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Ethnobotanical Medicinal plants in Lakhimpur-Kheri U.P. (India) used for Healthcare

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Abstract:

This study investigates an idea of repetitive field trips made in Banskhera Shantivihar Colony near Jal Bhawan during 2018-2019 in a about three species were collected from different localities. The broad survey was carried out in different sites of district Kheri during April and May 2018. Historical aspects were studies with the help of local people and inventory is prepared. The documentation including name of the plant, extent and status the total area has also been carried out. The natives of the area have to use the wild edible plant for various purposes and dependent on surrounding plant resources for a long time for their food and other cultural practices. An ethnobotanical study reveals that the ethnic people have traditional knowledge of the wild edible plants and their utilisation. Different plant available in the locality used by villagers as well as tribals. The sustainable future and management issue of medicinal species i.e., Withania somnifera (Ashwaganth), Rauwolfia serpantina (Sarpgandha), Curcuma longa (Turmeric), Mentha arvensis (mint) and Acacia nilotica (Babul) are discussed in view of their conservation management.

Keywords: Tribals, Ayurvedic industries, forest, Kheri and Banskhera.

Introduction

Lakhimpur-Kheri (U.P.) India is a city located in Lakhimpur-Kheri district the state of U.P., northern India about 120 km. from Lucknow, the state capital and 135 kilometers from Amausi International Airport. Attraction in the city include Sankata Devi, Eidgah Park, Willoughby Memorial and hindu temples. The city economy is mainly based on the sugarcane industry. DNP (Dudhwa National Park) is the main attraction of Lakhimpur Kheri district. It is the only national park in the state with very diverse and unique flora and fauna. Lakhimpur's latitude and longitude coordinates are 27.94^0 latitude north and 80.77^0 longitude East.

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Medicinal plants are various plants thought by some to have medicinal properties, but few plants or their phytochemical constituents have been proven by rigorous science or approved by regulatory agencies such as the United States Food and Drug Administration or European Food Safety Authority to have medicinal effects.

The research papers in this category can be about traditional healing uses of plants, allopathic medicines derived from plants and pharmacological research results about a plant.

Herbs are staging a comeback and herbal renaissance is happening all over the globe. The herbal products today symbolize safety in contrast to the synthetics that are regarded as unsafe to human and environment. Although herbs had been priced for their medicinal, flavouring and aromatic qualities for centuries, the synthetic products of the modern age surpassed their importance, for a while. However, the blind dependence on synthetics is over and people are returning to the naturals with hope of safety and security.

Over three-quarters of the world population relies mainly on plants and plant extracts for health care. More than 30% of the entire plant species, at one time or other, were used for medicinal purposes. It is estimated that world market for plant derived drugs may account for about Rs. 2,00,000 crores. Presently, Indian contribution is less that Rs. 2000 crores. Indian export of raw drugs has steadily grown at 26% to Rs. 165 crores in 1994-95 from Rs. 130 crores in 1991-92. The annual production of medicinal and aromatic plants raw material is worth about Rs. 200 crores. This is likely to touch US $150 by the year 2000 and US $5 trillion by 2050.

It has been estimated that in developed countries such as United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as China and India, the contribution is as much as 80%. Thus, the economic importance of medicinal plants is much more to countries such as India than to rest of the world. These countries provide two third of the plants used in modern system of medicine and the health care system of rural population depend on indigenous systems of medicine. Of the 2,50,000 higher plant species on earth, more than 80,000 are medicinal. India is one of the world's 12 biodiversity centers with the presence of over 45000 different plant species. India's diversity is unmatched due to the presence of 16 different agro-climatic zones, 10 vegetation zones, 25 biotic provinces and 426 biomes (habitats of specific species).

