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Floristic Diversity and Indigenous Uses of Medicinal Plants of Saharanpur District, (Uttar Pradesh) India

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ABSTRACT: From the time immemorial plants have been playing significant role in the life of human beings as a great source of food, clothing, shelter and medicine. In India, the traditional medication system plays an important role in health care of rural people. This traditional knowledge exploration is a part of the cultural tradition of each community to establish a systematic approach based on traditional practices through the sustainable use of natural bioresources. Besides advancement in the healthcare system in the modern age, the communities prefer sharing their intellects on traditional practices and vast experiences, which includes the source of ailments and its remedies leading towards available methods to ensure healthy livelihood. Documentation of this traditional knowledge is a challenge and essentially important for the conservation and utilization of biological resources. An extensive survey to document floristic diversity and indigenous uses of medicinal plants from various parts of Saharanpur district was conducted from July 2020 to August 2022. The ethnobotanical information was obtained through open interviews and group discussions with local people of the district. A total of 61 medicinal plants belonging to 20 families of angiosperms were documented. These plants are widely used against various ailments by the local inhabitants of the study area. Leaves were found to be the most widely used plant part, followed by root and other parts. The main objective of this study was to document the floristic diversity and indigenous knowledge of medicinal plants found in Saharanpur district of Uttar Pradesh.

Keywords: Floristic diversity, traditional knowledge, bioresources, ethnobotanical, ailments, Saharanpur

INTRODUCTION

The utilization of plants for the fulfillment of basic needs of human beings have been experienced from the time immemorial. Plants provide food, shelter, clothing, medicines and other valuable products to make human life comfortable and better. In order to involve local inhabitants for the conservation of biodiversity and environment, the ethnobotanical approach have been proved highly significant. The history of human knowledge regarding medicinal importance of plants date back perhaps for more than five thousand years (Sofowora, 1982). According to WHO 80% of the populations living in the developing countries rely almost exclusively on traditional medicine (Ranbirchandra *et al.* 2007). About 64% of the total global population still remains dependent on traditional medicine for their health care needs (Cotton, 1996). At present about 65% of the Indian population is dependent on the traditional system of medicine (Vidyasagar and Prashantkumar 2007).

In India, the traditionally used medicinal system has significant role in fulfilling health care needs of rural people. The medicinal properties of the plants are due to the presence of active metabolites or compounds which are responsible for certain activities, help in the prevention and treatment of diseases (Radha *et al.,* 2021). In local communities, primary health care is usually treated with indigenous plants (Bibi *et al.,* 2014). Out of 422,000 flowering plants, about 35,000 to 50,000 plants are being used for medicinal purposes (Hussain *et al.,* 2019). It is observed that in India, about 2500 medicinal plant species are being used by traditional healers, of which 100 plant species act as a source of regular medicine (Pei, 2001). As per the report of WHO, approximately 25% of the recent drugs are prepared from the parts of plants based on the traditional knowledge and research which further lead to the development of approximately 75% new herbal drug (Johnsy *et al.,* 2013). Further WHO also recorded more than 21 thousand species of plants with their medicinal value around the world.

With the modernization and availability of various new alternatives, traditional medicinal practices are declined day by day. Negligence by the youth also influences the traditional knowledge (Semwal, 2005). Consequently, it became very necessary to document the fast disappearing traditional knowledge before it vanishes.

An increase has been observed in the study of medicinal properties of plants and their potential uses in different parts of the world during the last few decades (Lev, 2006). Ethnobotany is developing and progressing from simple documentation to producing advanced sustainable drugs. Indigenous medicinal plants offer several advantages because of safe use, easy availability, biocompatibility and cheap synthesis (Cavero and Calvo 2015). Worldwide, 25% of the prescribed drugs are obtained from plants (Tribess *et al*., 2015). Therefore, plant-mediated drugs are more common because of their safe applications against several disorders like diabetes and respiratory and mental disorders (Butt *et al.,* 2015). Moreover, due to the lack of access to mainstream medicine, geographical issues, and poverty, the majority of indigenous people all around the world still heavily rely on medicinal plants to address health-related concerns (Smith-Hall *et al.*, 2012). In such conditions, traditional knowledge and ethnomedicinal claims are the reliable approaches for their considerable potential.

