

## **ETHNOBOTANICAL STUDIES OF SELECTED PLANT SPECIES OF RATWAL VILLAGE, DISTRICT ATTOCK, PAKISTAN**

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### **Abstract**

A survey was carried out about ethno botany of flora of Ratwal Village. It was found that the area is enriched in natural flora and the residents are dependent on this natural resources especially for their food, shelter, fodder, timber, fuel, health care. Data was collected through questionnaire and interview by local people. In total 43 plant species belonging to 33 families were recorded.

### **Introduction**

Ratwal lies in the district Attock. The district lies from 33°-00' to 34°-00' North latitudes and 71°-43 to 72°-56' East longitudes. The total population of Ratwal is 2662 among which Muslims are 2645. The literacy ratio is 41.6%. The type of housing structure consists of a total of 422 including pacca, semi-pacca and kacha structures. The housing facilities include electricity and potable water. The topography of district is a combination of hills and plains (Anon., 1998).

Ethnobotany is a multi-disciplinary science encompassing botany, anthropology, economics and linguistics, which studies the way in which a society relates to its environment and particularly to the plant world. These relationships can be social, economic, symbolic, religious, commercial and artistic (Aumeeruddy-Thomas & Pei, 2003).

Ethnobotany is a relatively young discipline and it is anticipated that it will become a powerful field of scientific activities of this century. Basically, ethno botany is the name of sharing experience with the local communities and the researchers because the communities know how to manage their resources and their environment. In this context, ethno botanist will be passing through a continuous learning process. Ethno botanical research requires relatively little equipments and is cheap compared to many other fields of science. (Shinwari & Khan, 2002)

Ethno botany deals with overall relationship between plants and human populations of past and present (Jain, 1988). Considerable descriptor work on Ethno botany in Pakistan has been carried out by different persons including Shinwari & khan (1998); Arshad & Akram (1999). Recently, Khan *et al.*, (2000) and Rehmat Ullah (2002) and Aumeeruddy-Thomas & Pei Shengji (2003) etc., have studied the miraculous properties of diverse plants.

The local communities of different areas of Pakistan have the knowledge of centuries old traditional uses of most of the plants of their area. This indigenous knowledge of plants has been transferred to them from generations to generations by their ancestors. Some of the important plants are commercially exploited for the extrication of various types of active ingredients. Though the different systems of Eastern medicines i.e., Unani, Ayurvedic and homoeopathy etc are entirely based on the medicinal properties of these plants will not be known to the next generation. Indigenous knowledge is in danger of being lost. There is a need to conserve this indigenous knowledge of the plants by

recording it. Our exploitation of the medicinal plants on commercial basis has threatened their occurrence and abundance. These plants are now either susceptible to become endangered. (Shinwari *et al.*, 2002).

## Methodology

The present research was carried out through various field surveys in different areas of Ratwal in 2008. For the collection of the plant specimen field trips were frequently undertaken. The plant specimens collected for this purpose were identified with the help of herbarium of Quaid-i-Azam University, Islamabad (ISL), Pakistan. The plant specimens were deposited in Fatima Jinnah Women University Herbarium. Ethno botanical information were gathered by investigation and interviewing the local people. Repeated queries were made to get the data confirmed. Two questionnaires were prepared after observing the study area. One was of ethno botanical uses while other belonged to medicinal uses of plants found in Ratwal village.

Traditional knowledge is reported for traditional and ethno botanical usage of 43 plants belonging to 32 families that are presented below. Botanical name followed by their family, English name, vernacular name, habit and habitat, part used methods of uses and side effects *etc.*

## Results

Results are presented in Table 1.

## Discussions

The area of Ratwal is very fertile and rich with flora. A total of 43 Ethno botanically important plant species belonging to 33 different families were reported during the research work. The benefit of these wild and cultivated medicinal plants is described by local people and inhabitants. All these species are the main source of medicine and other ethno botanical uses large fraction of people of the area depends on agriculture and forestry. They collect a lot of medicinal plants. Because of the importance of the plant species they are harvested and cultivated in a traditional way but there is no conservation technique adapted for their sustainable use. It is found that some important plants like *Morus nigra* L., *Cannabis sativa* L., *Mirabilis jalapa* Linn., *Portulaca quadrifida* Linn., etc., is good to cure cough, asthma and fever. *Achyranthus aspera* L., *Fumaria indica* L., *Parthenium hysterophorus* L., and *Azadirachta indica* L., are used for the removal of pimples In case of wasp and snake bite *Allium sativa* L., *Mentha spicata* Linn., and *Euphorbia prostate* L., are considered good. Similarly constipation, piles, eczema, ringworm, menstrual problems can be successfully treated by local plants found in those areas.

