

Survey-Analysis



## ETHNOMEDICINAL SURVEY OF PLANTS OF THAL DESERT CHOUBARADISTRICT LAYYAH, PUNJAB, PAKISTAN

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### ABSTRACT:

**Objective:** The purpose of this study was to document the indigenous folk knowledge of the inhabitants of the different places of the Choubara district Layyah and to find out the prevalence of plants.

**Methods:** A cross-sectional study was carried out using a semi-structured questionnaire to document knowledge of local inhabitants in medicinal plant use for treatment of human ailments.

**Results:** 78 plant species across 40 families were studied that showed medicinal uses by local inhabitants of the Thal Desert. The local name, botanical name and families of all plants were noted. The local inhabitants of Tehsil Choubara made use of 93.82% plants as medicine, 44.11% as fodder for their livestock, 12.34% as fuel wood, 12.34% as food in the form of vegetable, 8.64% as timber, 6.17% as food in the form of fruit and 17.28% for other uses like gum, for coloring agent, and as house hold utensils.

**Conclusion:** This study showed that traditional medicine, mainly involving the use of medicinal plants, is playing a significant role in meeting the primary healthcare needs of people living in that area. Acceptance of traditional medicine and limited access to modern healthcare facilities could be considered as the main factors for the continuation of the practice. Documented knowledge of the traditional healers can be used to support the country's human health care system and improve lives and livelihoods.

**KEYWORDS:** Ethnomedicinal, plants, Human ailments, Traditional medicine Thal, Choubara desert.

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**INTRODUCTION:**

Knowledge can arise from scientific or traditional sources. Traditional knowledge has been described as a cumulative body of knowledge, practice and belief, evolving through adaptive processes and handed over through generations by cultural transmission<sup>1</sup>. Primitive people primarily depended on plants for their existence. They acquired understanding of medicinal plants by approaches of trial and error. Consequently, they became the store-house of knowledge of valuable as well as injurious plants, accumulated and enriched through generations and passed on from one generation to another, after refining and additions<sup>2</sup>. Moreover, the World Health Organization (WHO) has reported that about 80% of the world population relies on traditional medicine to cure ailments<sup>3</sup>. The medicinal plants are potential renewable natural resources. According to an estimate between 35,000 and 70,000 species are used in folk medicine worldwide<sup>4</sup>.

The Choubara Thal Desert is situated in north east of Punjab Pakistan. Its total length from North to South is 190 miles and its maximum breadth is 70 miles (110 Km) while minimum breadth is 20 miles. Geographically, it resembles the desert of Cholistan and Thar. While its climate is arid to extremely arid; rainfall 90 mm per annum in south and 350 mm in the north in summer 60-70% and in winter 30-40% rain. The temperature of Thal desert Choubara is in the range of 32-40 °C in summer (May to August) with maximum 45-50°C and in winter (January) has range of 3-8 °C. Hot and desiccating winds prevail from April to August with velocity of 90 Km/hr. It occupies 694482 Acres as 45% of total areas of district Layyah. It mostly consist of irrigated zones that contain sand dunes.

The main tribes living there includes, Cheenna (Jutt), Sundilah (Jutt), Naich (Jutt), Aheer, Bhachar, Johiya, Mammak, Chinna, Baloch, Tiwana, Sial, Baghoor, Awans, Rahdari, Lashari, Jhammat, Ghai, Waghra's Aulakh and Majoka.

The worth of medicinal plants to the mankind is very well proven<sup>5</sup>. Pakistan has a high diversity of plants that are being used by local communities for medicinal purposes. Proper usages of these plants are commonly practiced at the community and end-user level<sup>6,7</sup>.

Indigenous medicine is now recognized by WHO

(2002, 1978) as an important healthcare resource due to its effectiveness and affordable cost. But traditional use of medicinal plants is continuously decreasing with the easy availability of the modern medicines and unavailability of information on local flora of medicinal importance.

Due to absence of health amenities, people living in remote rural/tribal areas are using indigenous plants as medicines from long, because, this knowledge reaches them through experiences of parental generations<sup>8</sup>. These medicines have less side effects and man can get the herbs easily from nature. Unani system is dominant in Pakistan but the ethnomedicinal plant's use is also seen in the remote areas<sup>9</sup>.