The use of ethno-botanical approach to document indigenous knowledge is very significant for the conservation and sustainable utilization of available medicinal resources. The indigenous communities in different corners of the world are well aware to the medicinal plants and their ethno-botanical importance. They are quite familiar of inventive practices and getting products from medicinal plants occurring in their locality (Shah, 1982). Thakur and Waske (2018) studied the medicinal plants used by local herbal healers in south block of Seoni District (M.P.).

Saharanpur district of Uttar Pradesh state was selected for the study (Fig. 1). The district has a rich source of biodiversity including plenty of valuable medicinal plant resources (Nagiyan *et al.,* 2003; Dhiman *et al.,* 2006; Prachi *et al.,* 2009). The main objective of this survey was to document the floristic diversity and indigenous knowledge of medicinal plants of Saharanpur district and their conservation.

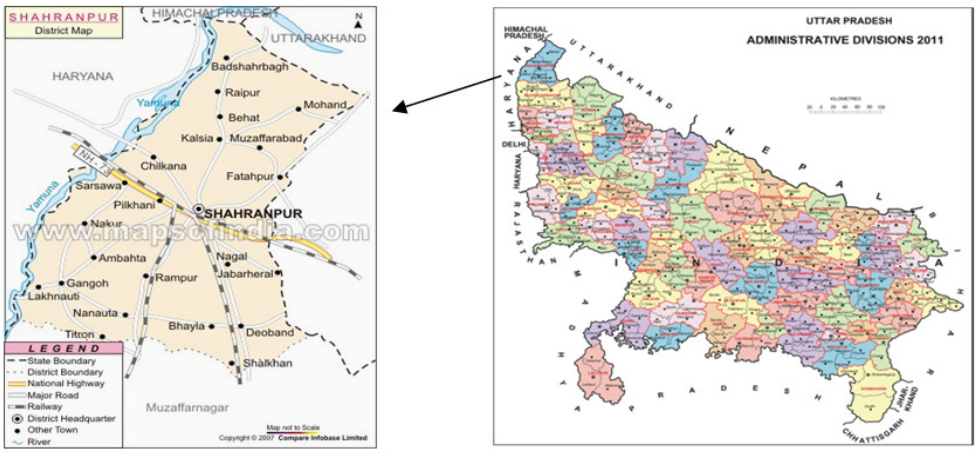


Fig. 1. Map of the Study Area (Saharanpur District of Uttar Pradesh).

MATERIAL AND METHODS

Study Area. Saharanpur district lies in the northernmost part of the state Uttar Pradesh. It shares border with the states of Haryana, Uttarakhand and Himachal Pradesh. In the east of the district lies district Haridwar of Uttarakhand state, in the west lies districts Yamuna Nagar and Karnal of Haryana state, district Dehradun of Uttarakhand state in the north and district Muzaffarnagar and Shamli in the south. The district is geographically located in the North-West part of the Saharanpur Division. It lies between 29º 34′and 30º 34′ North latitude and 77º 7′ and 87º 12′ East longitude. The district area is 3869 sq. km. and the climate is tropical. Rainfall is most crucial climatic factor which directly affects the vegetation of this area. The region receives maximum rainfall from June to September. The hottest months are May and June with maximum temperature around 44ºC while January is the coldest with minimum temperature around 1ºC. The district is differentiated into the Shiwalik, Bhabar, Tarai, Khadar and the plain. The southern part of the district is mainly plain and constitutes major part of the district. The district is divided into 5 tehsils, 11 development blocks and 1243 revenue villages. The major part of the region is fertile and made up of alluvial soil. Yamuna is the main river which flows on the western limit of the district in south direction. Hindon, Dhamola, Katha, Panvdhoi and Krishna are other important rivers of the district.