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Of these, about 15000-20000 plants have good medicinal value. However, only 7000-50000 species are used for their medicinal values by traditional communities. In India, drugs of herbal origin have been used in traditional systems of medicines such as *Unani* and *A*yurveda since ancient times. The *Ayurveda* system of medicine uses about 700 species, *Unani* 700, *Siddha* 600, Amchi 600 and modern medicine around 30 species. The drugs are derived either from the whole plant or from different organs, like leaves, stem, bark, root, flower, seed, etc. Some drugs are prepared from excretory plant product such as gum, resins and latex. Even the Allopathic system of medicine has adopted a number of plant-derived drugs which form an important segment of the modern pharmacopoeia. Some important chemical intermediates needed for manufacturing the modern drugs are also obtained from plants example, diosgenin. solasodine, ionone. Not only, that plant-derived drug offers a stable market worldwide, but also plants continue to be an important source for new drugs. Traditional systems of medicine continue to be widely practiced on many accounts. Population rise, inadequate supply of drugs, prohibitive cost of treatments, side effects of several allopathic drugs and development of resistance to currently used drugs for infectious diseases have led to increased emphasis on the use of plant materials as a source of medicines for a wide variety of human ailments. Global estimated indicate that 80% of about 4 billion population cannot afford the products of the Western Pharmaceutical Industry and have to rely upon the use of traditional medicines which are mainly derived from plant material. This fact is well documented in the inventory of medicinal plants, listing over 20,000 species.

In spite of the overwhelming influences and our dependence on modern medicine and tremendous advances in synthetic drugs, as large segment of the world population still like drugs from plants. In many of the developing countries the use of plant drugs is increasing because modern life saving drugs are beyond the reach of three quarters of the third world's population although many such countries spend 40-50% of their total wealth 4 on drugs and health care. As a part of the strategy to reduce the financial burden on developing countries, it is obvious that an increased use of plant drugs will be followed in the future.

Objectives

- In this paper I am trying to find out the systematic position of medicinal plants, their properties and use in medicine.

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- Ayurveda is one of ancient and has efficient medicinal cures so by knowing medicinal use of Ayurvedic plants is must.
- From this paper I would like to inculcate the ancient medicinal plants and their properties.

Withania somnifera (Ashwagandha)

Ashwagandha (picture is obtained with the courtesy of google net site)

Scientific classification

Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Asterids
Order:	Solanales
Family:	Solanaceae
Genus:	Withania
Species:	somnifera

Binomial name-Withania somnifera

Synonyms-*Physalis somnifera*

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Withania somnifera, also known as Ashwagandha, India ginseng, Winter cherry, Ajagandha, Kanaje Hindi, Amukkara in Tamil and Samm Al Ferakh, is a plant in the *Solanaceae* or nightshade family.

Medicinal use

In Ayurveda, the roots of Withania somnifera are used to prepare medicinal Ashwagandha. It is claimed to possess aphrodisiac, sedative, rejuvenative and life prolonging properties. It is traditionally used to treat the following symptoms and conditions, although there are few scientific studies of the health benefits of Ashwagandha:

- chronic fatigue
- dehydration
- bone weakness
- muscle weakness and tension
- loose teeth
- thirst
- impotency
- premature ageing
- emaciation
- debility
- constipation
- senility
- rheumatism
- nervous exhaustion
- memory loss
- neurodegenerative disorders
- spermatorrhoea

***Rauwolfia serpentina* (Sarpagandha)**

(Picture is obtained with the courtesy of google net site)

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Scientific classification

Kingdom:	Plantae
Division:	Magnoliophta
Class:	Manoliopsida
Order:	Gentianales
Family:	Apocynaceae
Genus:	Rauwolfia
Species:	serpentina

Binomial name-Rauvolfia sepentina

Rauvolfia serpentina, or 'snakeroot' or 'sarpagandha' is a species of flowing plant in the family Apocynaceae.

Medicinal uses

It is one of the 50 fundamental herbs used in traditional Chinese medicine, where it has the name *shegen mu oryindu shemu.*

Rauwolfia serpentina contains a number of bioactive chemicals, including yohimbine, reserpine, ajmaline, deserpidine, rescinnamine, serpentine.