Deserts being difficult to access and their hostile climates are ignored by researchers to explore flora and their uses in the country. The preliminary work is done by Arshad & Rao (1994) on Flora of Cholistan Desert, Punjab. Nara Desert, Pakistan<sup>10,11</sup>.

In this paper we will discuss ethnomedicinal flora of Thal desert of Choubara district, Layyah which reports the survey of 78 plants belonging to 40 families. Local names, Botanical names, Families, Parts used and medicinal uses will be explained successfully. Total one seventy eight persons (Hakeem's, women and Herdsmen). Informants have been interviewed on random basis. The present paper aims to document the traditional knowledge of the local herbalists (Hakims) and elderly known people of the study area on the use of medicinal plant species growing in and around the Thal Desert.

**MATERIALS AND METHODS:****Plant collection and preservation:**

Three field visits in autumn and spring seasons were arranged in order to collect information about the ethnomedicinal uses of plants by the local people from 2010 to 2011 on 15 towns.

Standard method was followed with regard to collection of plant materials, drying, mounting, preparation and preservation of plant specimens<sup>12</sup>. Voucher specimens of medicinal plants in triplicates were collected, prepared and identified. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular

name, part used, mode preparation, administration and ethnomedicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Pakistan<sup>13</sup>. The specimens were deposited in the Herbarium, Islamia University Bahawalpur Punjab, Pakistan.

**Data collection:**

Interviews were carried out during the period 2010 – 2011 after visiting the different rural areas of Thal Desert of Choubarain various phases. Data was collected from each site by using a semi structured questionnaire. About 178 informants

have been interviewed on random basis. The indigenous medicinal plants having traditional knowledge of utilization among the people have been selected as reference specimens.

**RESULTS:**

A total of 78 plant species belonging to 40 families were documented, which were being used by the natives to treat various diseases of human being. The ethnomedicinal inventory of plants, which consists of scientific name along with vouchers in parenthesis, family, local name, parts used and disease(s) treated as shown in the table 1. According to the local people these plants are used for the treatments of variety of diseases like bronchitis, tuberculosis, asthmatic cough, whooping cough, diuretic, diarrhea, dyspepsia, chronic constipation, vomiting, ulcers, skin inflammations, and different types male's and female's sexual disorders.

**Table 1: Local Knowledge regarding the medicinal Plants of Thal desert Choubara:**

Sr.No.	Local name	Botanical name	Family	Parts used	Medicinal uses
1	Desi Kiker	<i>Acacia nilotica</i>	Mimosaceae	Bark, Leaves, Flowers, gum	Diarrhea, Dyspepsia, sexual weakness, Tonic, febrifuge
2	Puth Kanda	<i>Achyranthes Aspera</i>	Amaranthaceae	Root, Leaves	Dyspepsia, Vesicle stones, Inflammation, Cough, Scorpion Bites
3	Persoshian	<i>Adiantum capillus veneris</i>	Adiantaceae	Whole plant	Asthmatic cough, Fever, Menstrual disorders
4	Sufaid Booi	<i>Aerva javanica</i>	Amaranthaceae	Seeds, Roots	Renal calculus, Purgative.
5	Sarein	<i>Albizia lebbek</i>	Mimosaceae	Leaves, Bark	Skin disorder, Eye ailments, Sexual problem
6	Kunwar Gandal	<i>Aloe vera</i>	Liliaceae	Leaves	Dyspepsia, Constipation, Piles, Skin disorder,
7	Chilai	<i>Amaranthus viridis</i>	Amaranthaceae	Leaves, Seeds, Roots	Gastric ailments, Urinary disorder, Anemia, Bronchitis, Skin problem, Emollient
8	Soay	<i>Anethum graveolens</i>	Apiaceae	Leaves, Seeds	Gastrointestinal disorder
9	Lamba	<i>Aristida adscensionis</i>	Poaceae	Whole plant	Fodder for animal
10	Piazi	<i>Asphodelus tenuifolius</i>	Liliaceae	Roots, Leaves, Seeds	Hypertension, Arthritis, Toothache, blood purifier.
11	Neem	<i>Azadirachta indica</i>	Meliaceae	Roots, Bark, Leaves	Skin disorder, Fever, Earache, Diabetes mellitus, Blood purifier