Method. An extensive survey of the study area was carried out from July 2020 to August 2022 to get maximum ethnomedicinal information following the suggested protocols (Martin, 2004). In order to obtain first hand traditional ethnomedicinal information regarding the use of different plants, the interviews and group discussions were organized with elder knowledgeable local people and their ethnomedicinal practices were documented. For this purpose, people of different age groups, male and female, plant collectors and traditional local healers were interacted. The information regarding floristic diversity, local name of plants, parts of the plant used, method and forms of preparation were systematically recorded and documented by successive visit to rural areas in different seasons. A number of field visits were

arranged in all seasons for the collection of maximum number of plant specimens in their flowering and fruiting stages. All the therapeutic plants have been collected by following standard techniques (Langshiang *et al.,* 2020; Jan *et al.,* 2021). The collection place, local name, habit and habitat of the plants were also documented for prospect correspondence. Photographs of plant specimens were taken at site in order to describe their basic details. All the data of collected specimens were maintained in field note book. Collected plant specimens were further processed following the standard method of collection and preservation of specimens in the herbarium (Jain and Rao 1977). At present, quantitative methods have been developed by pioneer ethnobotanists to describe the nutritional and medicinal values of various plant species for a particular group of people (Prance *et al.*, 1987; Reyes-García *et al.*, 2006; Pieroni, 2001; Upadhyay *et al.,* 2011).

The medicinal plant species used by the local communities of the study area were authenticated with the help of floras (Duthie, 1903-1929; Kanjilal, 1928; Kanjilal, 1933; Hooker, 1973), published literature and according to the techniques of Devi *et al.* (2020). Collected data of medicinal plants was verified for Sanskrit and local names from websites like ENVISFRLHT (http://envis.frlht.org/bot), Biodiversity portal (http://indiabiodiversity.org). The Plant List (http://www.theplantlist.org) and International Plant Name Index (http://www.ipni.org) were used for the correct botanical name. The collected ethnomedicinal information was documented on the basis of plant part used and the disease cured. The collected plant specimens were arranged in alphabetical order with their local names, botanical names, habit, family, plant parts used and medicinal importance (Table 1).

RESULTS AND DISCUSSION

Taxonomic evaluation. The taxonomic detail on the collected plant species along with their mode of utilization is depicted in Table1. The present work embodies noteworthy ethnomedicinal uses of 61medicinally important plant species belonging to 46 genera and 20 families of angiosperms. Their family wise distribution is shown in Table 2. The 10 dominant families of the region were Asteraceae (8 species) followed by Amaranthaceae (7 species), Papilionaceae (6 species), Acanthaceae, Euphorbiaceae and Malvaceae (5 species each), Convolvulaceae and Solanaceae (4 species each) and, Boraginaceae and Cucurbitaceae (5 species) (Fig. 2). The distribution of specimens according to their habit is represented by Fig. 3. The study revealed that the dominant form of the study area are herbs (63.93%), followed by trees (11.48%), shrubs (9.84%), under shrubs (8.20%) and climbers (6.55%). Some of the plants used by local inhabitants of Saharanpur district have been shown in Plate 1.

Ethnobotanic evaluation. The study area has rich medicinal plant resources. In the present study, an attempt has been made to document the floristic and traditional ethnobotanical information regarding medicinal plants of the study area. In current survey, different morphological parts of therapeutic plants have been utilized for the different ailments. Leaves (42%) were the main morphological parts, followed by roots (21.88%), seeds (15.63%), whole plant (8.33%), fruits (7.29%), bark (5.21%), flower (4.16%), latex (2.08%) and rhizome (1.04%) (Fig. 4). The local inhabitants of Saharanpur are mostly dependent on these medicinal plants for their primary health care needs. These plants have been proved highly effective against various human diseases such as diarrhoea, leprosy, asthma, kidney stone, urinary infections, snake bites, fever, rheumatism, leucorrhoea, tuberculosis, skin disorders and eye infection. Local people collects these medicinal plants from their surrounding as wild, semi-wild and some are cultivated as well. Irrespective of advancement in science and technology most of them still depends on their indigenous traditional knowledge of medicinal system.

