



## Ethnomedicinal survey of flora of Ajmer region, Rajasthan

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### Abstract

The present study of traditional knowledge on folkloric medicines shows that 70 plant species belonging to 44 families and 6 types of habit are used in daily life by the local community for various diseases such as inflammation, diarrhea, dysentery, skin diseases, fever, cough and asthma, jaundice, gonorrhoea, hair issues, kidney problems, urine disorders and wound healing etc. The present investigation is aimed to create awareness about the ethnomedicinal value of the plants and their uses to draw the attention of pharmacologists, phytochemists and pharmaceuticals.

**Keywords:** Folkloric medicine, ethnomedicinal, plants, conservation efforts

### Introduction

Ethnomedicine is a field of study that investigates the customary medical practices that pertain to the cultural understanding of health, disease, and illness, as well as the procedures involved in seeking healthcare and methods of healing. The term ethnomedicine pertains to the understanding and concepts surrounding healthcare and wellness (Quinlan, 2022) [5]. The potential for ethnobotany to contribute to sustainable development and biodiversity conservation is a subject of great interest for researchers and practitioners alike. Ethnobotany is a field of study that intersects with various traditional scientific disciplines, including ethnomedicine and ethnopharmacology, among others (Ramakrishna, 2022) [6]. Additionally, it is a well-established fact that numerous significant pharmaceuticals utilized in contemporary medicine were extracted from plants or possess lead compounds that originate from plants (Kumari and Joshi, 2023) [4].

The World Health Organization estimates that about 80% of the population of most developing countries relies on herbal medicines for their primary health care needs. About 610 species of medicinal plants have been used by 42 lakhs population of tribals of Rajasthan. Rajasthan, where 80% of its people live in the rural areas and cannot afford costly medicine. They depend on vegetation surrounding them and make perfect uses of them for their medicinal needs (Sultan *et al.* 2010; Ernest, 2017) [1, 7]. A floristic survey of ethnomedicinal plants occurring in the tribal area of Rajasthan was conducted to assess the potentiality of plant resources for modern treatments (Kumar, 2018) [3]. Keeping in view the importance of medicinal flora, this study was arranged to document and collect Ethnomedicinal tribe and ethnomedicinal knowledge about the wild plants of Ajmer region, Rajasthan.

### Methodology

Field survey was conducted at Ajmer, Nagaur and Tonk Districts of Ajmer region. Interaction was done by tribal,

local and old age people of the area. Questionnaire method was used to gather the information about medicinal properties of plants.

### Results and Discussion

The practice of medicine among tribal people and villagers follows the same pattern of two thousand years ago, there is hardly any change (Harsh and Tak, 2018) [2]. The indigenous traditional knowledge of herbal plants of communities where it has been transmitted orally for many years is fast disappearing from the face of world due to transformation of traditional culture (Hussain *et al.* 2008).

Information regarding the botanical name of plant, common name of plants, family, part used and their ethnomedicinal uses are listed in Table 1. This table enumerates the data obtained during the investigation. Plant diversity of Ajmer region is of ecological and economic importance. This table depicts that the flora (70 species) of studied area has 6 types of habitat, *viz.* Tree, Shrub, Undershrub, Subshrub, Herb and climber. Most of the plants belongs to Herb (23 species, 33%) followed by Shrub (20 species, 29%) and Tree (13 species, 18%) categories. Other species are distributed in climber (9, 13%), Undershrub (4, 6%), Subshrub (1, 1%) category. During the survey, 70 species of medicinal plants belonging to 44 botanical families were reported to be used in traditional medicines. Fabaceae with 6 species is the dominant family, followed by Solanaceae with 4 species.

From the data, it could be inferred that for more number of remedies fresh leaf materials is used followed by whole plant, root, fruits, stem and flowers. During the study period, it was observed that increasing human population and interference in the protected areas are disturbing many endemic plant species. Another leading problem is livestock grazing, which leads to the destruction of habitat. Over grazing also leads to the destruction of various plant seedlings and restricted forest regeneration (Gupta and Yadav, 2023).

