



## ETHNOMEDICINAL PLANTS OF THE DISTRICT BIJNOR (U.P.) INDIA

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This manuscript is the study of medicinal plants of the district Bijnor and it also encompasses the study of traditional ethnomedicinal knowledge on the collected plants. Some Vaidhyas, Tribes and native people of the district were consulted to know folk medicinal uses of plants. They were also convinced for field trips to cover all areas at regular intervals. Forty medicinal plants belonging to forty genera and twenty five families have been presented in this manuscript with their botanical names, families, local names, flowering and fruiting period and folk medicinal uses.

**Key Words:** Ethnobotany, District Bijnor.

Plants are fundamental to almost all life on the earth, providing protection and sustenance for organisms ranging from bacteria to large mammals. Throughout recent decades, the scope of ethnobotany has become extremely broad. Ethnobotany is considered to encompass all studies which concern the mutual relationships between plants and human societies. The district Bijnor (U.P.) is one of the richest floristic regions of India and has been a source of plants and their products since antiquity and man uses them in different ways according to his needs, particularly as food and medicine. In this district, more than half of the population is dependent on traditional therapies, many of which involve a heavy reliance on medicinal plants. Ethnobotany is a very fascinating science and its methodology requires various patterns of collecting, observing, documentation, analysis of many data of varied nature collected through various sources.

The district of Bijnor forms the north-western part of the Moradabad division of U.P. The district lies between 29°2' - 29°58'N latitude and 78°0' - 78° 59' E longitude. It covers an area of 4561 sq km. Major part of the district forms a part of the Indo-gangetic alluvium. The district has been a perennial source of cynosure, curiosity and challenge to human intellect throughout the ages. Amongst several assets, vegetation provides an interesting field of investigation. The diversity, copiousness as well as uniqueness of plants in various habitats

retain sound and aesthetic environment of the district. However in recent past couple of years excessive exploitation of vegetation, unplanned land use, and several developmental processes, accelerated deterioration of biodiversity and harmonious ecosystem of the district. About 80% of population in developing countries depends directly on plants for its medicine according to World Health Organization (WHO) (Pareek 1996, Mukhopadhyay 1998). Whereas, in India more than 2000 drugs used are of plant origin (Dikshit 1999). WHO has listed 20,000 medicinal plants globally (Gupta and Chadha 1995) where India's contribution is 15 to 20% (Singh 2000).

### MATERIALS AND METHODS

The work was undertaken through field study carried out during the period of April 2008 to April 2011 in different seasons from various localities of the district Bijnor. Some Vaidhyas (Arya Ji, Solanki Ji and Digvijay Singh), Hakims (Inaumullah Ji), Tribes (Shankar), the elderly village people (Khanna Ji) and the native people (Lakshman Ji) of the district were convinced for field trips to cover all areas at regular intervals and to collect information on folk medicinal uses of the collected plant species. The plant samples were collected and processed following the routine method of plant collection and herbarium technique (Jain and Rao, 1977). The plants were collected in its flowering state in most of the cases and data concerning its method of use, plant type, mode

of preparation, local name, etc. have been recorded with a photograph of all specimens. The plant specimens have been identified using relevant floras and standard literature (Hooker 1872-1897, Duthie 1903-1929, Murthy and Singh 1961, Maheshwari 1963, Gaur 1999, Raizada and Saxena 1978, Kanjilal *et al.* 1982).

## RESULTS AND DISCUSSION

Forty medicinal plants belonging to forty genera and twenty five families have been presented in table 1. These medicinal plants enumerated alphabetically in their botanical names followed by family, local name, flowering and fruiting period and folk medicinal uses.



Fig.1 *Acorus calamus* Linn.



Fig.2 *Caesalpinia decapetala*  
(Roth) Alston



Fig.3 *Cleome viscosa* Linn.



Fig.4 *Commelina benghalensis*  
Linn.



Fig.5 *Desmodium gangeticum*  
(Linn.) DC



Fig.6 *Hygrophila auriculata*  
(Schumacher) Heine



Fig.7 *Malva parviflora* Linn.



Fig.8 *Mimosa pudica* Linn.



Fig.9 *Murraya paniculata*  
(Linn.) Jack



Fig.10 *Sonchus oleraceus*  
(Linn.)