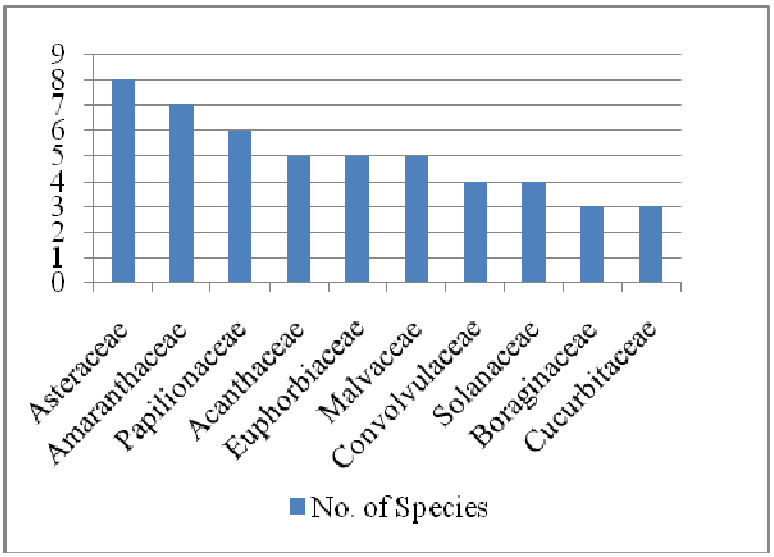


Fig. 2. Dominant families with number of species.

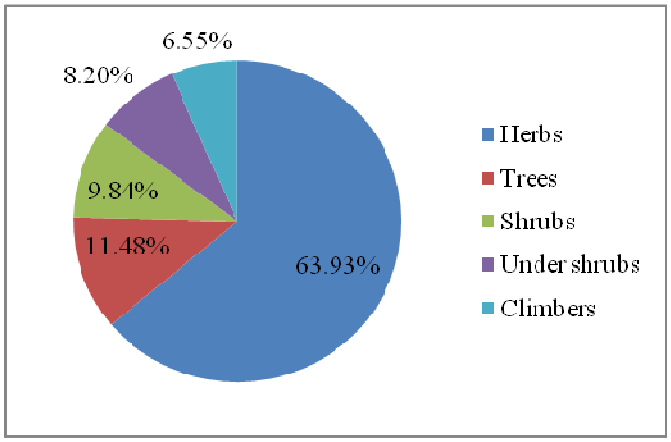


Fig. 3. Habit wise distribution of species.

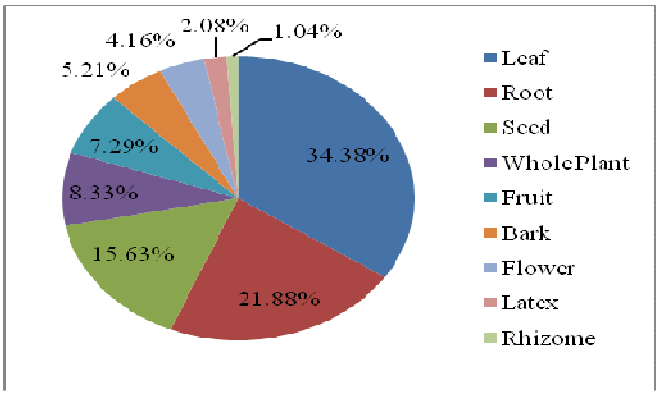


Fig. 4. Percentage of plant parts used for medicinal purposes.

Table 1: List of Plant Species with Medicinal Uses.

