

RESEARCH ARTICLE

Study of ethno-botanical shrub and its utilization in Agra district Uttar Pradesh

■ **Brajesh Kumar and Subhash Chandra**

SUMMARY

India has been known as a rich source for valuable medicinal Shrubs. These Shrubs are found and distributed in throughout India and various parts of world. Since the ancient time, Shrub species have been used as the source of botanical medicine by the human beings. Shrubs are the richest source of medicine due to the presence of biochemical, which are useful to cure the various diseases. Usefulness of medicinal Shrubs is well documented since the time immemorial. The present study includes ethno-botanical importance in which vegetative parts of Shrubs which is commonly used by different local community. Ethno-botanical density as well as diversity may variable region to region and habitats to habitats. Keeping this in view an extensive survey work was carried out in Agra (Western part) of Uttar Pradesh state of India, for the medicinal Shrubs resources of Agra, Uttar Pradesh to obtain info about the traditional uses, knowledge of local people and traditional healers about these popular shrubs. Based on the results obtained, it was concluded that find 21 species is a useful medicinal used to treat different human and livestock ailments. Their body parts are using for curing different types of serious diseases such as tuberculosis, leprosy, asthma, piles, dengue fever, typhoid fever, blood bleeding etc. in human beings, domestic animals and other wild animals. Present paper advocated to local peoples (especially of rural areas), for protection of these Shrubs and secure their life for better survival.

Key Words : Medicinal shrub, Medicinal values, Ethno-Botany, Traditional use

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Ethno-botany studies the complete information about plants and their medicinal uses (Rahul, 2013). *Rig Veda* says that man learned to distinguish edible plants from the poisonous ones by observing the way animals used them (Manilal, 1989). Local people Community in many parts of India are using traditional medicine prepared from medicinal plants or creatures found in their locality. Use of remedial plants

to cure various diseases is a practice from time immemorial (Patel *et al.*, 2013). Shrub are one of the most important elements in the forest in which the local and people Community depend for their multifarious requirements. The utilization aspects of many shrub species are unknown due to the lack of detailed scientific documentation. The Ethno-botanical aspects of many shrub species are hitherto unknown or are poorly documented.

According to the WHO more than 80 per cent of the World's population relies on traditional herbal medicine for their primary health care (Mahbubur Rahman and Khanom, 2013). The study and assessment of plant-human relations in all phases and the effect of plant environment on human society (Sharma and Kumar, 2011). Uttar Pradesh has rich biodiversity consisting of a large number of plants, some of which are used for their medicinal value. In the India use of plant product as food, fodder, fuel, shelter, warmth, medicines, drugs, clothing, agricultural implements, hunting, narcotics, poison, gums, dyes, insecticides, oil, fibre, alcohol and miscellaneous etc. (Pandey and Tripathi, 2017). Old-style healers employ methods based on the ecological, socio-cultural and religious background of their people to provide health maintenance (Rai and Lalramnghinglova, 2011).

The Ethno- botanical knowledge most important of any community culture for human society. In the past, ethno-botanical research was predominately a survey of the plants used by villagers. Plants are the main requirement of all types of medicine. The ancient Hindus should be use of plants in the socio-cultural activities (Maheshwari *et al.*, 2018). It is well known fact that plant parts are being used from ancient time in traditional medicine like Ayurveda as well as modern Allopathy. But by passing of time, we are kept on losing our knowledge of these traditional medicinal uses. A number of workers are having done the ethno botanical survey place to place to know the use of plants and their parts for common people. Even pharmaceutical companies are referencing the ancient literature to find out the medicine of present day health problems. Some rural person keeps about knowledge particular disease treatment by local vegetation. The unemployed people for economic benefits collection of plant parts in the Agra region (Sharma *et al.*, 2017). Common medicines, mainly based on plants, appreciate a respectable position today, especially in the developing countries, where modern health service is

limited. Safe, effective and low-cost indigenous remedies are gaining popularity among the people of both urban and rural areas, especially in India (Pareek and Trivedi, 2011). A review of the works reveals that, although a lot of ethno-medicinal work has been done in the region, some ethno-botanical breaks in knowledge exist in this region and this is revealed in the present paper. The present learning is towards a complete probe on the role of plants in food, shelter, medicines, occupations, recreation, magic-religion, ceremonies, decoration and adornment by the people of District Agra (Kumar and Khare, 2019).

MATERIAL AND METHODS

Reconnaissance surveys were conducted throughout the district for locating the community groups, their distribution, status and traditional way of life, the degree of traditional knowledge practices, etc. The selected hamlets were visited regularly and data pertaining to shrubs, in their life and culture was gathered periodically. Ethno-botanical information was gathered either by interviewing the informants or from the direct observation from the field itself on the uses of shrubs. Each of the information of a particular shrubs used among the people Community was tested directly or indirectly. The reliability of the information of the shrubs used was assessed after repeated verification.