Fig.11 *Swertia chirayita*  
(Roxb. ex Fleming) Karsten



Fig.12 *Tamarix dioica*  
Roxb. ex Roth

**Table 1:** List of most important local available plants of the district Bijnor (U. P. ) India

S.No.	Botanical Name & Voucher No.	Family	Local Name	Flowering & Fruiting	Folk Medicinal Uses
1.	<i>Acorus calamus</i> Linn.  V. No. 8	Araceae	Bach	June- September	Extract of the rhizome is often used in gastric troubles of infants, sometimes garland is tied around neck or belly to relieve jaundice and also used in bronchitis.
2.	<i>Ageratum conyzoides</i> Linn.  V. No.13	Asteraceae (Compositae)	Sarenda Ghas	January– December	Its leaves are made into paste and applied on cuts, sores and various skin ailments.
3.	<i>Anagallis arvensis</i> Linn.  V. No. 22	Primulaceae	Molina	February– September	The plant is made into paste or extract which is used in leprosy, dropsy and cerebral affections.
4.	<i>Anisomeles indica</i> (Linn.) Kuntze V. No. 24	Lamiaceae (Labiatae)	Kalabangra	July- October	The Plant extract is used as carminative and astringent.
5.	<i>Bryophyllum pinnatum</i> (Lam.). Oken  V. No. 30	Crassulaceae	Parn-beej	March-July	The poultice of leaves is used to wounds and bruises.
6.	<i>Caesalpinia decapetala</i> (Roth) Alston V. No. 48	Caesalpinaceae	Karanj	February– November	The Leaves are applied to burns.
7.	<i>Carica papaya</i> Linn.  V. No. 54	Caricaceae	Papeeta	January– December	Milky juice of the fruit is used in various skin ailments.
8.	<i>Cassia tora</i> Linn.  V. No. 59	Caesalpinaceae	Chakramarda	April- December	The leaves are pounded and applied on skin diseases, cuts and wounds and the seeds are used in bone fracture.
9.	<i>Catharanthus roseus</i> (Linn.) G. Don  V. No. 60	Apocynaceae	Sadabahar	Most part of the year	The juice of the plant is taken to cure diabetes and leaves are applied on wasp stings.
10.	<i>Cichorium intybus</i> Linn.  V. No. 67	Asteraceae (Compositae)	Kasni	March- September	A paste of the herb is applied in inflammations over the skin externally and its powdered seeds are used to cure liver disorders and to check enlargement of the spleen with general dropsy.

11.	<i>Cleome viscosa</i> Linn. V. No. 72	Cleomaceae	Hulhul	July- December	Seed paste of the plant is applied externally on rheumatic arthritis and the juice of the leaves is dropped in otorrhoea and the leaf paste with butter is applied on wounds.
12.	<i>Commelina benghalensis</i> Linn. V. No. 77	Commelinaceae	Kankawa	March- August	The plant is used as a laxative and is said to be beneficial in leprosy.
13.	<i>Crinum asiaticum</i> Linn. V. No. 83	Amaryllidaceae	Sudarshan	February- July	Extract of the bulb is used as an emetic.
14.	<i>Cyperus rotundus</i> Linn. V. No. 87	Cyperaceae	Motha, Nagarmotha	July- December	The plant extract is used as diaphoretic and astringent and its bulbous roots are scraped and pounded with green ginger and after mixing with honey, are taken in dysentery.
15.	<i>Desmodium gangeticum</i> (Linn.) DC. V. No. 92	Fabaceae	Salparni	March- December	The roots are astringent and tonic and are used in chronic fever and dysentery.
16.	<i>Helianthus annuus</i> Linn. V. No. 118	Asteraceae	Surajmukhi	April- October	The seed oil is taken to maintain the cholesterol level in the blood and seeds are used in bronchial affections.
17.	<i>Hibiscus rosa-sinensis</i> Linn. V. No. 120	Malvaceae	Gudhal	January- December	The leaves are emollient and their juice is beneficial in gonorrhoea and alopecia.
18.	<i>Hygrophila auriculata</i> (Schumacher)Heine V. No. 123	Acanthaceae	Talimkhana	January- December	The roots, leaves and seeds are said to be useful in urogenital and liver troubles.
19.	<i>Lantana camara</i> Linn. V. No. 137	Verbenaceae	Gendi	January- December	The decoction of the entire plant is given in malaria and the bruised leaves are used in skin ailments.
20.	<i>Leucas cephalotes</i> (Roth) Sprengel V. No.140	Lamiaceae (Labiatae)	Gumba	July- November	Its dried leaves mixed with tobacco ( <i>Nicotiana tabacum</i> ) in the ratio of 1:3 are smoked to cure piles and the plant is also supposed as an antidote to snake-bite.



