, of North-East India. The

geographical location of the area is confined between 25° 51' North latitudes and 83° 51' East longitude, distributed in 19 sq. km ⁴. Rasra is also known as 'Nath Nagari'. The name of the city is based on the fact that sugar was made from rotten sugarcane in past time. The land has balanced weather all over the year and belongs to the most important geographical land area of Himalayan range ⁵.



Fig 1 Geographical location of tehsil Rasra, in district Ballia of Uttar Pradesh (India)

Soil:

The land is a part of the Indo-Gangetic plain. The soil of the area in general or a mixture of Khadar (new alluvial) and Bangar (old alluvial).

Rainfall:

The normal rainfall in the area is 902.6 mm to 1012.2 mm 89.17% of the rainfall is reported in monsoon months (June to September) and 7.47% is in summer months (March to May). During the winter season



rainfall falls to 1.59% and 0.49% in post monsoon season.

Temperature:

The maximum temperature in the present ranges between 23.9°c in January and 41.8°c in May. The minimum temperature ranges between 9.9°c in January and 26.8°c in June. The temperature in Rasra tehsil gradually increases from 23.9°c in January to 26.6°c in February, 32.9°c in April and 41.8°c on May⁶.

Data collection and identification of plant species:

The study was done for the collection of medicinal plants. They were identified by common names, botanical names, family, useful parts and its uses. The ethnomedicinal uses were also recorded from local *Vaidyas*, villagers and experienced peoples.

RESULTS

The survey covered medicinal plants in the proposed area and 95 plants species were collected, identified and listed. The medicinal plants were compilated in their common name, botanical name, family, parts used and ethnomedicinal uses⁷⁻⁸

Table 1 Ethno-medicinal plants of the present area

S.N	Commo n name	Botanical name/ Family	Parts used	Ethnomedicinal uses/uses in diseased condition ⁹⁻¹⁰
1.	Aamra	Spondias mangifera Willd./Anacardiaceae	Fruit, leaves, bark	Hemoptysis, diarrhea, earache
2.	Aanar	Punica granatum L. Punicaceae	Fruits, leaves, whole plant	heart problem, eye and ear disorder, tonic, migraine, jaundice, vomiting, piles, worms
3.	Awla	Emblica officinalis Gaertn./ Euphorbiaceae	Seeds, fruits, leaves, bark	Constipation, arthritis, fever, itching, digestive, hair fall, diabetes, eye and skin problem
4.	Arandi	Ricinus communis L./ Euphorbiaceae	Leaves, seeds	Seed oil in purgative, piles, joint pain, hair fall, skin disease, headache
5.	Adrakh	Zinziber officinalis Rosc./ Zingiberaceae	Tubers, juice	Cough, breathlessness, throat cleaner, appetizer, diuretic, earache
6.	Adusa	Adhatoda vasica L./ Acanthaceae	Leaves, root, whole plant	Asthma, urinary problem, piles, cough,
7.	Ajwaain	Trachyspermum ammi L./ Umbelliferae	Fruits, flowers, leaves, sattva	Appetizer, digestive, anti-colic, wormicide, anti-cholera and diarrhea
8.	Amaltas	Cassia fistula L./ Fabaceae	Leaves, root, seeds, wood	Fever, jaundice, diabetes, Ringworm, wound, fever, leprosy, cough, cervical adenitis, arthritis, erysipelas, venereal disease, stria gravidarum
	Amarbel	Cuscuta reflexa Roxb./Convolvulaceae	Seeds, whole plant	Carminative, wound, antiscabetic, hepatomegaly



