

Plants of Ethnobotanical significance in Jaunpur and Varanasi Regions

Jahnvi Srivastava, Avshesh Kumar and Rajkumar Yadav

Department of Botany, T.D.P.G. College, Jaunpur - 222002 (India)
Email-cs.singh25@gmail.com

Abstract

Folk medicine has long employed medicinal plants as natural cures with therapeutic benefits include lowering the risk of cancer, preventing heart disease, and treating inflammatory conditions. Additionally, because medicinal plants contain active chemical compounds that act as agents for medication creation, the pharmaceutical industry uses them. They are also useful as additives in the food and cosmetics industries because of their antibacterial and antioxidant properties, which have preservation benefits. Commonly used medicinal plants having antioxidant action are found throughout the world and belong to a number of families, particularly the Lamiaceae, Apiaceae, and Zingiberaceae (ginger, turmeric). The plant, its variety, growing conditions, climatic and seasonal fluctuations, geographical growth zones, degree of maturity, cultivation methods, and several other elements, including postharvest handling and processing, all affect the antioxidant qualities of medicinal plants. Furthermore, the antioxidant action is correlated with the concentration and makeup of current antioxidants, including phenolic compounds. The extraction process, conditions, solvent, and specific test methodology are crucial for determining antioxidant capacity appropriately.

Key words : Medicinal Plants, Antioxidants, Ethnobotany.

For many indigenous people, plants are an essential element of life. In addition to providing food, fire, fodder, and other resources, plants are used as herbal medicines to treat a variety of illnesses in parallel with human civilization. The study of plants utilised by traditional cultures and the pharmacological underpinnings of medicinal plants that are significant to their culture are the focus of

ethnobotany. The father of ethnobotany is Richard Evans Schultes.

Although various societies across the world have developed various methods of treating ailments, they are all mostly based on plants. It's possible that nearly every ancient society created its own medical system. The ancient Indian subcontinent gave rise to

Ayurveda, which is regarded as the father of medicine. The Rigveda, Yajurveda, and Atharvaveda include the oldest references to medicinal plants, with the Charak Samhita and Shushruta Samhita serving as traditional databases. The data that ethnobotanists gather could then serve as the foundation for creating commercially viable plant products like medications and nutritional aids. I have selected plants from the districts of Jaunpur and Varanasi to discuss the significance of ethnopharmacology, a significant subfield of ethnobotany that is the scientific study of physiologically active substances used in traditional medicine. The northeastern region of Varanasi division is home to the district of Jaunpur. It is between 261 and 290 feet above sea level.

The city of Jaunpur, which is located on the banks of the Gomti River, serves as the district headquarters. It is situated 220 kilometers southeast of Lucknow, the state capital. Its principal perennial rivers are the Gomti and Sai. In addition to these, the minor rivers are Varuna, Basuhi, and Pili. The district is divided into four equal landmasses by the Gomti and Basuhi. Floods frequently affect the district. The climate of Jaunpur district is similar to that of the central Highlands and Northern Plain, which includes the Aravalli range, hot semi-arid ecoregion 4.3, and hot dry ecoregion 9.2. Between roughly 4°C (39°F) to 44°C (111°F), the temperature fluctuates. Rainfall averages 1.098 millimeters (43.2 in) each year. The third week of June through the first week of October is when the monsoon season occurs. There are about 46 rainy days in a year. The district's terrain consists of narrow river valleys and an undulating flat plain. With a mean bulk density of 1.3 Mg m³

and a loamy texture, the soil in the Jaunpur district has strong physical characteristics. Salt ranged from neutral to slightly alkaline in BpH. richer in Potassium and Phosphorus but lower in organic stuff. The district headquarters are located in the holy city of Varanasi, which is also in the Indian state of Uttar Pradesh. The division, which consists of four districts, has its headquarters at Varanasi district. The district is traversed by the Ganga River, and the average temperature stays at 25.6°C, with variations between 6.4°C and 41.7°C. The average humidity ranges from 137 to 99.47, staying at about 67.27. The range of the station pressure is 993 hpa to 975 hpa. The nights are cool, and occasionally very cold, during the winter months of mid-November to late February or early March. The temperature fell to 1°C (34°F) in January 1990 and to 2°C (35°F) in January 2013. At night and in the early morning, fog also forms.