21.	<i>Macrotyloma uniflorum</i> (Lam.) Verdc. V. No. 144	Fabaceae	Kulath	August-October	The leaf juice is dropped in otalgia and the decoction of seeds is given in leucorrhoea.
22.	<i>Malva parviflora</i> Linn. V. No. 147	Malvaceae	Khubbaji, Diwla Ghas	January-June	Seeds are used in gonorrhoea and roasted seeds are chewed in throat irritation and the leaf extract is applied on cuts and wounds.
23.	<i>Malvastrum coromandelianum</i> (Linn.) Garcke V. No.148	Malvaceae	Beej band	January-December	The decoction of the leaves is given in dysentery and the leaf paste is applied on wounds.
24.	<i>Melilotus indica</i> (Linn.) Allioni V. No.152	Fabaceae	Ban-Methi	January-May	Roasted seeds are given in diarrhoea and dysentery.
25.	<i>Mimosa pudica</i> Linn. V. No. 155	Mimosaceae	Chui-mui, Lajwanti	September-November	Roots are used as antidote to snake-bite and as remedy of digestive disorders.
26.	<i>Momordica charantia</i> Linn. V. No. 158	Cucurbitaceae	Karela	April-November	Fruits and seeds are used in diabetic disorders and rheumatic pain.
27.	<i>Mucuna pruriens</i> (Linn.) DC. V. No.161	Fabaceae	Konch	August-January	Its endosperm is applied on eczema and seed powder is used in diabetes.
28.	<i>Murraya paniculata</i> (Linn.) Jack V. No.163	Rutaceae	Kamini	April-November	The leaf powder is taken in cough and cold.
29.	<i>Peristrophe paniculata</i> (Forsk.) Brumitt V. No.177	Acanthaceae	Kakjangha,	July-November	A paste of the leaves is applied on wounds and the whole plant is used in fever.
30.	<i>Physalis peruviana</i> Linn. V. No.183	Solanaceae	Rasbhari	July-November	The leaf infusion is taken in stomach disorders.
31.	<i>Punica granatum</i> Linn. V. No.195	Punicaceae	Anar	April-December	A decoction of the fruit -rind is taken in chronic dysentery and cough and cold.
32.	<i>Ranunculus sceleratus</i> Linn. V. No.196	Ranunculaceae	Jaldhaniya	February-August	The plant juice is used as anodyne and in skin disorders.
33.	<i>Sida rhombifolia</i> Linn. V. No. 205	Malvaceae	Mahabala	June-December	The leaf paste is applied externally on boils and joints pain.
34.	<i>Sonchus oleraceus</i> Linn. V. No. 211	Asteraceae	Dudhkani, Dudhi,	March-November	The roots and leaves are used in jaundice.

35.	<i>Sphaeranthus senegalensis</i> D.C. V. No. 212	Asteraceae	Gorakhmund, Mundi	March-June	The powdered roots are given in stomach ache and the powdered bark mixed with whey is given to cure piles and the roots are used as diuretic.
36.	<i>Swertia chirayita</i> (Roxb. ex Fleming) Karsten V. No. 215	Gentianaceae	Chiraita	August- November	The plant is used in blood diseases and as febrifuge and to cure asthma.
37.	<i>Tagetes erecta</i> Linn. V. No. 218	Asteraceae	Genda	January- December	A paste of flower is often applied on wounds and cuts and the leaf juice is dropped in otalgia.
38.	<i>Tamarix dioica</i> Roxb. ex Roth V. No. 222	Tamaricaceae	Jhau	April- October	The fumigations of the leaves are taken in wounds and piles.
39.	<i>Trianthema portulacastrum</i> Linn. V. No. 228	Aizoaceae	Bishkhapra	June- December	An infusion of the roots is given in constipation and jaundice and the decoction of the roots is used in rheumatism.
40.	<i>Vernonia cinerea</i> Linn. V. No. 238	Asteraceae	Sahadevi	January- December	The leaf extract is used in dysentery and seeds are used in cough and cold.

Out of the collected 185 Total taxa, 40 taxa are used for medicine; these 40 medicinal species are used as folk remedies by the Hakims, Vaidhyas, Tribes and populace for the treatment of various diseases. The study underlines the potentials of the ethnomedicinal research and need for the documentation of traditional knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind. The total tribal population in Bijnor is 1,863. There are 11 blocks in the district but tribals only live in three of them, viz. Kotwali, Najibabad and Afsalgarh. The Bhojas tribe are found in six villages of the block of Kotwali, they originally migrated from the regions of Kumaun and Nainital in Uttarkhand. However, they were hesitant to provide ethnomedicinal informations on the plants, but, later, they convinced on my humble request and the information was collected by personal interviews using structured questionnaires.

## CONCLUSION

While local knowledge can prove valuable in efforts aimed at conserving diversity, it is important to remember that both traditional knowledge and traditional resources are fundamental to cultural identity, and the conservation of cultural diversity itself. The value and importance of traditional knowledge are now being increasingly acknowledged all over the world. Despite dense urbanization, medicinal plants still play a key role in the health care of the local population of the district Bijnor (U.P), so an endeavour is to be made to make people aware of potential of the medicinal plants from all angles so that these life saving plants might be protected from their total destruction.

The authors present their heartiest thankfulness to Dr. R.S. Saxena, Head of the Department of Botany, Meerut College, Meerut and Dr. A.K. Gupta for providing imperative facilities. The

Tribes (Shankar), Hakims (Inamullah ji), Vaidhyas (Arya ji, Solankiji and Digvijay Singh) and the Common people (Khanna ji and Lakshmanji) are also acknowledged for their extensive cooperation for bringing all the information regarding the folk medicinal uses of the plants.

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