12	Itsit	<i>Boerhavia repens</i>	Nyctaginaceae	Whole plant	Asthma, Heart diseases, Gastric ailments, Anemia, Skin disorder
13	Bugan Bail	<i>Bougainvillea spectabilis</i>	Nyctaginaceae	Leaves, Flower, Stem	GIT disorder, Hypotension, Hepatitis, Cough, Leucorrhoea
14	Aak	<i>Calotropis Procera</i>	Asclepiadaceae	Latex, Leaves	Arthritis, Earache, Asthmatic cough, Skin disorder
15	Kari	<i>Capparis decidua</i>	Capparidaceae	Whole plant	GIT disorder, Breathing problems, Vermifuge, analgesic,
16	Jangli Chasko	<i>Cassia occidentalis</i>	Caesalpiaceae	Whole plant	Indigestion, Constipation, Skin ailments, Diabetes mellitus
17	Pasra	<i>Cenchrus biflorus</i>	Poaceae	Whole plant	Aphrodisiac
18	Dhamar	<i>Cenchrus ciliaris</i>	Poaceae	Whole plant	Urinary problems, Kidney pain, Lactagogue, Emollient, Tumors
19	Karond	<i>Chenopodium murale</i>	Chenopodiaceae	Whole plant	Gastric ulcer, Constipation, Rheumatism

20	Kandiari	<i>Cirsium arvensis</i>	Asteraceae	Leaves, Roots	Skin ailments as urticaria, Boils, Eruptions
21	Kortuma	<i>Citrullus colocynthis</i>	Cucurbitaceae	Fruit, Seed	GIT disorder, Jaundice, Rheumatism, Paralysis
22	Maha Booti	<i>Cleome viscosa</i>	Capparidaceae	Leaves, Seed, Roots	General weakness, dyspepsia, Leucorrhoea
23	Paleet	<i>Conyza bonariensis</i>	Asteraceae	Root, Leaves	Gastric ulcer, Urinary problems, Febrifuge, Anthelmintic, Hepatic problem, Gonorrhoea, Hemorrhoid's
24	Jangli Dhania	<i>Coronopus didymus</i>	Brassicaceae	Whole plant	Dyspepsia, Asthma, Bronchitis, Emphysema, Cancer
25	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae	Seeds	Softening of dermal layer of skin
26	Chibhar	<i>Cucumis var. agrestis</i>	Cucurbitaceae	Fruit, flower, Leaves	Gastric problems, Febrifuge, Vermifuge, skin ailments, Urinary disorder

27	Akash Bail	<i>Cuscuta reflexa</i>	Cuscutaceae	Flower, Leaves	Dyspepsia, Vermifuge, Jaundice, Skin disorder
28	Khawi	<i>Cymbopogon jwarancusa</i>	Poaceae	Whole plant	Skin disorder, cough,
29	Khabal grass	<i>Cynodon dactylon</i>	Poaceae	Roots, Leaves	Anemia, Dysentery, Toothache, UTI, Diabetes mellitus
30	Madana grass	<i>Dactyloctenium aegyptium</i>	Poaceae	Whole plant	Malaria, Jaundice, Anthelmintic, Sexual weakness
31	Shishum	<i>Dalbergia sissoo</i>	Papilionaceae	Leaves, Bark	Leukoderma, Skin eruption, frost bites, expectorant
32	Dhatura	<i>Datura innoxia</i>	Solanaceae	Leaves, Seed, Flower	Asthma, Rheumatism, Skin disorder, Sexual weakness
33	Palak kanda	<i>Emex australis</i>	Polygonaceae	Aerial part	Diabetes mellitus, Cancer

34	Santha	<i>Dodonaea viscosa</i>	Sapindaceae	Roots, Leaves	Fever, Sore throat, Menstrual disorder, Arthritis
35	Sufaida	<i>Eucalyptus camaldulensis</i>	Myrtaceae	Leaves, Bark	Bronchial Asthma, Bronchial Cough
36	Doodhi	<i>Euphorbia hirta</i>	Euphorbiaceae	Leaves, Latex	Constipation, Bronchitis, Asthma, Conjunctivitis, Warts
37	Dhamasa	<i>Fagonia indica</i>	Zygophyllaceae	Whole plant	GIT disorder, Hepatitis, Antipyretic, Antitumor, Skin diseases
38	Bohar	<i>Ficus benghalensis</i>	Moraceae	Latex, Leaves, Bark	Dyspepsia, Vomiting, RTI, Diabetes mellitus, Skin disorder,
39	Anjir	<i>Ficus carica</i>	Moraceae	Fruit, Latex, Leaves	Dyspepsia, Constipation, Vermifuge, Asthma, Diabetes mellitus
40	Pepal	<i>Ficus religiosa</i>	Moraceae	Leaves, Bark	Dyspepsia, Vomiting, RTI, Sexual weakness, Skin ailments