Some plants of Jaunpur and their medicinal uses :

Phyllanthus emblica L.

Cultivation of Amla is very common in India, particularly in state of UP, where it is cultivated in various districts including Jaunpur. India ranks first in production of Amla. Amla belongs to new genus *Emblica* of the family "Euphorbiaceae, and order euphorbiales. There are many medicinal virtues attributed to amla. A tablespoon full of fresh amla juice and honey mixed together forms a valuable medicine for treatment of TB, asthma bronchitis. It is also beneficial for the treatment of conjunctivitis and glaucoma. It reduces intraocular tension in a remarkable manner. A spoonful of amla juice mixed with a of fresh bitter guard juice, taken daily cup of for

two months stimulate Islets of Langerhans reduce blood sugar. Useful in treatment of rheumatism. *Amla* considered an effective remedy for heart disease. *Amla* is accepted hair tonic in traditional recipe for enriching hair growth and hair pigmentation.

Nelumbo nucifera Gaertn :

Nelumbo is also a widely distributed plant of Jaipur. Different parts of plant have been used for different purpose; Lotus leaves are used against diarrhea, hemoptysis, haematemesis, hematuria, hemorrhoids, and leprosy. Leaves are also useful in inflammation, body heat balance, weakness. Lotus liquor prepared from flower and leaves has been confirmed to possess antioxidant activity. Rhizomes extract have revealed diuretics, psychopharmacological, anti-diabetic, anti-obesity, hypo-glycemic, antipyretic. Lotus embryo have properties to cure skin diseases, and also act as antidote to poison. Flowers have cooling effect and are used in the treatment of the cholera, fever, diarrhea liver related issue. Honey derived from lobes is effective to were eye infection.

Aegle marmelos (L.) Correa :

Aegle marmelos is a deciduous shrub or small to medium sized tree, up to 13 m (43 feet) tall with slender "drooping branches and rather open irregular crowns. Analgesic anti-inflammatory, & anti pyretic activity; Ali *et al.*¹ presented anti-inflammatory antipyretic & analgesic properties of serial extract of leaves of *Aegle marmelos*, and presented that most of the extract caused a significant inhibition of carrageenan- induced paw edema and cotton-pellet granuloma in rats. A significant

reduction in hyperpyrexia in rats was also produced by most of the extracts. Panda S, and Kar A. (2006); isolated scopoletin (7-hydroxy-6-methoxy coumarin) from *Aegle marmelos* leaves and evaluate for its potential to regulate hyperthyroidism. It was observed that scopoletin (at 1.00 mg/kg for 7 days) to levo - thyroxine treated animals, decreased serum thyroid hormone level. *A. marmelos* has been used to control diabetes in traditional medicine system.

Ocimum sanctum L.

Commonly known as Tulsi, holy Basil or Vishnupriya, plant is an erect, much branched, pungent, odoured perennial herb with stems and branches sub quadrangular. Eugene (1-hydroxy-2-methoxy-4-allylbenzene) the active constituent present in *Ocimum sanctum* L. has been found to be largely responsible for therapeutic potential of Tulsi. In Ayurveda Tulsi (*Ocimum sanctum* L.) has been well documented for its therapeutic potentials and described as Dashemani shwasarni (anti-asthmatic) and anti-kaphic drugs (Kaphagna). Tulsi is also used in immunomodulatory activity, Cough and Sore throat, Anti- The pyretic activity.

Allium Sativum L.

Herb growing from a strongly aromatic rounded bulb composed of around 10 to 20 cloves covered in a papery coat. Hypertension (systolic blood pressure (SBP) > 140 mmHg; diastolic blood pressure > 90 mm Hg) is known risk factor for cardiovascular morbidity and mortality. Garlic has played important dietary as well as medicinal role in history. Blood pressure reducing properties of

garlic have been linked to its hydrogen sulphide production and allicin content - liberated from allin and the enzyme alliinase which has angiotensin II inhibiting and vasodilating effects.

