

# **SRNK GOVT. DEGREE COLLEGE, BANSWADA**

**KAMAREDDY (DIST.), TELANGANA.  
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NAAC ACCREDITED WITH 'B' GRADE**



## **JIGNASA**

**STUDENT STUDY PROJECT 2019-2020**

**DEPARTEMNT OF BOTANY**

## **TITLE: MEDICIAL PLANTS: THEIR ROLE IN HEALTH AND BIODIVERSITY**

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## **INTRODUCTION :**

Medicinal plants are useful to keep on hand to treat common ailments. You can reach for certain medical plants to relieve headaches, tummy trouble and even irritation from bug bites. Plants can be consumed in teas, used as garnish, applied topically as essential oil or consumed as a pill.

It's important to remember that you should always double check with your doctor before consuming or using anything new for your body. If you choose to grow some of these plants, remember to take proper care according to the plant's care guidelines and refrain from using any pesticides or other harmful chemicals on your plants. You don't want any of those chemicals in or on your body!

To help you decide what plants are best for you, we rounded up our top medicinal plants, their notable health benefits and how to use them.

Medicinal plants, also called medicinal herbs, have been discovered and used in traditional medicine practices since prehistoric times. Plants synthesise hundreds of chemical compounds for functions including defence against insects, fungi, diseases, and herbivorous mammals. Numerous phytochemicals with potential or established biological activity have been identified. However, since a single plant contains widely diverse phytochemicals, the effects of using a whole plant as medicine are uncertain. Further, the phytochemical content and pharmacological actions, if any, of many plants having medicinal potential remain unassessed by rigorous scientific research to define efficacy and safety. The earliest historical records of herbs are found from the Sumerian civilisation, where hundreds of medicinal plants including opium are listed on clay tablets. The Ebers Papyrus from ancient Egypt, c. 1550 BC, describes over 850 plant medicines. The Greek physician Dioscorides, who worked in the Roman army, documented over 1000 recipes for medicines using over 600 medicinal plants in *De materia medica*, c. 60 AD; this formed the basis of pharmacopoeias for some 1500 years. Drug research makes use of ethnobotany to search for pharmacologically active substances in nature, and has in this way discovered hundreds of useful compounds. These include the common drugs aspirin, digoxin, quinine, and opium. The compounds found in plants are of many kinds, but most are in four major biochemical classes: alkaloids, glycosides, polyphenols, and terpenes.

## **HYPOTHESIS :**

Plants are being the important continuous source of pharmacologically active compounds, with many blockbuster drugs being derived directly or indirectly from plants. Despite the current occupation with synthetic chemistry as a vehicle to discover and manufacture drugs, the contribution of plants to disease treatment and prevention is still enormous. However several challenges have been associated with supply of biologically active pharmaceuticals from natural sources. Alternative avenues for plant products have gained prominence during the past few years and plant biotechnology has a major role to play in plant based industries. Recently the production of secondary metabolites using plant cells has been the subject of extended research. Plant cell culture can be obtained from any plant species. In such culture, each cell has all genes necessary for all the functions of a plant including secondary metabolism. Different strategies can also be applied for the improvement of secondary metabolite production. A recent development to overcome the difficulties arising with cell

suspension cultures is the genetic transformation of plants with *Agrobacterium rhizogenes*. Hairy roots have been found to be suitable for the production of secondary metabolites because of their stable and high productivity in hormone-free culture conditions. Plant transformed technology has now reached a platform of commercial reality.

## **DATA ANALYSIS :**

his study presents a new approach to analyze data correlating total antioxidant activity and total phenolic compounds in foods. The correlation of both variables is a common practice found in the literature. The various data (local name, medicinal uses, used parts of plant, method of preparation and In our analysis In addition direct *plant* field observations were employed to collect the *data* on the knowledge and management of *medicinal plants* with the help of local healers known as 'Naths'. Maximum numbers of *medicinal plants* used by the healers were collected from Javvadhuhills and in its nearby villages.

## **MEDICINAL PLANTS AND THEIR USES :**

### **OCIMUM SANCTUM**

In traditional systems of medicine, different parts (leaves, stem, flower, root, seeds and even whole plant) of *Ocimum sanctum* Linn (known as Tulsi in Hindi), a small herb seen throughout India, have been recommended for the treatment of bronchitis, bronchial asthma, malaria, diarrhea, dysentery, skin diseases, ...



