



Medicinal plants diversity on Syed Ammal Arts and Science College Campus

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Abstract

The aim of the present study was to identify medicinal plants in our college campus. These medicines are safe and environment friendly. According to WHO about 80% of the world's population relies on traditional medicine for their primary health care problems. Medicinal plants play an important role in preventing and treating of human diseases. In my finding most of plants cure the various diseases like, diabetes, bone fractures, skin infection, ulcers, cancer, dysentery, snake and insect bite, cough, cold, fever, asthma, wound healing, kidney stones and cardiovascular disease etc. This study revealed most of the medicinal plants used by the various parts of the plant like fruits, seeds, leaves, stem and rhizome. Among them, 12 trees, 8 Shrubs, and 10 Herbs were recorded.

Keywords: Medicinal plants, human diseases, traditional medicine, health care

Introduction

Medicinal plants are used for different purposes and in diverse uses of human beings. Over 80% of the population in developing countries depends directly on plants for their medical requirements (WHO, 2002). The World Health Organization classifies all plants species that are used as medicine to treat and cure illnesses as medicinal plants. Since ancient times, plants have been used in medicine and are still used today (Grover *et al.*, 2002). Medicinal plants resources that are well-known for treating ailments like diabetes, bone fractures, skin infection, ulcers, Prevent cancer, snake and insect bite, cough, cold, fever, asthma, wound healing, kidney stones diarrhea, and other ailments. In India, of the 17,000 species of higher plants, 7500 are known for medicinal uses (Shiva, 1996) ^[31]. The Ayurveda, Siddha, Unani, Tibetan, Chinese and Naturopathy systems of health care are largely plant based and still play a major role in curing diseases in Asia. All these traditional medical systems have accumulated a great deal of knowledge on the various medicinal plant species. Ayurveda, the oldest medical system in Indian sub-continent, has alone reported approximately 2000 medicinal plant species, followed by Siddha and Unani. (Nadkarni and Nadkarni, 1908 ^[21]; Kala *et al.*, 2006) ^[15]. Traditional medicine on the other hand, because of its decentralized nature, is generally easily and quickly available (Elliot *et al.*, 1986) ^[7].

Medicinal plants play a role in first aid for health problems and are proven to be effective in curing various kinds of diseases, even diseases that are almost incurable even though they still have the opportunity to be cured using herbal ingredients (Rambe *et al.*, 2020) ^[26]. medicinal plants used by the various plants parts like root, stem, leaves, bark, rhizome, fruit and seed, which produces a definite curing physiological response in the treatment of various ailments in humans and other animals. In India, several medical systems have evolved and prominent among these systems are Ayurveda, Siddha and the Unani Systems of Medicine. In different civilizations the contribution of floral biodiversity to health care has been well documented (Posey, 1999) ^[23]. Because of the accelerated local, national

and international interest in recent years the demand for medicinal and aromatic plants has increased manifolds and pharmaceutical industry views plant wealth as a source of income. Due to easy availability, no side-effects, and sometimes only source of health care, the demand for medicinal plants is increasing in both developing and developed countries. Traditional medicines are usually cheaper than modern medicines, and probably the only natural remedies available and accessible in the remote rural communities in developing countries (Popovic *et al.*, 2016) ^[22].

Medicinal plants are the integral part of human life to fight against several diseases from ancient time. More than 80,000 plants are used as medicinal plant around the world and among these maximum numbers of plants are traditionally used from generation to generation. It means medicinal plants are the backbone of traditional or folkloric medicines. At present scenario, traditional medicinal plants are being given serious attention by mainstream medical science or healthcare treatment system. Huge number of populations of the under developed or developing countries are continuously using traditional medicines as a primary source of healing agents from several diseases. To treat various health ailments, these native medicinal plants are extensively used as the potent source of alternative medicines. In the primary healthcare system medicinal plants are the core component for human beings that depend upon the availability, acceptability, compatibility and affordability (Hossain *et al.*, 2014 ^[20] & Ghosh *et al.*, 2019) ^[11].