Anti coagulant and Fibrinolytic Potential:

Over the century garlic and species of genus *allium* have enjoyed an important reputation as prophylactic and therapeutic agent. Song *et al.*, (1960) have isolated blood anticoagulant substance from garlic a 1/2 mg of garlic extract completely inhibited one ml of blood from coagulating.

Acacia nilotica (L.) Willd. ex Delile :

Fabaceae or leguminaceae commonly known as legume, pea or bean family, are large and agriculture important family of flowering plants. It includes trees, shrub and perennial or annual herbaceous plants, which are easily recognized by their fruit (legume) and their compound, stipulate leaves. Family is widely distributed and is third-largest land plant family in number of species, behind only Orchidaceae and Asteraceae, with about 765 genera and nearly 20,000 known species. *Acacia nilotica* is of multipurpose, medicinal use. Every part of the plant has different use, discussed below; Root- Used against cancers and/or tumors (of ear, eye, testicles), tuberculosis and indurations of liver and spleen. Leaf- Chemopreventive, antimutagenic, anti-bacterial, anticancer, anti microbial activity. Tender leaves are used to treat diarrhea, dressing of ulcers, also useful in Alzheimer's. Gum- Astringent, emollient, liver tonic, anti-pyretic and anti asthmatic. Stem bark- useful in skin disease, burning sensation, Toothache, leprosy.. hemorrhage. It possesses

anti- bacterial, anti-oxidant, anti- mutagenic, diuretic qualities." Anti-oxidant Activity; Kalainani *et al.*,⁶ detected an active antioxidant compound (ethyl gallate) - from the leaves ethanol extract of *Acacia nilotica*.

Asparagus racemosus Willd.:

A. racemosus has been widely used in folk. medicine and is today a highly commercial species. Patent uterine tonic, Celanese, nourishes and strengthens the female reproductive system³, Amenorrhea, Dysmenorrhea, dysfunctional uterine bleeding¹⁵. Menopause: pelvic inflammatory disease like endometritis⁴ It also supports deeper inside tissue & builds blood and helps to remove infertility, prepares the womb for conception, prevents miscarriage, acts as post-partum tonic, helps to increase lactation, normalizes uterus, balances the hormonal level⁸. Also useful in arthritis, diarrhea, dysentery². Edema, rheumatism, chronic and common fevers, cooling tonic^{1,8}. *A. racemosus* as a galactagogue; galactopoietic effect of *satawar* has been reported that the supplementation of fresh root of shatavar at the rate of 1/2 kg per day at time of milking⁹. *A. racemosus* and digestive system, It strengthens the digestive system it prevents from many digestive system related disorders. *A. racemosus* is one of the *satavira* drug and has been cited in treatment of peptic ulcer disease by Chakradutta, a connotation on Charaka and *Sushruta samhita*⁷. *A. racemosus* and immune system; It is a strong immunomodulator and it stimulates the macrophage and neutrophils¹⁷.

Datura stramonium L.

Anti-asthmatic activity; *Datura*

stramonium with respect to asthma treatment and possible effects on prenatal development when a mother will use this plant for asthma treatment then the fetus will be exposed to it. Anti-rheumatic activity; The infusion prepared from stem, branches and leaves exhibits anti-rheumatic potential. *D. stramonium* extracts were researched for its potential pharmacological profile^{11,13} and Swathi *et al.*¹⁶ investigated the potential of *D. stramonium* ethanolic extracts as larvicidal and mosquito repellent agent. *D. stramonium* leaf extracts, combined with extracts of other plants such as *Azadirachta indica* A. Juss. and *Coriandrum sativum* L. were screened *in vivo* for their anti-inflammatory potential. Combined methanoplic *D. stramonium* and *D. innoxia* extract, displayed anti bacterial activity against Gram +ve bacteria in dose dependent manner. Organo phosphate poisoning; *D. stramonium* contains atropine and other ant cholinergic compounds; it is useful, remedy for central cholinergic symptom of organophosphate poisoning. Bania *et al.* determined the beneficial effect of *Datura* seed extracts following of poisoning. Acetone extracts *D. stramonium* plant parts were listed against *Vibrio cholerae* by Sharma and Patel¹². It was recorded to inhibit growth.