Study site:

The present investigation entitled “evaluate of ethno-botanical shrubs and its utilization in district Agra Uttar Pradesh” was conducted to study the extensive and intensive surveys for ethno-botany of plants with its utilization. Phytosociology aspects of important forest shrubs were find to study of Agra forest at four different

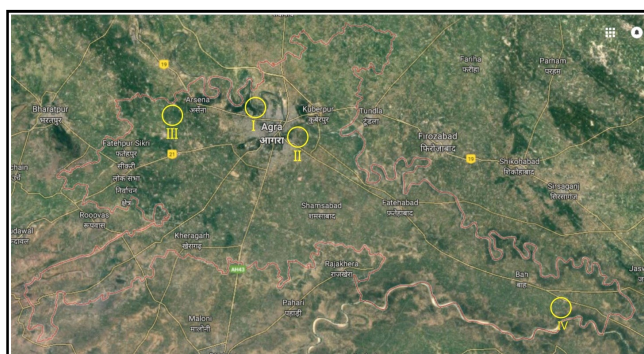


Fig. A: The study area of Agra district Uttar Pradesh

site viz., Mau forest, Taj Nature walk, Kitham lake (Raunakata), Chambal safari the (Bahpinahat Agra) in Agra during the period 2016. The details of the materials and methods adopted during the course of investigation have been described in this chapter under appropriate headings.

Situated in the extreme southwest corner of Uttar Pradesh, District Agra stretches across 26° 44' N to 27° 25' N and 77° 26' E to 78° 32' E. Its borders touch Rajasthan to its west and south, the district of Firozabad to its East and the districts of Mathura and Etah to its North. Situated at the banks of River Yamuna and Chambal it has limited forest area sporting trees of Babul, Ber, Neem and Peepal. It is situated in the ravines area. It has an average elevation 171m above main sea level.

RESULTS AND DISCUSSION

The study revealed that there are 21 shrubs belonging 14 families have been documented which directly involved with the life and culture of different local community (Table 1). Among the total shrubs documented with indigenous uses there are ethno-botanical. Among

them 1 camel fodder shrubs species found to be in district Agra Uttar Pradesh. The most of the shrubs are found in Semi-arid forest and Dry deciduous forests. On the two sites (Taj Nature walk, Kitham lake Raunakata) some shrubs also ornamental. There are 10 species represented in Semi-arid forest and 11 Dry deciduous forests shrubs species. Among them 8 shrubs species are planted by forests Department; 8 thorny shrubs species occupied in Agra region.

Ethno-botanical aspect:

The shrubs involved in the diverse needs of the different local community groups are categorised in to 4 useful aspects. Amongst the different 21 shrubs are used in Ethno botanical followed by 4 shrubs with edible parts and the remaining have several other aspects like views, religious, medicine, cultural rituals and worships etc. Regarding the parts of the shrubs used for various Ethno botanical aspects is most useful part bark, flower, fruits, leaves, seeds, root etc. The mostly shrubs are used for remedial human diseases and some veterinary diseases. Among the 14 shrubs families represented Apocynaceae

Table 1 : Ethno botanical aspects of Shrubs in Agra Distract of Uttar Pradesh

Scientific name	Family	Local name	Locality	Source of information (Community)	Use/Condition
<i>Duranta repens</i>	Verbenaceae	Gold dew drop	Taj nature walk	Mallah	An infusion of the leaf and juice of the fruit is diuretic, and flower is said to have stimulant properties.
<i>Bougainvillea spectabilis</i>	Nyctaginaceae	Great bougainvillea	Taj nature walk	Jatav	The plant is also widely grown as an ornamental plant.
<i>Bouhainvillea glabra</i>	Nyctaginaceae	Paper Flower	Taj nature walk	Mallah	They can be kept as indoor houseplants in temperate regions and kept small by bonsai techniques
<i>Calotropis procera</i>	Apocynaceae	Mudar	Common	Sepherd	Despite serious safety concerns, calotropis is used for digestive disorders including diarrhea, constipation and stomach ulcers; for painful conditions including toothache, cramps, and joint pain; and for parasitic infections including elephantiasis and worms.
<i>Cannabis sativa</i>	Cannabaceae	Bhang, Sukha	Taj nature walk	Jatav	The resinous exudations of stem, young leaves and flowers are used to prepare intoxicating drugs like 'ganja' and 'charas'. Dried leaves are used as 'bhang' which is very potent narcotic.
<i>Capparis deciddua</i>	Capparaceae	Kair	Common	Mallah	When pickled or cooked as vegetables, pickle, the immature fruits are used to cure stomach problems, especially constipation
<i>Capparis septaria</i>	Capparaceae	Hees	Common	Sepherd	Treat liver and kidney diseases; paralysis; Moroccans used diabetes.
<i>Carissa carandas</i>	Apocynaceae	Corinda	Chambal safari, (bahpinahat Agra)	Vaidhya	Used in dropsy, anasarca, madness, rheumatism, hemiplegia, epilepsy, convulsions, postnatal complaints, sores and bite of rabid jackal or dog.
<i>Datura innoxia</i>	Solanaceae	Datura	Kitham Lake (Raunakata)	Yadav	Used to treat asthma, and diarrhoea, as an analgesic, to control fever, to kill parasites, and as a drug for criminal purposes
<i>Datura metel</i>	Solanaceae	Sada datura	Kitham Lake (Raunakata)	Sepherd	Relieving asthma, cough, tuberculosis and bronchitis by smoking the dried leaves, roots or flowers as a cigarette or in a pipe

Table 1 contd...