Species	Common Name	Family	Habit	Parts Used	Medicinal Uses
Acalypha indica L.	Kuppi	Euphorbiaceae	Herb	Leaf	Leaf paste is used as antidote against snake bite. Leaves juice is applied on ringworm and rheumatic arthritis and skin problems.
***Aerva javanica* (Burm. *f.*) Juss. &Schult.**	Chhaya	Amaranthaceae	**Herb**	**Root, Seed**	Roots are given in headache and jaundice. Seeds are useful in rheumatism. Decoction of plant is given in calculi and burning micturition.
Ageratum conyzoides L.	Nilam, NeelaPhool	Asteraceae	Herb	Leaf	Leaves decoction is used in treatment of dysentery, rheumatism and fever. Leaf extract act as antidote against snake bite. Leaves are also used to prevent loss of hairs.
***Alternanthera sessilis*(L.) R. Br. *ex* DC.**	Ghardughi	Amaranthaceae	**Herb**	**Leaf**	Leaf poultice is used for boils and wounds. Decoction of plant is given to nursing mother to increase the milk.
***Amaranthus spinosus*L.**	KantiliCholai	Amaranthaceae	**Herb**	**Whole Plant**	Infusion of shoots used in eczema. Plant juice is useful in treatment of leprosy, bronchitis, piles and leucorrhoea.
*Argemone mexicana*L.	PeeliKateli	Papaveraceae	Herb	Seed, Latex	Seeds are used as antidote against snake bite. Latex is used in eye infection and jaundice. Seed oil is used to treat cutaneous infections.
***Asparagus racemosus*Willd.**	Satavar	Liliaceae	**Under shrub**	**Root**	Dried and powdered roots taken with milk as tonic for lactation in women. Roots also used to overcome general debility, also effective in peptic ulcers and piles.
***Asphodelus tenuifolius* Cav.**	Pyazi	Liliaceae	**Herb**	Whole Plant	Plant paste is applied in case of swellings. Plant decoction is useful in kidney stones.
Azadirachta indica A. Juss.	Neem	Meliaceae	Tree	Leaf, Root, Bark	Root decoction is given in jaundice. Boiled leaf extract is used to treat skin diseases. Bark paste is applied on wounds for quick healing.
Bacopa monnieri(L.) Wettst.	Jalneem, Brahmi	Scrophulariaceae	Herb	Leaf	The plant extract is an important nerve tonic. Leaves are important medicine for epilepsy, bronchitis, asthma and diarrhoea.
***Barleria prionitis*L.**	Vajradanti	Acanthaceae	Under	**Leaf**	Raw leaves chewed to get relief in tooth ache. Leaf