9.	Apamarg	Achyranthus aspera	Roots, seeds, leaves,	Piles, diuretic, wormicide,
).	Apamarg	L./Amaranthaceae	whole plants	digestive, anti-colic, urinary disorder, earache, snakebite,
				scorpion bite, dog bite
10.	Aparajita	Clitoria ternatea L./ Fabaceae	Roots, flowers, leaves, seeds	Analgesic, laxative, memory enhancers, headache, earache
11.	Arjun	Terminalia arjuna Roxb./ Combretaceae	Bark, leaves	Heart and liver disease
12.	Arjun	Terminalia arjuna W. & A./ Combretaceae	Bark	Carditonic, cough, styptic, diabetes, fracture
13.	Arui	Colocasia antiquorum Schott./Araceae	Tubers, leaves	Styptic, wound healer, piles, hepatomegaly
14.	Baans	Bambusa arundinacea L./ Poaceae	Whole plant	Diabetes, amenorrhoea, piles, wound healing, eye disease
15.	Badi kateri	Solanum indicum L./ Solanaceae	Fruit, root	Anorexia, alopecia, conception, fever, cough, eye-ear disease, colitis, piles,
16.	Barhal	Artocarpus lakoocha Wall. Ex Roxb./ Moraceae	Fruit, root, bark	Ripe fruit- liver tonic, purgative, hypoglycemic, hypolipidemic
17.	Bela	Aegle marmelos Corr./ Rutaceae	Roots, bark, fruits, leaves, flowers	Diarrhea, cholera, colitis, diabetes, jaundice
18.	Ber	Zizyphus jujube Miller./ Rhamnaceae	Fruits, leaves, bark, stem	Ulcer, fever, wound, abdominal pain, asthma,
19.	Bhant	Clerodendrum infortunatum L./ Verbenaceae	Roots, leaves	Antipyretic, wormicidal, skin disease, abdominal colic, diarrhea
20.	Bhat kataiya	Solanum xanthocarpum S&W./ Solanaceae	Roots	Cough, breathlessness, sneezing, antipyretic, diuretic,
21.	Bhringraj	Eclipta alba Hassk./Compositae	Whole plant	Bronchial asthma, cough, vitiligo, graying of hair, eye disease, night blindness, rejuvanative, sinus, scrofula, gastritis, headache, dysentery, vaginal pain
22.	Chakram ard	Cassia tora L./ Casealpiniaceae	Seeds, leaves	Digestives, appetizer, skin purifier, purgative, wormicide, antipyretic
23.	Chameli	Jasmminum grandiflorum L./ Oleaceae	Leaves, root, flowers, oil	Wound, vomiting, calculus, dysuria, stomatitis, headache, mouth disease, skin disease, ear problem, worm, perfume making
24.	Champa	Michelia champaca L./ Magnoliaceae	Flowers, bark, root bark	Antipyretic, diuretic, skin disease, menstrual
25.	Chaulai	Amaranthus spinosus L./ Amaranthaceae	Roots, whole plant	Diuretic, coolant, menstrual disorders, galactagogue, glandular disease
26.	Chakotra	Citrus paradisi Macfad/ Rutaceae	Fruit, flower, seed, leaves	Cough, fever, gastric disorders
27.	Chaupati a	Oxalis corniculata L./ Oxalidaceae	Whole plant	Rectum prolapse, bloody colitis, anti-inflammatory, antidote of dhatura poisoning
28.	Choti kateri	Solanum surattense Burm.f/ xanthocarpum S&W./Solanaceae	Whole plant	Piles, cough, bronchial asthma, coryza, flatulence, fever, epilepsy, suppression-retention of urine,



				calculus, thirst, eye-ear disease, chronic cough in children,
29.	Dhatura	Dhatura strumoniun L./ Solanaceae	Leaves, whole plant	Eye problem, asthma, arthritis, headache, male impotency,
30.	Dudhi	Euphorbia hirta L./ Euphorbiaceae	Root, leaves	Cough, dysentery, Anti-asthmatic, galactagogue
31.	Durva	Cynodon dactylon Pers./Poaceae	Whole plant	Hemorrhage, bleeding piles, erysipelas, wound, skin disease, vomiting, amenorrhea
32.	Ghamhaa r	Gmelina arborea Roxb. / Verbenaceae	Root, flowers, fruit, bark, leaves, wood	Fever, diarrhea, piles, hemorrhage, anemia, thirst, gout, urticaria, graying of hairs, weakness, wound, Coolant, analgesic, galactagogue, styptics
33.	Ghrit Kumari	Aleo vera L./ Liliaceae	Leaves	Spleen enlargement, jaundice, dysurea, headache, mastitis, amenorrhoea, skin- rejuvenator, burns, wound, fracture, eye burn, epilepsy, wart
34.	Giloy	Tinospora cordifolia (Wild.)/ Menispermaceae	Whole plant	Piles, eye problem, fiver, jaundice, arthritis
35.	Gokshur	Tribulus terristris L./ Zygophyllaceae	Roots, fruits	Diuretic, coolant, anti- inflammatory, kidney disorders
36.	Gular	Ficus glomerata Roxb./ Moraceae	Fruits, milky latex	Diabetes, asthma, piles, urinary problem
37.	Gulmoha r	Delonix regia Boj./ Fabaceae	Leaves, flowers, wood	Skin trouble, coloring,
38.	Guma	Leucas cephalotes Spreng./ Labiatae	Whole plant	Sweat producer, anticough, sneezing, antipyretic, anti-colic
39.	Haldi	Curcuma longa L./ Zinziberaceae	Tubers, juice	Antiallergic, antidiabetic, anti- jaundice, anti-melasma, anti- itching, antibacterial, anti- inflammatory, immunomodulator
40.	Harsinga r	Nyctanthes arbortritis L./ Nyctaginaceae	Stem, flowers	Diabetes, arthritis, sciatica, neural pain, ringworm, tonsillitis, splenomegaly, eye pain
41.	Ikshu	Saccharum officinarum L./ Poaceae	Root, juice, sugar	Hemorrhage, colitis, cough, hiccough, thirst, emaciation, anemia, erysipelas
42.	Jaamun	Syzygium cumini L./Myrtaceae	Leaf, bark, fruit, seed	Diarhhoea, hemorrhage, vomiting, sluggish digestion, freckles, wound, earache, ophthalmia neonatorum, colitis
43.	Jal-neem			
44.	Jamikand	Amorphophallus campanulatus Blume./ Araceae	Tubers, leaves	Digestive, appetizer, piles, cough, splenomegaly
45.	Jharber	Zizyphus nummularia W &A./ Rhamnaceae	Fruits, leaves	Coolant, colitis, skin disease
46.	Jungle Jalebi	Pithecellobium dulce Roxb./ Fabaceae	Fruits, root bark, seeds, leaves	Venereal sores, muscular swelling,, diarrhea, dysentery, hemoptysis, febrifuge