Take the decoction of leaves along with black salt- Prem Prakash Kumawat, Nagor, Rajasthan

## **Mouth ulcer**

Mix the juice of tulsi leaves and lemon and apply on the ulcers- Rahul Bharti, Hazaribag, Jharkhand

## **Diabetes**

Make powder from equal amount of leaves of tulsi, bel and jamun. Take a spoonful orally along with cold water- Birendra Singh Chowan, Jaipur, Rajasthan

## **Itching**

Apply the leaf paste topically- Kundan Kumar Singh, Gopalganj, Bihar

## **BASIL**

Basil (*ocimum basilicum*) is a common herb used to garnish salads, pasta and many other meals to add delicious flavor. Thanks to the vitamins and minerals in basil, such as vitamin K and iron, this herb is helpful for combating common ailments. For example, the manganese in basil helps metabolize different compounds in your body. Holy basil, commonly referred to as tulsi, is a specific species of basil that originates from India. It's considered a sacred plant that is used in teas, ointments and more, to help treat a variety of ailments like fevers and diabetes. This species has a much stronger taste than common basil!

### **Basil health benefits:**

- Reduces stress
- Strong antibacterial properties
- Rich source of antioxidants
- Prevents some harmful effects of aging
- Reduces inflammation and swelling
- Strengthens bones and liver
- Boosts immunity
- Boosts metabolism
- Improves digestion



## CATNIP

Catnip (*nepeta cataria*) is a fun plant for cats. Most cats are attracted to the plant and will roll around near it since its aroma acts as a stimulant. These medicinal plants also act as a sedative for cats if consumed. For humans, on the other hand, it is normally used as a stress reliever, sleep aid and a solution for skin issues. The majority of its health benefits come from the presence of nepetalactone, thymol and other compounds that make this plant great for you and your furry friend.

### Catnip health benefits:

- Repels bugs and relieves irritation from bug bites
- Calms restlessness, anxiety and stress
- Relieves stomach discomfort
- Accelerates recovery from colds and fevers



## CAYENNE PEPPER

Cayenne pepper (*capsicum annuum*) adds a spicy kick to any meal or drink and is a popular detoxifier for many people. Capsaicin is the compound responsible for cayenne's spicy nature, but it's also responsible for some of its health benefits. Some of these benefits include pain relief and lower cholesterol.

### Cayenne pepper health benefits:

- Detoxifies the body
- Boosts metabolism
- Eases an upset stomach and helps digestion

- Improves circulation
- Relieves pain



## **GARLIC**

Garlic (*allium sativum*) helps keep away vampires and unwanted diseases! This super plant is great for fighting infections, aiding with cholesterol management and much more. Eating garlic on a regular basis is good for your overall health and easy to incorporate into a wide array of dishes. Raw garlic is the most potent, so try eating it uncooked for the most health benefit.

### **Garlic health benefits:**

- Helps prevent heart disease
- Lowers cholesterol and blood pressure
- Prevents dementia, Alzheimer's and similar degenerative diseases
- Improves digestive health .



## TURMERIC

Turmeric contains curcumin, a substance with powerful anti-inflammatory and antioxidant properties. Most studies used turmeric extracts that are standardized to include large amounts of curcumin.

### health benefits

- Most of the studies on this herb are using turmeric extracts that contain mostly curcumin itself, with dosages usually exceeding 1 gram per day.
- It would be very difficult to reach these levels just using the turmeric spice in your foods.
- Therefore, if you want to experience the full effects, you need to take a supplement that contains significant amounts of curcumin.
- In that way, curcumin delivers a one-two punch against free radicals. It blocks them directly, then stimulates your body's own antioxidant defenses.



## LEMON BALM

Lemon balm (*melissa officinalis*) is a longstanding medicinal plant used to help relieve stress and ward off insects! An intense amount of stress can cause complications for many functions of the body, so minimal stress is ideal for a healthy functioning body. This lemony plant is delicious and easily used in several dishes like teas, ice cream and more. Many people consume lemon balm tea to help relieve anxiety, stress and even to calm restless kids.

### Lemon balm benefits:

- Calms restlessness, anxiety and stress

- Reduces inflammation
- Treats cold sores
- Soothes menstrual cramps



## **NEEM**

**Neem** is a natural herb that comes from the **neem** tree, other names for which include *Azadirachta indica* and Indian lilac. The extract comes from the seeds of the tree and has many different traditional uses. **Neem** is known for its pesticidal and insecticidal properties, but people also use it in hair and dental products.