They serve as important therapeutic agents as well as important raw materials for the manufacture of traditional and modern medicines. It is estimated that more than 25% of all prescription drugs used in the industrialized countries contain active principles that are still extracted from plants including anticancer drugs (Farnsworth *et al.*, 1976 ^[8]; Rowinsky *et al.*, 1992 ^[29]; Cragg *et al.*, 1992) ^[4]. They constitute important items of drugs or therapeutic agents of various traditional systems of medicine, particularly of Unani, Ayurvedic and Homeopathic medicines. A number

of studies have shown in details that a good number of the medicinal plants used by the (Herbalists) have found support from modern scientific research when tested for relevant pharmacological activities (Rahmatullah *et al.*, 2009) [25]. Throughout human history, people have relied on natural products in general and the plants in particular, to promote and maintain good health and to fight sickness, pain, and disease. However, the past 200 years have witnessed not only an acceleration in the rate of extinction of plant and animal species, but also the erosion of traditional knowledge related to the medicinal properties and uses of plants and other natural products. However, now-a-days these traditional medicinal plants knowledge record and preserve is important for the future studied to developed new drugs. Along with this traditional knowledge conservation in documentation research is important part for future generation (Ramdas Karande *et al.*, 2021) [27].

Materials and methods

Ethno botanical survey

The practice of plant based medicinal system is widespread among the Syed Ammal Arts and Science College, Ramanathapuram district, and it is intensely rooted in their socioeconomic traditions. Though, the documentation of local medicinal practices is conspicuously missing for the region. Considering the immense cultural and ethno-linguistic diversity of the tribal people of the district, several field interviews in the form of semi structured questionnaire were designed to cover as in college campus as possible, in order to take full advantage of the diversity of knowledge and the plant species used in conventional therapy. Collected information is useful to curing several ailments on child health care by using different medicinal plants. Take several visits for ethnic places in different seasons when plants get flowering. Informants getting the information about local names, used plant parts, formulation and dosages were also documented. The aims of this investigation were systematically clarified to all the informants before the interview (Cunningham, 2001) [17].

Results and discussion



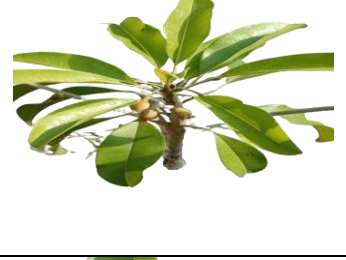




All the plants were able to cure different human ailments such as diabetes, cough, body ache, eye diseases, fever etc. Most of these plants are being used directly by the people or to prepare decoction or with slight preparation like applying the paste, boiling the useful parts of these plants, simply chewing leaves making extract of the plant and using it etc. The report is connected to the previous work (Rao *et al.*, 2002 [28]; Bhattacharya 2002 [2]; Heindrickson *et al* 2010 [13]; Qasim *et al.*, 2014) [24]. Present study also determines the habit wise distribution of medicinal plants used by the traditional practitioners. It revealed that tree species were dominated with 40%, followed by shrubs 27% and herbs 33%.









In majority of the cases, leaves were used as the medicinal source followed by stem bark, root and fruit. Investigation of traditional use of medicinal plants in Wayanad district (Shyma and Deviprasad, 2012) [32] and Jawalamukhi, Himachal Pradesh (Sharma *et al.*, 2014) [30] concluded that the traditional healer uses leaf part in most of the medicinal care. In the study, 30 medicinal plants encountered from the








different parts of the valley used by the local people and tribes in the daily ailments from various diseases. According to some studies, we found similarity with many species of plants which cure various types of ailments that were recognized by some other tribal community and Malayali tribes in Tamil Nadu. *Rhinacanthus nasuta* (Karuppusamy, 2007) [16]. *Azadirachta indica* (Durairaj *et al.*, 2012) [6], *Dracaena trifasciata*, *Alangium salvifolium* were reputed as a remedy for snakebite and we also get the similar result in our data collection.