**Table 1:** Medicinal plants used by tribals in Ajmer Division

Sr. No.	Plant Name	Common Name	Family	Habit	Plant Part Used	Ethno-medicinal Uses
1.	<i>Abutilon indicum</i>	Kanghi	Malvaceae	Shrub	Leaves, Stem, Root	Decoction of leaves used to cure gonorrhoea.

						Root is anti-inflammatory and diuretic
2.	<i>Achyranthes aspera</i>	Undo-Kanto	Amaranthaceae	Herb	Whole Plant	The ash of dried plant has high percentage of potash and used as antacid, A bath with the decoction of whole plant to cure itching and skin disease, Seeds mixed with milk are used as tonic
3.	<i>Adhatoda vasica</i>	Adusa	Acanthaceae	Shrub	Leaves, Stem	The drug "Vasaka" is used in cough and asthma is a Juice of its leaves The paste of leaf and stem is beneficial in healing wounds
4.	<i>Aegle marmelos</i>	Beel patra	Rutaceae	Tree	Fruit	Ripe fruits are aromatic, cooling, laxative and used in constipation, and peptic-ulcer, Unripe fruit is very effective in case of Chronic diarrhea and dysentery, its leaves are rich of tannin. It reduces inflammation
5.	<i>Aloe vera</i>	Gwarpatha	Liliaceae	Herb	Juice, Leaf and pulp	Drug "aloe" is prepared by the leaf of the plant, it is externally applied on inflamed painful parts of the body, Pulp is used in eye flew
6.	<i>Argemone mexicana</i>	Satyanasi	Papaveraceae	Herb	Leaves, Flower, Root	Plant juice is used in eye infection, Roots are useful in chronic skin disease; Inflorescence juice is used as blood purifier
7.	<i>Aristolochia bracteolata</i>	Hukka Bel	Aristolochaiaceae	Herb	Leaves	Powder of dried plant is used as an anthelmintic and anti-inflammatory, Leaf juice mixed with mustard oil is used to cure skin disease like eczema
8.	<i>Asparagus racemosus</i>	Satawari	Liliaceae	Shrub	Root	Root powder is an aphrodisiac, it is used as tonic in winter by local people, it is given to increase breast milk after delivery
9.	<i>Azadirachta indica</i>	Neem	Meliaceae	Tree	Whole plant	The leaves are applied externally for skin problems, washing of hair with leaf decoction stops hair loss and dandruff
10.	<i>Baccopa monnieri</i>	Brahmi	Scrophulariaceae	Herb	Leaves, Flowers	Dried powder is used in memory enhancement, Flowers are used for skin problems
11.	<i>Balanites aegyptiaca</i>	Hingota	Balanitaceae	Tree	Fruit, Seed, Root	Seed powder and root powder is used in chronic bronchitis, Fruit pulp is used in acne and vulgarism
12.	<i>Barleria prionitis</i>	Bajardanti	Acanthaceae	Shrub	Leaves, Stem, Flowers	The decoction of whole plant is used in the treatment of toothache and to cure bleeding gums, the stem juice is useful in fever and cough
13.	<i>Blepharis indica</i>	Untkatalo	Acanthaceae	Undershru b	Seeds, Leaves	Seeds are diuretic, expectorant and aphrodisiac, Seeds boiled with milk are taken as tonic, Seeds and leaves are also given to cattle to increase milk production
14.	<i>Boerhavia diffusa</i>	Santi	Nyctaginaceae	Herb	Whole plant	The "Punarnava" Ayurveda drug is prepared by whole plant. It is diuretic, antipyretic and laxative, Fresh juice of the plant is given as blood purifier
15.	<i>Boswellia serrata</i>	Salar	Burseraceae	Tree	Gum, Bark	Bark powder is used in diarrhea, Gum is used in chronic ulsar
16.	<i>Butea monosperma</i>	Dhak	Fabaceae	Tree	Gum, Flower	Paste of seed and flowers is used for ring worm and skin diseases, Gum is given to female after delivery called "kamarkas"
17.	<i>Calligonum polygonoides</i>	Phogra	Polygonaceae	Shrub	Whole plant	The aqueous paste of whole plant is given orally to the person, who has taken heavy dose of opium, Flower buds are effective in sun-stroke
18.	<i>Capparis decidua</i>	Kair	Capparaceae	Shrub	Fruit, Stem, Root	Fruits are edible and used in "Pachkuta" a famous vegetable and are beneficial in cardiac problems, The paste of branches is used in swelling
19.	<i>Capparis seiparia</i>	Heens	Capparaceae	Shrub	Leaves	Leaf juice is externally used for skin problems
20.	<i>Cardiospermum halicacabum</i>	Aank Phootni Ki bel	Sapindaceae	Climber	Whole plant	It promotes hair growth, Juice of plant cures earache, It is applied in snake and scorpion bite, The extract of plant is used to regulate the menstrual cycle