Since medicinal plants have long been gathered, used, and managed using regional knowledge and practices, they are inextricably linked to local livelihoods. Because traditional remedies are knowledge-based and empirical, frequently passed down through culture, and crucial to pharmacology and local livelihoods, it is imperative that they be managed. However, as a result of shifting attitudes, acculturation, social changes, and lifestyles, traditional therapies are currently losing ground.

References :

1. Ali Atif, Naveed Akhtar, Barkat Ali Khan, Md. Shoiab Khan, Akhtar Rasul, Tariq Md. and Liaqat Ali. (2005). *Pakistan Journal of Medicinal Plants & Research* 6(9):
2. Chaudhary G.N. and R.H. Singh (1965). *Indian J. Med. Res.* 53(1): 71-80.
3. Frawley D. (1989) *Ayurvedic Healing: A Comprehensive Guide*. Salt Lake City, UT: Passage Press : 200-211 35.
4. Goel, R.K. *et al.*, (2006). *Indian J. Exp. Biol.* 44: 570-573.
5. Hemprabha *et al.* (2001). *Indian J Clinical Practice* 12(2): 31-34.
6. Kalaivani T, Rajasekaran C, Suthindhiran K, Mathew L. Free Radical Scavenging, Cytotoxic and Hemolytic Activities from Leaves of *Acacia nilotica* (L.) Willd. Ex. Delile subsp. *indica* (Benth.) Brenan. *Evidence-based Complementary and Alternative Medicine*, 2011, 2011: 274741. doi:10.1093/ecam/neq060
7. Muralidhar T.S. *et al.* (1993). *J. Biol. Chem. Res.* 12: 151-6.
8. Nadkarni A.K. (1976) *Indian Materia Medica*. Vol. 1. Bombay, India: Popular Prakashan Pvt. Ltd: 153-155.
9. Patel A.B. and U.K. Kanitkar (1969). *Indian Vet. J.* 46(8): 718-721.
10. Rajbir Singh, Bikram Singh, Sukhpreet Singh, Neeraj Kumar, Subodh Kumar, Saroj Arora, Anti-free radical activities of kaempferol isolated from *Acacia nilotica* (L.) Willd. Ex. Del., *Toxicology in Vitro*, 2008, 22 (8): 1965-1970.
11. Rasila Devi M, Bawari M, Paul S, Sharma G. Neurotoxic and medicinal properties of *Datura stramonium* L– review, *Assam university Journal of science and technology*. 2011; 7: 139-144.

12. Sharma, A., V.K. Patel and AN. Chaturvedi (2009). *Indian J Pharmacol.* 41(3): 129-133.
13. Sharma B, K Srivastava, N Verma, R Niwas, and M. Singh. Antifungal potential of leaf extract of *Datura stramonium* L, against some important plant pathogenic fungi *Acta Biologica Indica*. 2014a; 3: 659-662.
14. Song CS, JH Kim, ES Kim, and PH Lee *et al.* (1963). A blood anticoagulant substance from garlic (*allium sativum*) I. Its preparation and studies on its anticoagulant effect. *Yonsei medical journal* 4: 17-20.
15. Swarup A. and K. Umadevi (1998). *Obs. & Gynae. Today (III)* 6: 369-672.
16. Swathi S, G Murugananthan, S Ghosh, and A. Pradeep (2012). *International Journal of pharmaceutical and phytochemistry research.* 4: 25-2.
17. Thatte U.M. and S.A. Dahanukar (1989). *Phytother Res.* 3: 43-9.
18. Tirtha S.S. (1998) *The Ayurvedic Encyclopedia*. Bayville, NY: Ayurvedic Holistic Center Press: 102-103 43.9.