Human existence, raising and cultivation exerts enormous stress on vegetation and results in environmental degradation (Ahmad *et al.*, 2003). Similar situation also prevail in this village. Other than those stresses prevailing in the village some other causes of degradation are ignorance, poverty, unemployment, and lack of scientific techniques regarding collection and processing of plants and plant products. Medicinal plants are very important component of agro economics. In fact there is no local awareness of importance of theses plants among inhabitants.

Table 1. List of Medicinal plants and their uses.

Botanical name	Family	Eng/ vernacular name	Habit/ habitat	Part used	Method of use/Side effect
<i>Acacia nilotica</i> L.	Fabaceae	Kikar	Tree	Whole	a) Legumes are grinded to form powder and used by women to treat leucorrhoea.
<i>Achyranthus aspera</i> L.	Amaranthaceae	Prickly chaff flower/ Puthkanda	Biennial Herb, Wild	Whole	a) Whole plant is boiled and then syrup is give to the patient with abdominal pain. b) Its root paste is used to remove pimples. c) Plant is burnt to form ash like powder that is used to cure asthma, cough and stone removal from urinary bladder. For asthma it is suggested to use the powder with camel milk. Side Effects: Causes disturbance of digestive system.
<i>Aloe barbedensis</i> Mill.	Liliaceae	Aloe vera/ Kanwar Gandal	Herb/Wild	Leaves	a) Its leaf gel is applied on hair and considered good for them. b) Gel is also used as mask on face for tightening of skin pores. c) Its cultivated form is used for ornamental purposes
<i>Azadirachta indica</i> L.	Meliaceae	Neem	Tree wild and Cultivated	Whole	a) Leaves paste is applied to cure pimples. b) Leaves are grinded and applied on boils to remove dirty flesh and produces new flesh and skin over there. c) Leaves decoction is used for bathing purpose as antiseptic. d) Bark decoction is drunk to kill tape worms. e) Flowers with brassica oil are used to make kohl that is useful in eye irritation. f) Fruit is grinded with water and applied in hair to kill lice. g) Its "miswak" strengthen teeth and gums. h) Its liquid called "mudh" that is used in skin itching. Side Effects: It causes dryness on skin and brain so it should be used with oil, honey and black pepper.
<i>Calotropis procera</i> R.BR.	Apocynaceae	Wallow Wart/ Akk	Herb/ Wild	Whole	a) Its Flower is also used in olive oil to remove backache. b) Milk is used to remove hairs from animal skins, so it is mostly used by leather producers. c) Heated/warm leaves are tied on swelling to remove the pain. d) Leaves paste is used to cure wounds, where it produces new flesh and skin. Side Effects: a) Excessive use of milk produces itching on skin, stomach and intestines.

Table 1. (Cont'd.).

Botanical name	Family	Eng/ vernacular name	Habit/ habitat	Part used	Method of use/Side effect
<i>Cannabis sativa</i> L.	Cannabaceae	Indian hemp/ Bhang	Herb Wild	Leaves	a) In piles its leaves are grinded with <i>tagetes minuta</i> Linn, and then this paste is applied on the haemorrhoids. Side Effects: It is a narcotic plant and its excessive use damages brain and immune system and causes weakness. a) Its leaves are also cooked as green.
<i>Chenopodium album</i> L.	Chenopodiaceae	Fat-hen Bathu	Herb Wild	Seeds & Leaves	a) Its juice is used to make lemonade that is so refreshing in summer and removes thirst. b) Juice is also used in different foods to enhance their taste and digestion. c) Juice is used to remove darkness of skin like elbows. d) Lemon is used in nausea and vomiting with salt. Side Effects: Bad for throat.
<i>Citrus limon</i> L.	Rutaceae	Lemon Nimbo/lemoo	Cultivated	Fruit, Seed, Leaves	a) It is eaten with salt as a salad. b) Its fruit slices are applied on eyes to remove dark circles. c) Its paste is also applied on face as a mask for freshness and shining. Side Effects: Drinking water after eating it can cause abdominal pain and diarrhoea.
<i>Cucumis sativus</i> Linn.	Cucurbitaceae	Cucumber/Kheera	Creepers/ Cultivated	Fruit	a) Its oil is used to cure lice and wounds. Side Effects: Can cause itchiness on skin and eyes. a) Its leaves are used to protect woolen clothes from insects in winter. b) Extract of its fresh or dried leaves is mixed with honey to prevent epistaxis.
<i>Eruca sativa</i> Mill.	Brassicaceae	Taara Meera	Herb/Wild and Cultivated	Leaves & Seeds	a) Its leaves decoction is used for vomiting and cholera. b) Its leaves extract called menthol is widely used for stomach problems.
<i>Justicia adhatoda</i> Linn.	Acanthaceae	Malabar Nut Bhaikar	Shrub/Wild	Shrub	c) Menthol is also used in many cosmetics like prickly heat powder, cream and menthol shampoos. d) Its leaves are also used to repel mosquitoes, ants and flies.
<i>Mentha spicata</i> Linn.	Lamiaceae	Mint Podina	Herb Wild and Cultivated	Whole	a) Its leaves are cooked with "chapatti" for 2-3 times a day for hepatitis. Loose motion will remove the disease. b) Grinded powder of seeds is used to cure leucorrhoea and menstrual regulation. c) Leaves with oil or water are used to treat ulcer.
<i>Mirabilis jalapa</i> Linn.	Solanaceae	Marvels of Peru Gul-e-Abbasi	Wild/ Cultivated	Leaves, Flower, Root and Seed	a) Its extract is use for acne problems and to purify blood.
<i>Momardica charantia</i> L.	Cucurbitaceae	Bitter Gourd/ Karella	Creepers Cultivated	Fruit	