47.	Kaali sarso	Brassica juncea Czern & Coss./ Brassicaceae	Seeds	Enlargement of liver and spleen
48.	Kaasmar d	Cassia occidentalis L./ Casealpiniaceae	Seeds, roots, leaves	Throat cleanser, cough, breathlessness, antipyretic, skin disease, wound, constipation
49.	Kaastdar u	Polyalthia longifolia Benth. & Hook.f./Annonaceae	Bark	Antipyretic
50.	Kadamb	Anthocephalous indicus Miq./ Rubiaceae	Bark, root, leaves	Wounds, gravels, calculus, urine discoloration, dysuria, worms, diarrhea
51.	Kanchna r	Bauhinia variegata L./Caesalpinioideae	Bark	Gandamala, pox
52.	Kanghi	Abutilon indicum L./ Malvaceae	Roots, leaves	Rejuvenator, analgesic, menorrhagia, diuretic, kidney disorders, piles
53.	Karanj	Pongamia pinnata Mars L./ Fabaceae	Seeds, leaves	Leucoderma, anti-parasitic, malaria
54.	Karela	Mimordica charantia L./ Cucurbitaceae	Fruits, leaves,	Wormicidal, diuretic, laxative, blood sugar lowering, gout, rheumatoid arthritis, hepatic- splenomegaly
55.	Karonda	Carissa carandus L./ Apocynaceae	Root, fruits, leaves	Thirst, blood purifier, astringent, appetizer, antipyretic, constipation
56.	Kewanch	Mucuna prurita Hook./ Papilionaceae	Seeds, hair, root	Aphrodisiac, worms, muscular weakness in arm
57.	Khair	Acacia catechu Willd./Mimosoideae	Root, heartwood, flowers	Kustha, vitiligo, skin disorders, pox, fistula-ano, cough, hemorrhage, urinary disorders, filarial, boils
58.	Koyilar	Bauhinia purpurea L./ Caesalpinioideae	Flowers, root	Intrinsic hemorrhage, piles, snake bite
59.	Kusmand	Benincasa hispidai Thunb. Cong./ Cucurbitaceae	Fruit, seed	Memory enhancer, tranquilizer, laxative, helminthicide, coagulant, cardiac stimulant, diuretic, spermatogenic
60.	Lahsun	Allium sativum L./ Liliaceae	Tubers	Rubefacient, pneumonia, bronchitis, dyspepsia, typhoid fever, antiseptic
61.	Mahua	Madhuca indica Gmel./ Sapotaceae	Flowers, whole plant	Hemorrhage, colitis, thirst, antimicrobial, skin disease, fracture, hiccough, vomiting, scrofula, poisoning, wine/liquor
62.	Mandukp arni			, , , , , , , , , , , , , , , , , , , ,
63.	Mehandi	Lawsonia inermis L./ Lythraceae	Seeds, leaves, root	Diabetes, tuberculosis, Eye disorder, hairfall and colouring, burn, jaundice, headache, stomach problem, hemorrhage
64.	Nagarmo tha	Cyperus scariosus Br. Prodr./Cyperaceae	Rhizome	Carminative, galactogogue, hematinic, appetizer, menorrhagia, urine discharge, edema, piles, lumbago, scorpion sting,