			shrub		ash is used with honey against cough. Leaves paste is useful in boils and cracked heel.
***Bombax ceiba* L.**	**Semal**	**Bombacaceae**	Tree	Root, Flower	Flowers are used as gulkand and applied to prevent miscarriage. Root is used to treat gonorrhoea and dysentery.
Bulbostylis barbata(Rottb) C.B. Clarke	Piazza	Cyperaceae	Herb	Whole Plant	Herb is boiled in water and given in treatment of intestinal disorders.
Butea monosperma(Lam.) Taub.	Dhak, Palash	Papilionaceae	Tree	Leaf, Bark	Fresh leaf juice is applied in burning urination. Leaf paste is applied externally in rheumatic pain. Bark decoction is used in dysentery.
*Celosia argentea*L.	Makhmali	Amaranthaceae	Herb	Seed	Flowers are used in the treatment of diarrhoea. Seeds are used to cure painful micturition and dysentery.
***Chenopodium album* L.**	**Bathua**	Chenopodiaceae	Herb	**Leaf, Seed**	Leaves are used in treatment of urinary troubles, anemia and colic pain. Seed decoction is given to induce abortion.
***Chenopodium allanii*Aellen.**	Sadbathua	Chenopodiaceae	Herb	**Leaf**	Leaves are useful in treatment of roundworms, hookworms and intestinal infections.
***Cichorium intybus*L.**	Kasni	**Asteraceae**	**Herb**	**Root**	Roots are used as diuretic, also applied for treatment of gall bladder and liver disorders.
***Citrullus colocynthis*(L.) Schrad.**	Tumba	**Cucurbitaceae**	Climber	**Fruit, Root, Seed**	Fruits are used as purgative. Oil from the seeds is used against snake bite. Root is given in bronchitis, and rheumatism.
Coccinia grandis (L.) Voigt.	Kanduri	Cucurbitaceae	Climber	Root, Stem, Flower	Root paste is applied in snake bite. Flowers are useful in jaundice and itching. Stem and leaves decoction used in bronchitis.
***Cordia dichotoma* G.Forst.**	Lisoda	Boraginaceae	Tree	**Leaf, Bark**	Bark is employed for cough and chest diseases. Leaves juice and honey is given in foot and mouth disease of cattle.
Croton bonplandianum Baill.	Jangli Jamal Ghota	Euphorbiaceae	Shrub	Leaf, Stem	Stem juice is used as an eye drop against various eye troubles. Leaf decoction is employed to prevent dandruff.
Cucumis melo L.	Kachra	Cucurbitaceae	Climber	Fruit, Seed	Fruit pulp is useful in chronic eczema. Seeds powder is used to get relief in kidney stone problem.
***Cynodon dactylon*(L.) Pers.**	DoobGhas	Poaceae	**Herb**	Leaf, Rhizome	Plant juice is employed to cure piles and to regulate menstrual cycle. Rhizomes are used in urinogenital problems.
***Datura innoxia*Mill.**	Safed Datura	Solanaceae	Herb	**Leaf, Seed**	Seeds are used to treat hydrophobia. Seeds are said to be smoked in asthma. Roasted leaves are applied on enlarged testicles.
*Datura metel*L.	Kala Dhatura	Solanaceae	Herb	Leaf, Seed	Leaves are used as narcotic and anti-spasmodic. Seeds are said to be smoked in asthma.
Datura stramonium L.	Dhatura	Solanaceae	Herb	Leaf, Seed	Seeds are used as cerebral depressant. Also used in muscular pain and rheumatism. Leaves are useful in asthma and bronchitis.
***Digera muricata*(L.) Mart.**	**Lhasua, Kundra**	Amaranthaceae	Herb	**Seed, Flower**	Seeds and flowers are used for treatment of urinary discharges.
Eclipta prostrate L.	Bhringaraj	Asteraceae	Herb	Whole Plant	Whole plant is used to treat fever, jaundice, skin problems and urinary tract infections. Leaf paste mixed with coconut oil is used to prevent hair loss.
***Euphorbia hirta*L.**	**Dudhi, Dudhibel**	Euphorbiaceae	Herb	**Leaf, Latex**	Leaf decoction is useful in bronchial infections as well as diseases of urinogenital tract. Latex is applied on ringworm and lip cracks.
*Euphorbia prostrata*Ait.	Dudhi	Euphorbiaceae	Herb	Whole Plant	Plant is recommended for treatment of bleeding hemorrhoids.
*Euphorbia thymifolia*L.	Lal Dudhi	Euphorbiaceae	Herb	Leaf	Plant is very useful in treatment of ringworm. Leaves are applied on boils and wounds.
Evolvulus nummularius L.	Morning Glory	Convolvulaceae	Herb	Whole Plant	Plant used as anthelmintic. Fresh plant juice is used for the treatment of amoebic dysentery.
*Heliotropium curassavicum*L.	Monkey Tail	Boraginaceae	Herb	Leaf, Root	Decoction of leaves is useful in fever. Powdered roots applied to boils and wounds.
***Heliotropium ellipticum*Ledeb.**	Pili-Buti	Boraginaceae	**Herb**	**Leaf, Root**	Root paste is applied on snake bite. Leaves juice is applied on wounds, sores, boils and pimples.
***Indigofera linifolia*(L. f.)Retz.**	Torki	**Papilionaceae**	**Herb**	**Root**	Root paste is applied on swellings. Plant decoction is given in fever. It is also used as a vermifuge.
***Indigofera tinctoria* L.**	Neel	**Papilionaceae**	**Under shrub**	**Leaf, Root**	Roots used in urinary complaints and jaundice. Leaf juice is useful in epilepsy and nervous disorders.
*Ipomoea aquatica*Forsk.	Kalmi Sag	Convolvulaceae	Herb	Leaf	Leaf paste is applied on ringworm, leprosy and other skin disorders. It is also used in treatment of fever, jaundice and to increase breast milk.
***Ipomoea cairica*(L.)Sweet**	**Morning Glory**	Convolvulaceae	Climber	**Leaf**	The plant is useful in treatment of cough, asthma and tuberculosis. Leaves paste is applied in skin diseases.
Ipomoea nil (L.) Roth	Kala dana	Convolvulaceae	Shrub	Seed	Seeds are used to treat urinary disorders. Dried seeds are used as purgative.
***Justicia adhatoda*L.**	Bansa	Acanthaceae	Shrub	**Leaf**	Leaf ash is used for the treatment of cough. Leaf juice is useful in treatment of dysentery, diarrhoea and tumors.