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<i>Ipomoea carnea</i>	Convolvulaceae	Besharam	Kitham Lake (Raunakata)	Sepherd	Some believe that <i>I. carnea</i> is the real source of the Soma in the Hindu Rg Veda
<i>Jatropha curcas</i>	Euphorbiaceae	Ratanjot	Kitham Lake (Raunakata)	Yadav	The oil is applied externally to treat skin disease, and for rheumatism and sciatica.
<i>Jatropha gossypifolia</i>	Euphorbiaceae	Bellyache bush	Kitham Lake (Raunakata)	Sepherd	The oil is used as the purgative and locally applied in skin disease and arthritis.
<i>Lantena camera</i>	Verbenaceae	Raimuniya	Common	Yadav	Used as medicine for the treatment of cancers, chicken pox, measles, asthma, ulcers, swellings, eczema, tumors, high blood pressure, bilious fevers, catarrhal infections, tetanus, rheumatism,
<i>Lawsonia inermis</i>	Lythraceae	Henna / Mehndi	Taj nature walk	Jatav	Henna leaf has an orange-red dye and leaf paste or powder is widely used for decorating hands, nails and feet with patterns
<i>Nerium</i> spp.	Apocynaceae	Kandira	Taj nature walk	Sepherd	A decoction of leaves is recommended to reduce swellings and oil prepared from the root bark is used for skin diseases and in leprosy
<i>Opuntia elatior</i>	Cactaceae	Nagaphani	Kitham Lake (Raunakata)	Brahman	Furthermore, vitamin C is an important component of various enzymatic and metabolic processes, including the creation of bone and muscle tissue.
<i>Salvadora oleoides</i>	Salvadoraceae	Pilu	Common	Vaidhya	The results showed that the fruits of <i>S. persica</i> are eaten in raw, cooked, or dried by the inhabitants of the sites where <i>S. persica</i> grow in abundance
<i>Tecoma</i> spp.	Bignoniaceae	Tecoma spp	Taj nature walk	Mallah	Aqueous extract of the plant used as an anti-diabetic in traditional medicine
<i>Urena lobata</i>	Malvaceae	Caesar weed	Kitham Lake (Raunakata)	Yadav	Seeds are used to produce soap, while the charcoal of the whole plant is used for blackening teeth
<i>Zizyphus</i> spp.	Rhamnaceae	Ber	Common	Sepherd	It has been used to make legs for bedsteads, agricultural implements The leaves are readily eaten by camels, cattle and goats and are considered nutritious.

is represented by (3) shrubs followed by Verbenaceae (2), Nyctaginaceae (2), Capparaceae (2), Euphorbiaceae (2), has minimum Cannabinaceae (1), Convolvulaceae (1) Lythraceae (1), Cactaceae (1), Salvadoraceae (1), Malvaceae (1), Bignoniaceae (1), Rhamnaceae(1). Based on the high utilization potential of the shrubs which are used by the different communities the shrubs like *Calotropis procera*, *Cannabis sativa*, *Capparis sepiaria*, *Capparis decidua*, *Datura innoxia*, *Datura metel*, *Lantena camera*, *Lawsonia inermis*, *Opuntia elatior*, *Salvadora oleoides*, *Urena lobata* and *Zizyphus* spp. are considered under dynamic ethnic shrubs which have been in performance an important role for the being of these fading communities.

Conclusion:

The present study is very helpful to list out various ethno-botanical shrubs of Agra district. The current study revealed the knowledge about the edibility; the preservation of this knowledge appears to be the result of continued reliance of local communities, medicinal and edible plants. The paper provided here can be utilized to

further studies on conservation and cultivation of ethno-botanical plants, because most of the shrubs species are on the way of extinct due to pollution. The youth should also be encouraged to learn the traditional knowledge to preserve it from being lost with the older generation. The present paper briefly provides the ethno-botanical information's related to 21 medicinal shrubs. Shrubs are one of the most important components of the forest where the different local community reside. Shrubs are similarly providing economic, aesthetic and ecological value, which directly involve in the life and culture of the local community in their nearby environment. However there are some spread reports on the ethno botanical usages of shrubs species, complete studies are lacking. The information likely is directly comparative to the interface with the immediate surroundings. The original uses of the shrubs distributed in Semi-arid forest and Dry deciduous forests are out of sorts recognized from works. The consumption features of several prevalent shrubs are slight acknowledged due to lack of certification. The current study challenges to document totally the varied uses in broad way. The study also concludes the records

of the several previously new uses, which also comprise the psychoactive property. By the Upgrading, especially mechanization and development has resulted in the declining of this rich tradition of information, from among the people of the traditional societies. There is a crucial need for documentation of such fast disappearing knowledge, to study and certify, validate the various use value of neutral resources for future generation and to acquire intellectual property rights for the privilege.

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