## **BENEFITS FROM NEEM :**

**Neem** leaf is used for leprosy, eye disorders, bloody nose, intestinal worms, stomach upset, loss of appetite, skin ulcers, diseases of the heart and blood vessels (cardiovascular disease),

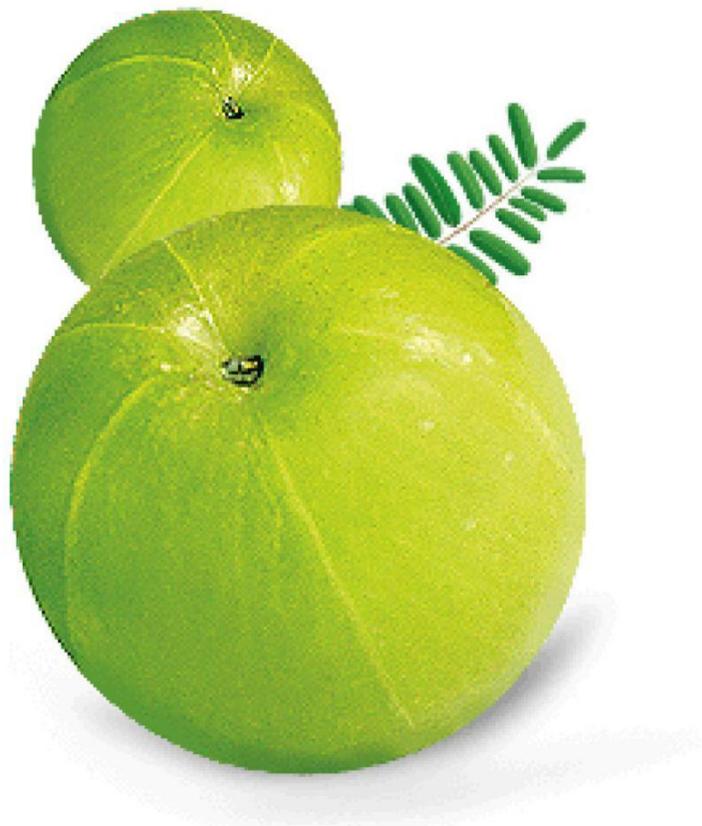
fever, diabetes, gum disease (gingivitis), and liver problems. The leaf is also used for birth control and to cause abortions.

## **AMLA :**

Phyllanthus emblica, also known as emblic, emblic myrobalan, myrobalan, Indian gooseberry, Malacca tree, or *amla* from Sanskrit amalaki is a deciduous tree of the family Phyllanthaceae. It has edible fruit, referred to by the same name. A nutrition-packed fruit, amla works brilliantly for most parts of the body This humble fruit, also known as the Indian gooseberry, is one of the most important foods in Ayurvedic medicine and is a storehouse of good health

### **HEALTH BENIFITS**

- 1.It helps fight the common cold. The vitamin C in amla is absorbed more easily by the body compared to store-bought supplements. ...
- 2.It improves eyesight. ...
- 3.It burns fat. ...
- 4.It builds immunity. ...
- 5.Amla beautifies hair. ...
- 6.It improves skin. ...
- 7.It helps manage chronic conditions. ...
- 8.It relieves pain.



## **AIMS AND OBJECTIVES :**

The main aim of Medicinal Plant Authority is the conservation, sustainable management and development of the medicinal plants in increasing awareness, promoting and engaging in related activities.

The main activity consists of implementation and monitoring the National Medicinal Plant Board (NMPB), Government of India, schemes through farmers and different institutions in the state.

1. Encourage and assist individuals, associations, group and institutions and affiliate with them in the promotion of conservation, utilization and development of medicinal plants .
2. Guiding, implementing and monitoring NMPB schemes and programmes taken up by Government departments, developmental organizations, agencies having access to land and infrastructure for raising, collection, storage, marketing and transportation of medicinal plants.
3. To set up database containing quality standards, safety, efficacy, Good Agriculture Practices, Good Collection Practices, Good Storage Practices and the uses of medicinal plants.
4. Promotion of *in-situ* and *ex-situ* conservation, utilization and development of medicinal plants.
5. Promotion of co-operative efforts among growers, collectors and traders and assist them to store, transport and market their medicinal plants or value added products effectively.
6. Promote research and development for domestication of wild medicinal plants, development of agro-techniques, value addition, post harvest management, storage and processing.
7. Encourage, protect and safeguard the patent rights and Intellectual Property Rights, local traditional knowledge of raising, collection and utilization of medicinal plants.