*Justicia procumbens*L.	MakhaniaGhas	Acanthaceae	Shrub	Leaf	Leaves juice is squeezed into the eyes for treatment of ophthalmia. Plant infusion used in asthma, cough, rheumatism and liver disorders.
***Maduca indica* Gmel.**	**Mahua**	Sapotaceae	Tree	**Seed, Flower**	Flowers are employed in coughs and bronchitis. Seeds oil is applied on skin diseases and rheumatism.
***Medicago sativa* L.**	**LahsunGhas**	**Papilionaceae**	**Herb**	Leaf, Seed	The tea made of leaves is used to strengthen digestive system. Sprouts of seed are useful in diabetes.
Parthenium hysterophorus L.	GajarGhas	Asteraceae	Herb	Root	Decoction of roots is used as tonic. Root decoction is also used in treatment of dysentery and skin diseases.
Pongamia pinnata(L.) Pierre.	Karanj	Papilionaceae	Tree	Seed, Bark	Bark powder is used in treatment of diabetes. Plant decoction is used to cure 'Beri-beri'. Seed oil is antiseptic and useful in cure of skin diseases.
Ruellia prostrate Poir.	Bell weed	Acanthaceae	Herb	Whole Plant	Plant decoction is used in fever, cough, indigestion and liver disorders.
*Ruellia tuberosa*L.	Blue bell	Acanthaceae	Shrub	Whole Plant	Plant is used as anti-diabetic, analgesic and gastric tonic. Also useful in treatment of gonorrhea and skin disorders.
***Sida acuta*(Burm. f.) Bross.**	Baraira	Malvaceae	**Under shrub**	**Leaf, Root**	Boiled leaves are used against elephantiasis. Roots are used for nervous and urinary disorders.
Sida cordata(Burm. f.) Boiss.	Adia Bel	Malvaceae	Herb	Leaf, Fruit, Root	Fruit decoction is used in sexual debility. Decoction of root is given in leucorrhoea and gonorrhea. Leaves crushed and applied on cuts.
***Sida cordifolia*L.**	Kharenti	Malvaceae	Under shrub	**Root**	Roots infusion is given in nervous and urinary disorders. Root powder is given with milk in leucorrhoea and frequent micturition.
Sida ovata Forsk.	Dabi	Malvaceae	Herb	Root	Root decoction is given in sexual debility. Powdered seeds mixed with jaggery are given in lumbago.
*Sida rhombifolia*L.	Sahdevi	Malvaceae	Shrub	Root	Decoction of roots is given in fever, swelling and burning micturition. Plant is used for the treatment of skin troubles, rheumatism and tuberculosis.
***Solanum nigrum* L.**	Makoy	Solanaceae	Herb	**Leaf**	Leaves are used in fever and eye troubles. Leaf decoction used as antispasmodic. leaf extract is taken orally in whooping cough.
***Sonchus oleraceus* L.**	Peeli Dudhi	**Asteraceae**	**Herb**	**Leaf, Root**	Roots and leaves are used for digestive problems. An ointment is prepared from the decoction for wounds and ulcers.
Sphaeranthus indicus L.	Gorakmundi	Asteraceae	Herb	Leaf	Leaf juice is used in tumors and piles. It is also used as a vermifuge. Plant juice is used for treatment of gastric disorders.
***Tephrosia purpure a*(L.) Pers.**	Sharpunkhada	**Papilionaceae**	Herb	**Root, Seed, Fruit**	Root decoction is used to cure bleeding piles, diarrhoea and dyspepsia. Seed oil is applied on eczema. Decoction made of pods is given in bronchitis.
Terminalia arjuna (Roxb. *ex* DC.) Wt. &Arn.	Arjun	**Combretaceae**	Tree	Bark, Leaf, Fruit	The bark is considered to be a tonic for heart. Decoction of leaves is useful in diabetes. Fruit is highly effective in controlling high blood pressure.
Trachyspermum ammi(L.) Sprague.	Ajwain	Apiaceae	Herb	Fruit, Root	Fruits are useful in flatulence, indigestion, colic and bronchitis. Roots are used as carminative, diuretic and febrifuge.
***Tridax procumbens* L.**	Sadahari	**Asteraceae**	Herb	**Leaf**	Leaf juice is used to get relief from ear ache. Leaves are used to treat dysentery and dental problems.
Xanthium strumarium L.	Bharunt	Asteraceae	Herb	Fruit, Root, Seed	Fruits are used in constipation and leprosy. Roots are useful in treatment of tumor. Seeds are eaten raw to get relief from headache.