The results of this study where leaves were the most used was in the line with findings of Indian (Tariq *et al.*, 2015) [33] and Brazilain (da Silva Migueis *et al.*, 2019) [5] studies. Although many studies reported leaves as most utilized plant parts (Malik *et al.*, 2018 [19]; Appiah *et al.*, 2019 [1]; Gumisiriza *et al.*, 2019) [12]. For medicinal purposes, others reported roots as the most utilized plant parts (30.3%) followed by leaves (28.4%) (Bussa *et al.*, 2019) [3]. The preparation methods are commonly produced in the form of decoction, followed by juices, infusions, and paste, with unstandardized dosages. As a result, it is critical to establish the safety, effectiveness, and preservation of these highly valuable plants, as well as critically examine the claimed therapeutic values of the reported plant species. The traditional medicinal plants used in the treatment of various ailments like headache, ulcer, hepatitis, jaundice, anemia, wound, sinus, asthma, piles, bleeding, haemorrhage, burns, injuries, tuberculosis, urinary tract infection, high blood pressure, leukaemia, diarrhea, skin disease, nerve disorders, leprosy, hypertension, nausea, menstrual disorders, liver disorders, abdominal pain, malaria, eye disease, arthritis, cancer, gonorrhoea, coronary artery diseases, bronchitis, bone fracture and cancer etc (Ghatapanadi *et al.*, 2011) [10]. However, the new coronavirus infection is more insidious than all previously encountered flu infections. It is known that the lungs are the organ most severely affected by COVID-19. (Zhu *et al.*, 2020) [35]. Thus, special attention was paid to medicinal plants that protect the lungs and support the immune system. In some remedies, two or more plants or plant parts are used jointly in the present report. This may be due to either synergistic or additive effects of the constituents that have been observed over the years (Igoli *et al.*, 2002) [14].

This study reported 204 species belonging to 160 genera and 76 families indicating the better medicinal plant diversity. This study reported 204 species belonging to 160 genera and 76 families indicating the better medicinal plant divers This study reported 30 species belonging to 2 genera and 23 families indicating the better medicinal plant diversity. Medicines were prepared in the form of powder, paste and juice. Internal consumption was done for body pain, menorrhoea, dysentery, Diabetes, snake bite, stomach pain, swelling, infertility, worm infection and external applications are done for apoplexy, beetle bite, leprosy, sprain and tumor. Most of the medicines were given orally which were also suggested by some other researchers in the world (Lee *et al.*, 2008) [18]. In our present research we mainly want to highlight the newly documented plants species of medicinal uses that were collected from Syed Ammal Arts and Science College, Ramanathapuram.

S. No	Scientific Name	Common Name	Medicinal uses	Picture
1.	<i>Ziziphus mauritiana</i>	Indian jujube	<ol style="list-style-type: none"> 1. Treatment of asthma, anxiety, ulcer and inflammation 2. Heartburn. 3. Nausea. 4. Diuretic 5. Fever. 	
2.	<i>Cocos nucifera</i>	Coconut tree	<ol style="list-style-type: none"> 1. Improve brain function. 2. Prevent heart disease. 3. Prevent kidney stones. 4. Helps with diabetes. 5. Treat stomachaches. 	
3.	<i>Manilkara zapota</i>	Sappota	<ol style="list-style-type: none"> 1. Rich in vitamins C and A. 2. Cancer benefits. 3. Control blood pressure. 4. Promote skin & bone health. 5. Prevent cancer. 	
4.	<i>Psidium guajava</i>	Guava	<ol style="list-style-type: none"> 1. Regulate blood sugar. 2. Reduce inflammation. 3. Immunity booster. 4. Diabetes. 5. Gastrointestinal diseases 	
5.	<i>Phyllanthus acidus</i>	Star gooseberry	<ol style="list-style-type: none"> 1. Regulate your immune system and cure cancer. 2. Treat asthma and piles. 3. Purifies the blood. 4. Diabetes. 5. Stomach ulcer. 	
6.	<i>Ficus religiosa</i>	Peepal tree (or) Bothi tree	<ol style="list-style-type: none"> 1. Treatment of gonorrhea & skin diseases. 2. Treats Ear infection. 3. Haematuria. 4. Effective for wounds & ulcer. 5. Gastric problems. 	
7.	<i>Pongamia pinnata</i>	Pongame tree	<ol style="list-style-type: none"> 1. Treatment of tumors, piles, and ulcers. 2. Wound treatment. 3. Skin diseases. 4. Rheumatism. 5. Diarrhea. 	