The extract of the plant has also been used for millennia in India-Alexander the Great administered this plant to cure his general Ptolemy of a poisoned arrow. It was reported that Mahatma Gandhi took it as a tranquilizer during his lifetime. A compound which it contains called reserpine, is used to treat high blood pressure and mental disorders including schizophrenia, and was particularly popular for that purpose in the West from 1954 to 1957.

It has been used for millennia as an antidote against bites of venomous reptiles.

Turmeric

(picture is obtained with the courtesy of google net site)

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Scientific classification

Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Monocots
(unranked):	Commelinids
Order:	Zingiberales
Family:	Zingiberaceae
Genus:	Curcuma
Species:	longa

Binomial name-*Curcuma longa*

Turmeric *(Curcuma longa)* is a rhizomatous herbaceous perennial plant of the ginger family, Zingiberaceae. It is native to tropical South Asia and needs temperature between 20^0C and 30 ^{0}C and a considerable amount of annual rainfall to thrive. Plants are gathered annually for their rhizomes and propagated from some of those rhizomes in the following season.

When not used fresh, the rhizomes are boiled for several hours and then dried in hot ovens, after which they are ground into a deep orange-yellow powder commonly used as a spice in curries and other South Asian and Middle Eastern cuisine, for dyeing, and to impart color to mustard condiments. Its active ingredient is curcumin and it has a distinctly earthy, slightly bitter, slightly hot peppery flavor and a mustardy smell.

In medieval Europe, turmeric became known as Indian saffron, since it was widely used as an alternative to the far more expensive saffron spice.

Erode, a city in the south Indian state of Tamil Nadu, is the world's largest producer and most important trading center of turmeric in Asia. For these reasons, erode in history is also known as 'Yellow City' or 'Turmeric City'. Sangli, a town in the southern part of the Indian western state of Maharashtra, is the second largest and most important trading center for turmeric in Asia. Turmeric is commonly called haridra or haldi in India. Turmeric is known as 'Manjal' and turmeric powder is known as 'Manjal Thool' in Tamil language and in Tamil Nadu, India.

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USES

Turmeric is currently being investigated for possible benefits in Alzheimer's disease, cancer, arthritis, and other clinical disorders.

In the latter half of the 20th century, curcumin was identified as responsible for most of the biological effects of turmeric. According to a 2005 article in the *Wall Street Journal,* research activity into curcumin and turmeric is increasing, with supplement sales increased 35% from 2004. The U.S. National Institutes of Health currently has registered 19 clinical trials underway to study use of dietary turmeric and curcumin for a variety of clinical disorders (dated February 2010)

Mentha arvensis (picture is obtained with the courtesy of google net site)

Scientific classification

Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Asterids
Order:	Lamiales
Family:	Lamiaceae
Genus:	Mentha
Species:	piperita

Binomial name-Mentha arvensis

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Mentha arvensis (Field Mint, Wild Mint or Corn Mint) is species of mint with a circumboreal distribution. It is native to the temperate regions of Europe and western and central Asia, east to the Himalaya and eastern Siberia, and North America.

It is an herbaceous perennial plant growing to 10-60 cm (rarely to 100 cm) tall. The leaves are in opposite pairs, simple, 2-6.5 cm long and 1-2 cm broad, hairy, and with a coarsely serrated margin. The flowers are pale purple (occasionally white or pink), in clusters on the stem, each flower 3-4 mm long.

There are six subspecies.

- *Mentha arvensis* subsp. *arvensis.*
- *Mentha arvensis* subsp. *agrestis* (Sole) Briq.
- *Mentha arvensis* subsp. *austriaca* (Jacq.) Briq.
- *Mentha arvensis* subsp. *lapponica* (Wahlenb.) Neuman.
- *Mentha arvensis* subsp. *palustris* (Moench.) Neumann.
- *Mentha arvensis* subsp. *parietariifolia* (Becker) Briq.