## **FINDINGS :**

Medicinal plants are considered as a rich resources of ingredients which can be used in drug development either pharmacopoeias, non- pharmacopoeias or synthetic drugs. A part from that, these plants play a critical role in the development of human cultures around the whole world. Moreover, some plants are considered as important source of nutrition and as a result of that they are recommended for their therapeutic values. Some of these plants include ginger, green tea, walnuts, aloe, pepper and turmeric etc. Some plants and their derivatives are considered as important source for active ingredients which are used in aspirin and toothpaste etc.

Apart from the medicinal uses, herbs are also used in natural dye, pest control, food, perfume, tea and so on. In many countries different kinds of medicinal plants/ herbs are used to keep

ants, flies, mice and flee away from homes and offices. Now a day medicinal herbs are important sources for pharmaceutical manufacturing.

## **REVIEW OF LITERATURE :**

Whole plant is used to cure bronchitis<sup>107</sup>; dried whole plant is used as tonic<sup>81</sup>; and the plant is used to combat diabetes<sup>108</sup>. 'Diakof'<sup>11</sup>, a sugar-free cough linctus, with tulsi as an ingredient, is beneficial for both productive and dry cough. 'Tulsi churna'<sup>109</sup>, a natural ayurvedic product, provides antioxidants and is used to improve digestion and general health. More than fifty patents were found on its medicinal applications such as for treating cancer.

he primary aim of this study was to do a literature review on essential characteristics of medicinal plants which are being used for the management of snake bites in Traditional Medicine. Phytochemicals such as flavonoids saponin were highly found in these medicinal plants.

## **METHODOLOGY :**

Methodologies should present a new experimental or computational method, test or procedure. The main criteria for a Methodology paper is that it should

- (1) describe a significant advance on what has been previously available,
- (2) be of potential interest to a broad spectrum of plant research scientists and
- (3) that the methodology should be properly validated.

Plant Methods strongly encourages that all datasets on which the conclusions of the paper rely should be available to readers. We encourage authors to ensure that their datasets are either deposited in publicly available repositories (where available and appropriate) or presented in the main manuscript or additional supporting files whenever possible. Please see Springer Nature's information. Where a widely established research community expectation for data archiving in public repositories exists, submission to a community-endorsed, public repository is mandatory.

## **SUGGESTIONS :**

Medicinal plants used in Indian system of medicine from Rajasthan state have been surveyed and categorised systematically. The paper deals with 205 medicinal plants, thoroughly indexed along with their important traditional application for the cure of various ailments

A list of 136 plants used for medicinal purposes by the Mapuche Amerindians of Chile has been compiled. This is the first such list in English and is important due to the disappearance of Mapuche culture with increasing urbanisation. Some introduced plants have been incorporated into the traditional medicine of the Mapuche since the advent of European settlers but there is also a wealth of information about the uses of many indigenous species.

Natural preparations have been used for thousands of ages for a variety of purposes including as medicines, poisons, and psychotropic drugs. The largest grouped of preparations from living organisms are medicines, and historically these have come from plants. Quinine and aspirin are two examples of medicines which were extracted originally from plants

## **CONCLUSION :**

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study to the field. Background The use of plants for healing by any cultural group is integrally related to local concepts of the nature of disease, the nature of plants, and the world view of the culture. The physical and chemical properties of the plants themselves also bear on their selection by people for medicines, as does the array of plants available for people to choose from. I examine use of medicinal plants from a "biobehavioral" perspective to illuminate cultural selection of plants used for medicine by the Gitksan of northwestern British Columbia, Canada. Methods Consultant consensus, "intercultural consensus", independent use of the same plants by other cultural groups, and phytochemistry and bioassay results from the literature, were employed in analysis of probable empirical efficacy of plant uses. Results 70% of 37 Gitksan medicinal plants were used similarly by other cultures where direct diffusion is not known to have occurred; eleven plants, including the eight most frequently mentioned medicinal plants, also show active phytochemicals or bioassays indicating probable physiologically based therapeutic effects. Conclusion Analysis of intercultural consensus revealed that the majority of cultures in the British Columbia region within the plant ranges use the same plants,

In conclusion we can surmise that in general the two major threats to medicinal plants are: first, the loss of habitat (through land use conversion, agricultural expansion and so on) which results in the loss of both known and unknown species; and second, the overexploitation of known species as a result in increased demand. Related to these two is the associated loss of indigenous knowledge and expertise.