41	Kali Booi	<i>Heliotropium Crispum</i>	Boraginaceae	Seed, Leaves, Flower	Tonsillitis, pruritus, Arthritis, Scabies, Acne, Menstrual disorder
42	Jao	<i>Hordeum vulgare</i>	Poaceae	Leaves, Seed	Anemia, Leucorrhoea, Skin cleaner
43	Chambeli	<i>Jasminum sambac</i>	Oleaceae	Leaves, Root, Flower	Toothache, Headache, Cough ,Fever, Snake bite, Hypertension
44	Gorkha grass	<i>Lasiurus scindicus</i>	Poaceae	Whole plant	Lactagogue, General weakness, Headache
45	Patal Booti	<i>Launaea nudicaulis</i>	Asteraceae	Leaves, Roots	Stomach disorder, Diuretic, Skin disorder, Snake bites, Leucorrhoea, Conjunctivitis
46	Mehndi	<i>Lawsonia inermis</i>	Lythraceae	Fruit	Jaundice, Burning, Pruritis
47	Akra	<i>Leptadenia pyrotechnica</i>	Asclepiadaceae	Whole plant	Dyspepsia, Eruption

48	Ipple	<i>Leucaena leucocephala</i>	Papilionaceae	Bark, Root, Leaves	Colic, Dysentery, Diabetes mellitus, Hypertension, Contraceptive, Tumor, Menstrual disorder
49	Jangli Podina	<i>Malvastrum coromendelianum</i>	Malvaceae	Whole plant	Dyspepsia, Cold, Cough, Fever
50	Bakayan	<i>Melia azedarach</i>	Meliaceae	Leaves, Bark	Gastric ailments, Mouth wash, Gingivitis, Antipyretic, Acne, Eruption
51	Desi Podina	<i>Mentha viridis</i>	Lamiaceae	Whole plant	Indigestion, Cough, Flatulence, Vomiting, Fever
52	Shah toot	<i>Morus alba</i>	Moraceae	Fruit, Leaves	Dyspepsia, Purgative, Anthelmintic, Bronchial Asthma, Melancholia
53	Kela	<i>Musa paradisiaca</i>	Musaceae	Fruit, Leaves, Flower	Tuberculosis, Bronchial cough, Diabetes mellitus, Baldness, mild laxative, diarrhea and dysentery.
54	Khati Booti	<i>Oxalis corniculata</i>	Oxalidaceae	Whole plant	Flatulence, UTI, Constipation, Snake bites

55	Gajar ghas	<i>Parthenium hysterophorus</i>	Asteraceae	Whole plant	Fever, Dysentery, Anemia, Heart disorders
56	Awansi grass	<i>Pennisetum divisum</i>	Poaceae	Whole plant	For fever
57	Choti Harjori	<i>Peristrophe bicalyculata</i>	Acanthaceae	Whole plant	Snake bites
58	Derhila grass	<i>Polygonum glabrum</i>	Polygonaceae	Roots, Leaves	Anemia, Jaundice, Hepatitis, Pneumonia Piles
59	Jand	<i>Prosopis cineraria</i>	Leguminosae	Leaves, Flower, Bark	Rheumatism, Cough, Asthma, Cataract, Conjunctivitis, Snake bites
60	Pahari Kiker	<i>Prosopis juliflora</i>	Mimosaceae	Bark, Leaves	Diarrhea, Diabetes mellitus, Cancer, Gonorrhea
61	Hernoli	<i>Ricinus communis</i>	Euphorbiaceae	Seed, Leaves	Sores, Gout, Lactagogue, Lumbago, Rheumatism, Sciatica, Constipation
62	Jangli Palak	<i>Rumex dentatus</i>	Polygonaceae	Whole plant	GIT disorder, Skin eruption