21.	<i>Cassia fistula</i>	Amaltas	Caesalpiniaceae	Small Tree	Fruit, Seeds, Flowers	The pulp of dried pods is well known safe purgative, A decoction of the pods is used in dry cough, the powdered seeds are used to cure intestinal amoebiasis
22.	<i>Ceropegia bulbosa</i>	Suvakhadul	Asclepiadaceae	Climber	Bulb	Tribals eat its bulb as tonic
23.	<i>Cissus quadrangularis</i>	Hadjod	Vitaceae	Shrub	Stem	The crushed stem is applied for bone setting in fracture of bones. It is fried in butter and eaten for a weak for early bone setting
24.	<i>Citrullus colocynthis</i>	Tetumbo	Cucurbitaceae	Herb	Fruit, Root	The "Indrayan" Ayurveda drug is prepared by fruit, it is antipyretic, anthelmintic and used for gastric problems. Root powder is effective in jaundice
25.	<i>Cleomegynandra</i>	Hulhul	Capparidaceae	Herb	Whole plant	Plant juice is given in weakness after fever, Seed powder used for piles
26.	<i>Cocculus hirsutus</i>	Jal Jamni Ki bel	Menispermaceae	Climber	Leaves, Stem	Leaves juice mixed with water from a jelly like substance, a cooling medicine for gonorrhoea and as an aphrodisiac, the decoction of leaves is used in leucorrhoea
27.	<i>Cocculus pendulus</i>	Pilwan	Menispermaceae	Shrub	Root, Leaf, Fruit	Aqueous leaf mixture forms a green jelly which is used externally for skin disease, Decoction of leaf is used in kidney pain
28.	<i>Clitoria ternatea</i>	Aparjita	Fabaceae	Climber	Root, Leaves	Root powder used for snake bite, Juice is useful in jaundice
29.	<i>Commiphora wightii</i>	Guggal	Burseraceae	Shrub	Stem, Gum resin	It is source of a fragrant gum resin obtained from stem. In local medicine it is used as an antiseptic on old wounds, the smoke from burning guggal is inhaled to cure bronchial infection
30.	<i>Convolvulus microphyllus</i>	Shankh-Pushpi	Convolvulaceae	Climber	Whole plant	The whole plant is a source of an important drug in Ayurveda known as "Shankh-Pushpi"
31.	<i>Datura metal</i>	Kala-datura	Solanaceae	Shrub	Leaves	The dried leaves and seeds are used as antispasmodic and in critical condition of asthma and whooping cough, paste of leaves and seed oil is used to reduce rheumatic pain
32.	<i>Dendrophthoe falcata</i>	Banda	Loranthaceae	Subshrub	Flower, Leaves	Decoction is used for bronchitis and asthma
33.	<i>Dioscorea bulbifera</i>	Varahikand	Dioscoreaceae	Climber	Tuber	The powder is used for colitis and dysentery
34.	<i>Echinops echinatus</i>	Oonth Kantalo	Asteraceae	Herb	Whole plant	Root and seeds are aphrodisiac, Powdered roots are applied over wound of cattles' for early healing
35.	<i>Eclipta prostrata</i>	Bhrangraj	Asteraceae	Herb	Whole plant	Plant juice improves liver and spleen disorders, Decoction of herb is used to rinse hair to maintain the black color
36.	<i>Euphorbia caducifolia</i>	Danda Thor	Euphorbiaceae	Shrub	Root, Latex	The milky latex of plant is used as an expectorant. It is used locally as rubefacient, digestive and abortifacient, Latex is externally applied to skin blisters and wounds
37.	<i>Euphorbia hirta</i>	Dudhi	Euphorbiaceae	Herb	Whole plant	It is used in bronchial infection, cough and asthma, Whole plant extracts cheeks diarrhea and gonorrhoea
38.	<i>Evolvulus alsinoides</i>	Phooli	Convolvulaceae	Herb	Whole plant	Decoction of whole plant is useful in brain tonic, Flowers useful for treating the uterine bleeding, Seeds oil promotes the growth of hair
39.	<i>Fagonia indica</i>	Dhamaso	Zygophyllaceae	Undershrub	Whole plant	Decoction of whole plants cure fever, small pox and other skin disease, Decoction of leaves is blood purifier
40.	<i>Glycyrrhiza glabra</i>	Mulathi	Fabaceae	Herb	Rhizomes, Root	Rhizomes and roots use as tonic, It is useful in cough
41.	<i>Grewia tenax</i>	Gundi	Tiliaceae	Shurb	Stem, Root, Bark	Stem bark decoction is effective in cough and muscular pain, Fruits eaten by tribal have to quench thirst during summer season
42.	<i>Manilkara hexandara</i>	Khirani	Sapotaceae	Tree	Fruit, Bark	It is useful in epilepsy and skin disease
43.	<i>Maytenus emarginata</i>	Kankera	Celastraceae	Shrub	Leaf, Fruit	An ointment prepared by mixing burnt leaves ash and butter heal the wound, Leaf