The related species *Mentha Canadensis* is also included in *Mentha arvensis* by some authors as two varieties, *Mentha arvensis* var. *glabrata* Fernald (in reference to North American plants) and *M. arvensis var. piperascens* Malinv. ex L.H. Bailey (in reference to eastern Asian plants).

Acacia nilotica (picture is obtained with the courtesy of google net site)

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Scientific classification

Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Rosids
Order:	Fabales
Family:	Fabaceae
Genus:	Acacia
Species:	nilotica

Binomial name-*Acacia nilotica*

Synonyms-*Acacia arabica*

Acacia nilotica (gum arabic tree, babul, Egyptian thorn, sant tree, prickly acacia, called thorn mimosa in Australia, lekkerruikpeul or scented thorn in South Africa) is a species of *Acacia* (wattle) native to Africa and the Indian subcontinent. It is also currently an invasive species of significant concern in Australia. For the ongoing reclassification of this and other species historically classified under genus *Acacia.*

Uses

In part of its range small stock consume the pods and leaves, but elsewhere it is also very popular with cattle. Pods are used as a supplement to poultry rations in India. Dried pods are particularly sought out by animals on rangelands. In India branches are commonly lopped for fodder. Pods are best fed dry as a supplement, not as a green fodder.

Acacia nilotica makes a good protective hedge because of its thorns.

Acacia nilotica may also be used for medicinal purposes, as a demulcent or for conditions such as gonorrhea, leucorrhoea, diarrhea, dysentery or diabetes. It is styptic and astringent. In Siddha medicine, the gum is used to consolidate otherwise watery semen.

Conclusion

Among ancient civilization, India has been known to be rich repository of medicinal plants.The forest in India is the principal repository of the large number of medicinal and aromatic plants, which are largely collected as raw materials for manufacture of drugs and perfumery products.

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About 8,000 herbal remedies have been codified in Ayurveda. The Rigveda (5000 BC) has recorded 67 medicinal plants, Yajurveda 81 species, Artharvaveda (4500-2500 BC) 290 species, Charak Samhita (700 BC) and Sushrut Samhita (200 BC) had described properties and uses of 1100 and 1270 species respectively, in compounding of the drugs and these are still used in the classical formulations, in the Ayurvedic system of medicine. Unfortunately, much of the ancient knowledge and many valuable plants are being lost at an alarming rate. With the rapid depletion of the forests, impairing the availability of raw drugs, Ayurveda like other systems of herbal medicines has reached a very critical phase. Phytomedicines are also being used increasingly in Western Europe. Recently the US Government has established the "Office of Alternative Medicine" at the National Institute of Health at Bethesda and its support to alternative medicine includes basic and applied research in traditional systems of medicines such as Chinese, Ayurvedic etc. with a view to assess the possible integration of effective treatments with modern medicines. The development of systematic pharmacopoeias dates back to 3000 BC, when the Chinese were already using over 350 herbal remedies. Ayurveda, a system of herbal medicine in India, Sri Lanka and South-East Asia has more than 8000 plant remedies and using around 35,000-70,000 plants species. China has demonstrated the best use of traditional medicine in providing the health care. China has pharmacologically validated and improved many traditional herbal medicines and eventually integrated them in formal health care system.

Green plants synthesise and preserve a variety of biochemical products, many of which are extractable and used as chemical feed stocks or as raw material for various scientific investigation. Many secondary metabolites of the plant are commercially important and find use in a number of pharmaceutical compounds. However, a sustained supply of the source material often becomes difficult due to the factors like environmental changes, cultural practices, diverse geographical distribution, labour cost, selection of the superior plant stock and over exploitation by pharmaceutical industry.

Traditional medicines provide an important healthcare service whether people have physical or financial access to allopathic medicines. Hence herbal medicines growing faster than any alternative therapy. The total commercial value of the ethnobotanical market cannot be ignored. Among ancient civilization herbal remedies have been evolved in Ayurved. Phytomedicines

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are evolved in the form of alternative medicines which include basic and applied research in traditional system of medicines. Hence traditional medicines got victory in the form of healthcare.

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