Table 2: Family wise distribution of plant species.

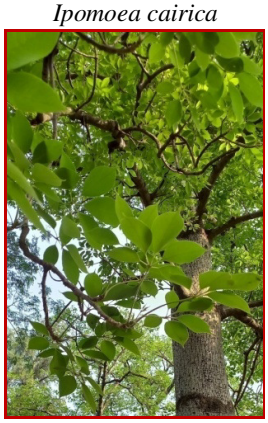
Sr. No.	Family	No. of Species	Sr. No.	Family	No. of Species
1.	Acanthaceae	5	11.	Euphorbiaceae	5
2.	Amaranthaceae	7	12.	Liliaceae	2
3.	Apiaceae	1	13.	Malvaceae	5
4.	Asteraceae	8	14.	Meliaceae	1
5.	Bombacaceae	1	15.	Papaveraceae	1
6.	Boraginaceae	3	16.	Papilionaceae	6
7.	Combretaceae	1	17.	Poaceae	1
8.	Convolvulaceae	4	18.	Sapotaceae	1
9.	Cucurbitaceae	3	19.	Scrophulariaceae	1
10.	Cyperaceae	1	20.	Solanaceae	4


Ipomoea cairica


Terminalia arjuna


Croton bonplandianum


Sida acuta


Bombax ceiba

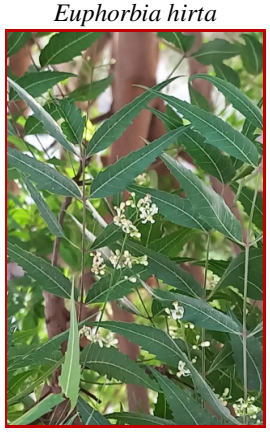

Eclipta prostrata


Euphorbia hirta


Celosia argentea


Barleria prionitis


Xanthium strumarium


Azadirachta indica


Coccinia grandis

Plate 1: Some of the medicinal plants used by local inhabitants of Saharanpur district.

In order to enhance the existing indigenous knowledge, the documentation of traditional knowledge about wild medicinal plants is deemed necessary. Several ethnobotanical studies were carried out to take record of the species used by the residents contiguous in the different area for health care. The present study has also been compared with important published literature (Jain, 1991; Chandel *et al.,* 1996; Khare, 2007; Tomar, 2009). Proper documentation of this indigenous knowledge would be of great importance to understand the biodiversity, and to ensure sustainable use of natural plant resources (Singh, 1999).

The floristic wealth of this region is under severe human pressure and considerable number of medicinal plants being lost mainly due to human interference, so immediate preservation measures should be taken to protect plant wealth of the district. Awareness programmes are urgently needed to sensitize the people about the importance of biodiversity for food, health and other needs of growing population for present and future generations.

CONCLUSIONS

It is evident from the result that the ethnomedicinal knowledge is still alive in the study area as the people still use phytomedicines for their various health problems. A total of 61 medicinal plants were collected used for the treatment of various diseases. The principal life form for medicine was herb and leaf was the principal plant part used. Furthermore, the most

common treated diseases group was digestive disorders. These plants have tremendous potentials for pharmaceutical products of commercial values but due to the lack of awareness and proper documentation, this wealth is decreasing day by day. Therefore, it is necessary to explore the traditional ethnomedicinal wealth and knowledge with pharmacological aspects through creating awareness and motivating local people for cultivation and conservation of medicinal plants. In recent years, significant changes within several aspects of ethno-medicine occurred as a result of environmental degradation and tremendous changes in modern social systems. Due to these factors, the traditional knowledge system in India is fast degrading. Hence, there is an urgent need to document all ethno-botanical information among the diverse ethnic communities before the traditional culture vanishes.

FUTURE SCOPE

The present study would be of immense importance to preserve the indigenous traditional knowledge of medicinal plants used by the rural people in treatment of various health problems. These plants have tremendous potential for the preparation of various pharmaceutical products of commercial importance.

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