						juice is taken for treatment jaundice and other liver disorders
44.	<i>Mimosa pudica</i>	Lajvanti	Minosaceae	Shrub	Whole plants	Whole plant use for vesicle calculi and externally for rheumatism, Seeds are aphrodisiac
45.	<i>Momordica dioca</i>	kakora	Cucurbitaceae	Climber	Fruits, Tuber	“Vanga Bhasma” prepare by tuber is useful for diabetes, Paste of tuber is applied for gland in breast
46.	<i>Mucana pruriens</i>	Konch	Fabaceae	Climber	Seed, Pod	Tablet of hair of pod is useful in intestine worm, Mixed powder of seed and fruit is useful in seminal weakness and erectile dysfunction
47.	<i>Pedaliium murex</i>	Gokharu	Pedaliaceae	Herb	Fruits	Fruits are aphrodisiac, Decoction of green fruit is useful for urine problem
48.	<i>Plumbago zeylanica</i>	Chitraka	Plumbaginaceae	Herb	Root	It is used in indigestion, diarrhea, piles and spleen enlargement
49.	<i>Portulaca oleracea</i>	Luni Kulfo	Portulacaceae	Herb	Whole plant	Eaten as vegetable for the treatment of scurvy and diseases of kidney, spleen and bladder
50.	<i>Prosopis cineraria</i>	Khejri	Mimosaceae	Small Tree	Leaf, Flower, Pod	Leaves paste is applied on injured part for early healing, Pod is eaten as vegetable called “Sangri” and “Panchkutta”, Decoction of young pods is used for curing pneumonia
51.	<i>Pueraria tuberosa</i>	Vidarikand	Fabaceae	Shrub	Tuber	It is used in “Chyavanparash” as a tonic
52.	<i>Salvadora oleoides</i>	Mitha Jal	Salvadoraceae	Tree	Stem, Leaves, Young branch	Sweet edible fruits are eaten raw which have cooling effect
53.	<i>Salvadora persica</i>	Karwa Jal, Pilu	Salvadoraceae	Shrub	Whole plant	Decoction of leaves is used in constipation problem, Young branches are used as toothbrush to cure the problem of toothache and gums
54.	<i>Sida cordifolia</i>	Bala	Malvaceae	Undershru b	Leaves, Root, Young branch	A tonic and aphrodisiac plant and also useful in neurological disorder, Powder of root is used for the treatment of urinary and nervous diseases
55.	<i>Solanum nigrum</i>	Makoi	Solanaceae	Shrub	Whole plant	Whole plant is effective in chronic skin disease such as acne and eczema, Decoction of dried fruits is given to mothers after delivery
56.	<i>Solanum surattense</i>	Kateli, Ringeni	Solanaceae	Herb	Whole plant	It is an important constituent of well-known ayurvedic drug “Dasamula”, Whole plant extract is effective in bronchial asthma
57.	<i>Sphaeranthus indicus</i>	Gorakhmundi	Asteraceae	Herb	Whole plant	Decoction of the plants is used in chronic rheumatism
58.	<i>Tamarindus indica</i>	Imli, Aamli	Caesapiniaceae	Tree	Fruit pulp, Flower, Seed, Leaves	Fruit pulp is used in traditional systems as refrigerant, digestive, laxative and Juice is beneficial in heat stroke, Powdered seeds are used to treat chronic diarrhea, dysentery
59.	<i>Tecomella undulata</i>	Rohiro	Bignoniaceae	Small Tree	Leaf, Flower, Stem	Paste of leaves and stem is used in treatment of various skin diseases, Leaf juice is mixed with water and used in pneumonia and typhoid, Flower gives an orange colour herbal dye
60.	<i>Tephrosia purpurea</i>	Mava, Sarphonto	Fabaceae	Herb	Root, Stem	Decoction of roots is given in rheumatism, Stem and root are used in the treatment of piles, skin disease and in stomach upset, it is also beneficial in disease of Kidney
61.	<i>Terminalia arjuna</i>	Arjun	Combretaceae	Tree	Bark	Powder is used in cardiac deability, hypertension and chronic fever also
62.	<i>Tinospora cordifolia</i>	Neem giloy	Menispermaceae	Climber	Whole plant	The decoction of stem is very useful in fever, Extract of plant is hypoglycemic, it is also used for treatment of jaundice
63.	<i>Tribulus terrestris</i>	Kanti, Chhota-Gokhru	Zygophyllaceae	Herb	Whole plant	Mucilaginous water extract of whole plant is taken as a remedy for impotency, Leaves are used in the treatment of stones in bladder
64.	<i>Trichodesma indicum</i>	Adhah pushpi	Boraginaceae	Herb	Leaves	Useful in burning sensation and skin disease
65.	<i>Tylophora indica</i>	Damabel, Antamua	Asclepiadaceae	Undershru b	Leaf, Root	Fresh roots are expectorant in whooping cough and bronchitis,