				diaphoretic, diuretic, epilepsy, diarrhea, syphilis, gonorrhea
65.	Narkat	Arundo donex L./ Poaceae	Root	Fever, retention of urine, erysipelas, rabies
66.	Neem	Azadirachta indica A. juss./ Maliaceae	Seed oil, bark, leaves, wood, fruit	Fever, hemorrhage, bleeding piles, wound, urticaria, Eczema, boils, gout, skin disease, diabetes, gastritis, ear-toothache, malaria, anti-microbial, toothbrush, chicken pox, blood purification, jaundice, galactopurifier
67.	Neembu	Citrus limon L./ Rutaceae	Fruit	Indigestion, gastritis, pox, earache
68.	Pakar	Ficus lacor Buch-Ham./ Moraceae	Leaf, bark,	Meno-metrorrhagia, hemorrhage, bloody diarrhea, erysipelas, inflammation, wound
69.	Papita	Carica papaya L./ Caricaceae	Leaves, fruit, seeds, latex	Liver enlargement, piles, laxative, appetizer, digestant, acne
70.	Parval	Trichosanthes dioica Roxb./ Cucurbitaceae	Fruit, leaves, roots	Antipyretic, coolant, blood purifier, laxative, skin disease
71.	Peela Sarso	Brassica campestris L./ Brassicaceae	Seed, oil, leaf	Cholera, skin disease, abdominal discomfort, edema, gout, filaria, scrofula, wound, tinnitus, coryza, insect poisoning, splenomegaly, epilepsy, insanity, eczema,
72.	Peepal	Ficus religiosa L./ Moraceae	Whole plants, latex	Eczema, toothache, leucorrhoea, cut and wound, earache, cough and cold, jaundice, stomach pain,
73.	Pitbala	Sida rhombifolia L./ Malvaceae	Leaves	Rheumatoid arthritis, cold fever, dysuria, wound
74.	Punarnav a	Boerhaavia diffusa L/. Nyctaginaceae	Whole plant	Urinary stone, arthritis, anaemia, oedema, abscess, rejuanative, hemoptysis, fever, amavata, gulma, vaginal pain
75.	Rakta madar	Calotropis procera L./ Asclepiadaceae	Roots, milk, leaf, flowers	Abortifacient, emetic, laxative, blood purifier, skin disease, cough, chronic fever
76.	Ramdana	Amaranthus caudatus L./ Amaranthaceae	Leaves, seeds, whole plant	Piles, dysuria, glandular disease,
77.	Ramtulsi	Osmium basilicum L. / Lamiaceae	Leaves, seeds, root	Fever, catarrh, colic pain, worms, thirst, diuretic, galactogogue, inflammations, splenomegaly, expectorant, diarrhea, joint pain, dysentery, leucoderma, gonorrhea, ringworm, scorpion bite
78.	Sahijan	Moringa oleifera Lam./ Moringaceae	Roots, bark, leaves, flowers, fruits, seeds	Hiccough, asthma, colic pain, edema, erysipelas, guinea worm, calculus, scrofula, abscess, ear and eye disease, piles, kustha, headache, worms, gout, chest pain, ringworm, coryza, wound pox, loss of consciousness, sleepiness
79.	Sahtut			