63	Surkanda	<i>Saccharum bengalense</i>	Poaceae	Roots	Dyspepsia, Fever, Constipation, Piles, Sexual weakness
64	Sumbal	<i>Salmalia malabaricum</i>	Malvaceae	Leaves, Bark, Flower	Malaria, sdyntery, Lactagogue
65	Lana	<i>Salsola baryosoma</i>	Chenopodiaceae	Whole plant	Dyspepsia, Malaria, Vomiting, Jaundice, Hepatitis
66	Jall	<i>Salvadora oleoides</i>	Salvadoraceae	Fruits, Leaves	Tuberculosis, Skin ailments, Refrigerant
67	Til Sufaid	<i>Sesamum indicum</i>	Pedaliaceae	Leaves, Seeds	Dysentery, whooping cough, Antidepressant, Aphrodisiac, Menstrual disorder
68	Dumbi grass	<i>Setaria pumila</i>	Poaceae	Whole plant	Burning, General weakness
69	Mako	<i>Solanum nigrum</i>	Solanaceae	Leaves, Roots	Gastric ailments, Jaundice, Hepatitis, Gallstones, Diphtheria

70	Dreira	<i>Stipagrostis plumose</i>	Poaceae	Whole plant	Hypertension, Hysteria, Premature ejaculation, Cancer
71	Imli	<i>Tamarindus indica</i>	Tamaricaceae	Fruit, Bark, Leaves	Antipyretic, Laxative, Vermicidal, Sore throats, Asthma, Skin ailments
72	Khagal	<i>Tamarix aphylla</i>	Tamaricaceae	Leaves, Bark, Flowers	Anemia, Leucorrhoea, Headache
73	Biskhapra	<i>Trianthema portulacastrum</i>	Aizoaceae	Leaves	Vermifuge, Diuretic, Arthritis, jaundice, Menstrual disorder, Gonorrhoea, Skin ailments
74	Bakhra	<i>Tribulus terrestris</i>	Zygophyllaceae	Fruit	Renal calculus, General tonic, Gynecological disorders, Gonorrhoea
75	Aksan	<i>Withania somnifera</i>	Solanaceae	Leaves, roots	Skin allergy and eruption, Impotency, Gynecological disorder
76	Kanda Booti	<i>Xanthium strumarium</i>	Asteraceae	Leaves, Fruits	Digestive, Laxative, Anthelmintic, antipyretic, Poisonous bites, Skin ailments

77	Jangli Beri	<i>Ziziphus mauritiana</i>	Rhamnaceae	Leaves, Fruit	Dysentery, Leucorrhoea
78	Jhar Beri	<i>Ziziphus nummularia</i>	Rhamnaceae	Leaves, Bark, Fruit	Antidiarrheal, Abscesses, Hair strengthening

**DISCUSSION:**

The Thal desert Choubara is an arid to extremely arid area. The study revealed that 78 species belonging to 40 families are commonly used by the local people for curing various diseases. The cure range from, simple infective diseases to highly complicated disorders. 56.41% plants are used for curing GIT disorders, 39.74% for cure of skin disorder 24.35% to cure respiratory tract infection, 24.35% for sexual disorder 15.38% for kidney and urinary tract disorder 12.82% for musculoskeletal and joint disorder, 19.23% as antibacterial and 14.10% for diabetes and hyperlipidemia are used. The comprehensive information on ethnomedicinal flora of Thal desert Choubara with regard to scientific name, local names, families and diseases cured by plants has been provided in the table.

Significance of herbal medicine is increasing day by day as it is a cost effective alternative to, or corresponding to, conventional medicine. According to the World Health Organization (WHO, 2011) about 70–95% of the world's population in emerging countries relies mainly on plants for their primary health care system. Herbal medicinal products constitute annually multi-billion-dollars commerce worldwide. In United States (U.S.A) about 25% prescriptions are filled with drugs which are obtained or extracted from plant source.

Since the beginning of civilization, people have used for accomplishing various daily life requirements. One of the objectives of this study was to record the indigenous knowledge about plants in the Choubara District, which has a great wealth of medicinal plants. This ethnomedicinal knowledge of plants will be beneficial to explore their phytochemical and pharmacological potential in future.

**CONCLUSION:**

The survey indicated that the study area has plenty of medicinal plants to treat a wide spectrum of human ailments. Earlier studies on traditional medicinal plants also revealed that the economically backward local people of Thal desert Choubara prefer folk medicine due to low cost and sometimes it is a part of their social life and culture.

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