						Root paste is externally applied to relieve gout pain, Leaves are effective in the treatment of allergy
66.	<i>Urginea indica</i>	Jangli Kando	Liliaceae	Herb	Tubers, Bulb	Dried powdered bulb is given as cardiac tonic in small doses, It is used mainly in chronic bronchitis and asthma
67.	<i>Vitex negundo</i>	Nirgundi	Verbenaceae	Small Tree	Leaves, Flower, Seed	Decoction of leaves used to relieve body pain, Flowers are used in fever, Seeds are considered cooling and used to treat skin disease
68.	<i>Withania somnifera</i>	Aswagandha	Solanaceae	Herb	Root, Seed, Leaf	Plants is considered aphrodisiac, Fruits and seeds are diuretic
69.	<i>Ziziphus jujube</i>	Bada ber	Rhamnaceae	Shrub	Fruit-pulp, Leaves	Paste of fruit pulp is use for burnt skin, Leaves are used for conditioning of hair
70.	<i>Ziziphus nummularia</i>	Chota ber	Rhamnaceae	Shrub	Fruit-pulp, Leaves	Useful in eczema and hiccups, Leaf paste is used in skin problems

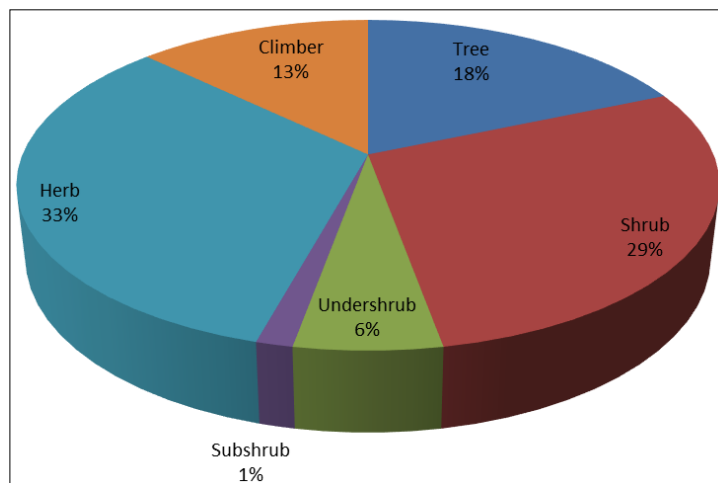


Fig 1: Habitwise Classification of Plants

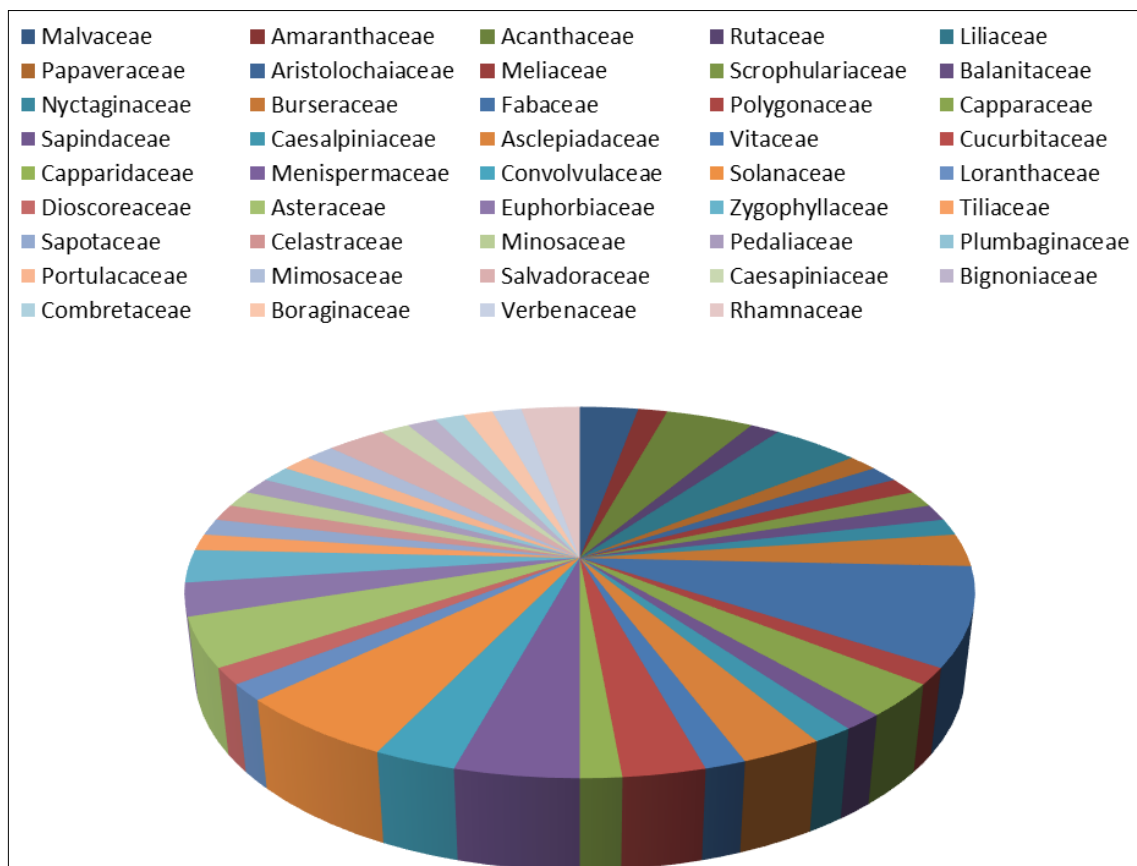


Fig 2: Familywise Classification of plants

## Conclusion

The observations and findings made under present investigation reveals that the ethnic groups and local people of the area are highly dependent on the natural plant resources surrounding their vicinity and these resources play an important role in their routine life. It is the need of the hour to focus immediate attention for the plant conservation from the government and NGOs with the help of local people by creating rapid awareness in them. By doing so we can change the economic and social conditions of the local inhabitants positively. All natural resources and related knowledge are very important. Therefore, both should be protected for the people who live in these regions where they do not have modern facilities for health care. Community knowledge should be raised into Community Knowledge Services (CKS) for all human being.

Dangwal *et al*: Ethno-Medicinal Plants of Nanda Devi Biosphere Reserve

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