80.	Sarpat	Saccharum munja Roxb./ Poaceae	Root	Rasayana, aphrodisiac, calculus, scrotal enlargement, cough, thirst,
81.	Sarifa			
82.	Satavar	Asparagus racemosus Wild./ Liliaceae	Whole plant	Female genital disease, rejuvenative, aphrodisiac, galactagogue, dysuria, fever, epilepsy, gout, poisoning, cough, piles, wound, weakness, cough, diarrhea, headache, asthma
83.	Semal	Bombax malabaricum DC./ Bombacaceae	Flowers, gum resins, tubers	Rejuvenator, aphrodisiac, diuretic, piles, acne
84.	Shisham	Dalbergia sissoo Roxb./ Fabaceae	Oil, leaves, whole plant	Skin disorder, toothache, eye ailments, burning sensation,
85.	Singhara	Trapa bispinosa Roxb./Trapaceae	Fruits	Galactogogue, aphrodisiac, hemorrhage, cough, asthma, chest pain, thirst, dysuria, urinary disorders, erysipelas, gout, fracture
86.	Siris	Albizia lebbek Benth/ Fabaceae	Root, flowers, seeds, bark, stem, root, flowers	Hiccough, asthma, skin disease, worm, obesity, boils, wound, headache, poisoning, insect bite, erysipelas, eye disease, fever
87.	Safed Madar	Calotropis gigantea L./ Asclepiadaceae	Roots, milk, leaves, flowers	Abortifacient, emetic, laxative, blood purifier, skin disease, cough, chronic fever
88.	Taad	Borassus flabellifer L./ Palmae	Fruits, seeds, exudates	Coolant, diuretic, hyperacidity, hepatic-splenomegaly, mood altering
89.	Tambaku	Nicotiana tabacum L./ Solanaceae	Leaves	Toothache, inflammation
90.	Thuhar	Euphorbia neriifolia L./ Euphorbiaceae	Roots, milk, leaf juice	Severe laxative, diuretic, partum fever, snake bite, earache, breathlessness
91.	Tissi	Linum usitatissimum L./ Linaceae	Seeds	Anti-inflammatory, analgesic, cough
92.	Vantulsa/ Kaalituls i	Osmium sanctum L. / Lamiaceae	Leaves, seeds, root	Cough-cold, catarrh, antipyretic, anthelmintic, stomachic, asthma, bronchitis, hiccough, scorpion sting ²
93.	Bargad	Ficus bengalensis L./Moraceae	Leaf, leaf buds, hanging roots, latex, bark	Diarrhea, vomiting, thirst, bone growth, conception of a male child, for conception, metrorrhagia, hemorrhage, fever, wound and freckles
94.	Veertaru	Dicrostacys cineraria W &A/ Araceae	Roots, leaves	Rheumatoid arthritis, urolithiasis, eye diseases

DISCUSSION

In the present study, there are 95 medicinally important plant species belong to 52 families, were collected from the proposed area around

the tehsil Rasra of district Ballia (Uttar Pradesh). Their common name, botanical name, family name, parts used and medicinal properties have been presented in Table 1.



Fabaceae represent highest no. of species as 7 species, followed by Solanaceae and Moraceae 5 species, as Poaceae, Amaranthaceae, Euphorbiaceae, Cucurbitaceae and Caesalpinoideae as 4 species then Rhamnaceae, Araceae, Rutaceae represent 3 species, Caricaceae, Lamiacae, Verbenaceae, Combretaceae, Brassicaceae, Asclepidaceae, Zingiberaceae, Malvaceae. Chenopodiaceae, Liliaceae, Nyctanginaceae represent 2 species and rest 30 families Maliaceae. Lathyraceae, Sapotaceae, Oleaceae. Apocynaceae, Punicaceae. Acanthaceae, Menispermaceae, Moringaceae, Anacardiaceae, Mimosoidae, Rubiaceae, Compositae, Myrtaceae, Bombacaceae, Papilionaceae, Cyperaceae, Trapaceae, Umbeliferae, Convolvulaceae, Linaceae.. Liliaceae. Oxalidaceae. Verbenaceae, Zygophyllaceae, Labiatae, Oleaceae,, Magnoliaceae, Palmae and Annonaceae represent one-one species. These medicinal plants have been used traditionally as remedies for various diseases as piles, fever, headache, colic pain, wound, toxic conditions, weakness, cough, diarrhea, headache, asthma, urinary disorder, jaundice, arthritis, skin disorder, toothache, heart and liver disease. Frequently parts used are

leaves, fruits, flower, stem, root and seeds. Traditionally these medicinal plants have been frequently used in the form of juice, paste, powder, decoctions and extracts forms.

CONCLUSION

The study showed that indigenous knowledge and application of medicinal plants for the treatment of various diseased conditions by the rural population are still in their traditional culture. The ethnomedicinal knowledge has been transmitted from generation to generation either in the source form or in elaborated form. The information collected from local healers indicates sound knowledge about traditional medicine. The present study provides evidence of medicinal plants continue to play an important role in the rural healthcare of tehsil Rasra, of district Ballia, Uttar Pradesh (India). The indigenous knowledge of a particular area is the scientific way to analyze the best utilization of natural resources and biodiversity. The author recommends the further extensive study is required for the elaboration of pharmacotherapeutics of these drugs and also find out the presence of extrapharmacopoeial drugs (Anukta Dravya in Ayurveda) in this area for scientific validation.





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