Table 1. (Cont'd.).

Botanical name	Family	Eng/ vernacular name	Habitat	Part used	Method of use/Side effect
<i>Morus nigra</i> L.	Moraceae	Black Mulberry/ Toot Siyah	Tree Wild and Cultivated	Fruit, leaves and bark	a) Its fruit is edible. Its syrup is refreshing in summer. b) Decoction of leaves and root is used to treat sore throat. c) Decoction of leaves and bark is used in dental pain.
<i>Narcissus</i> L.	Amaryllidaceae	Daffodils/ Nargis	Plant/Wild	Root	a) Its root is used to remove wound. Root is grinded and applied as a paste on them. b) It is boiled with water, and then it is used to kill tape worms. b) Its stem is boiled in water and used to remove toothache and to strong gums.
<i>Parthenium hysterophorus</i>	Asteraceae	Ragweed	Herb Wild	Leaves	c) Ground root in water is used to remove boils and pimples. d) Its leaves extraction is used in insomnia by putting its drops in eyes
<i>Peucedanum graveolens</i> L.	Apiaceae	Dill seeds Soya	Annual Herb Wild and Cultivated	Seeds & Leaves	a) It seed extensively boiled by women to regulate their menstrual cycle. b) Seeds are good for digestion.
<i>Prunus domestica</i> L.	Rosaceae	Aalucha	Tree Cultivated	Fruit, Wood and Leaves	a) It is used as fruit. Its fruit reduces thirst
<i>Prunus persica</i> (L.) Batsch.	Rosaceae	Peach/Aarro	Tree Cultivated	Fruit	a) It reduces thirst. b) Its leaves extract is used to kill tape worms by drinking its extract. Its leaves paste is also applied on abdomen to kill tapeworms.
<i>Ricinus communis</i> L.	Euphorbiaceae	Caster Oil Arind	Wild and Cultivated	Seeds	Oil is laxative. Side Effects: Excessive use of castor oil can cause diarrhoea.
<i>Tagetes minuta</i> Linn.	Asteraceae	French Marigold Gainda	Herb/ Cultivated	Whole	a) Flower's extract is mixed with sugar to regulate menses. d) For wasp biting its leaf paste is applied after mixing in the grinded black pepper.
<i>Zea mays</i> L.	Poaceae	Corn/ Maize Makki	Cultivated	Whole	a) Its flour is used to make bread b) Its seed husk fried is laxative. c) After replacing fruits the remaining is called "gillir". It is burnt and used to stop menses. d) "Gillir" is also used with salt to cure cough.
<i>Zizyphus mauritiana</i> Mill.	Rhamnaceae	Chinese Tree, Ber	Tree/ Wild	Whole	a) Its leaves are foraged by animals. b) Its fruit is edible. c) Its leaves decoction is applied on head to remove dandruff and lice. d) It is considered best for honey bees, so it is of economic importance.

**Table 1. Division of plants with reference to families.**

<b>Families</b>	<b>No. of species</b>
1. Acanthaceae	1
2. Amaranthaceae	1
3. Amaryllidaceae	1
4. Apiaceae	1
5. Apocynaceae	1
6. Asteraceae	2
7. Brassicaceae	1
8. Cannabaceae	1
9. Chenopodiaceae	1
10. Cucurbitaceae	2
11. Euphorbiaceae	1
12. Fabaceae	1
13. Lamiaceae	1
14. Liliaceae	1
15. Meliaceae	1
16. Moraceae	1
17. Poaceae	1
18. Rhamnaceae	1
19. Rosaceae	2
20. Rosaceae	1
21. Rutaceae	1
22. Solanaceae	1

### Conclusion and Recommendation

The survey indicated that the study area has plenty of medicinal plants to treat a wide spectrum of human ailments. Studies on traditional medicinal plants revealed that the local people prefer folk medicine due to low cost and sometimes it is a part of their social life and culture so it is necessary to acquire and preserve this traditional system of plant utilization by proper documentation and identification of specimen. Sustainable harvesting of these plants are essential. Thus there is a need to create awareness of importance of these plants among local people and to provide them guidance and training in collection and processing to enhance the economic benefits from local flora.

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