8.	<i>Citrus limettioides</i>	Sweet lime citrus	<ol style="list-style-type: none"> 1. Treat indigestion. 2. Urinary disorders. 3. Excellent source of vitamin C. 4. Relieves nausea and vomiting. 5. Kidney stones. 	
9.	<i>Melia dubia</i>	Malaivembu (or) Malabar neem	<ol style="list-style-type: none"> 1. Increase immunity. 2. Women's infertility. 3. Cure stomach pain. 4. Cure dengue fever. 5. Cancer. 	
10.	<i>Syzygium cumini</i>	Jamun (or) Indian blackberry	<ol style="list-style-type: none"> 1. Treats Diabetes. 2. Purifies blood. 3. Treats Bladder issues. 4. Dysentery and ulcer. 5. Diabetes. 6. Heart disorders. 	
11.	<i>Artocarpus heterophyllus</i>	Jackfruit	<ol style="list-style-type: none"> 1. Prevents Anemia. 2. Prevent cancer. 3. Regulates blood sugar. 4. Promotes cardiovascular health 5. Balance thyroid hormones. 	
12.	<i>Murraya koenigii</i>	Curry tree	<ol style="list-style-type: none"> 1. Beneficial for eyesight. 2. Improves blood circulation. 3. Stimulates hair growth. 4. Prevent Diabetes. 5. Skin injuries. 	
13.	<i>Aloe barbadensis miller</i>	Aloe vera	<ol style="list-style-type: none"> 1. Treat skin injuries. 2. Detoxify the body. 3. Treat Digestive issues. 4. Wound healing 5. Promote hair growth. 	
14.	<i>Musa acuminata</i>	Red banana	<ol style="list-style-type: none"> 1. Prevent kidney stone. 2. Improve bone health. 3. Promotes good vision. 4. Boosts fertility. 5. Regulate blood pressure. 	
15.	<i>Chamaecostus cuspidatus</i>	Insulin plant	<ol style="list-style-type: none"> 1. Insulin plant for diabetes. 2. Helps lower the blood glucose levels. 3. Cures Asthma. 4. Prevent Cancer. 5. Cure liver illness. 	

16.	<i>Coleus amboinicus</i>	Omavalli Or Mexican mint	<ol style="list-style-type: none"> 1. Treating cough and cold, fever. 2. Respiratory and skin ailments. 3. Helps in digestion 4. Epilepsy 5. Treating breast, prostate cancer. 	
17.	<i>Dracaena trifasciata</i>	Snake plant	<ol style="list-style-type: none"> 1. Effective against allergies. 2. Removing toxic pollutants. 3. Heal skin wounds. 4. Treat Snake and insect bites. 5. Reducing headaches. 	
18.	<i>Cissus quadrangularis</i>	Bone setter (or) Pirandai	<ol style="list-style-type: none"> 1. Heal bone fractures. 2. Diabetes. 3. High cholesterol 4. Relief from respiratory diseases. 5. Regulate menstruation. 	
19.	<i>Vitex agnus castus</i>	Chaste tree (or) Chasteberry	<ol style="list-style-type: none"> 1. Infertility. 2. Increase lactation. 3. Snake and spider antivenom. 4. Mastalgia. 5. Menstrual pain. 	
20.	<i>Acorus calamus</i>	Sweet flag	<ol style="list-style-type: none"> 1. Indigestion and stomach problems. 2. Speech ability. 3. Mental ailments. 4. Dysentery. 5. Asthma & colds. 	
21.	<i>Sansevieria zeylanica</i>	Ceylon browstring hemp (or) Snake plant	<ol style="list-style-type: none"> 1. Treatment of ear infection, earache & toothache. 2. Treatment of septic wounds. 3. Snake and insect bite. 4. Respiratory problems. 5. Treat fungal diseases. 	
22.	<i>Ocimum tenuiflorum</i>	Karuntulasi (or) Holy basil	<ol style="list-style-type: none"> 1. Curing cold, cough, fever. 2. Stomach pain. 3. Helps in relieving kidney stones. 4. Diabetes 5. Natural immune booster. 	

23.	<i>Hibiscus rosa-sinensis</i>	Hibiscus	<ol style="list-style-type: none"> 1. Prevent hair loss. 2. Liver disorders. 3. Fight cancer cell. 4. Decrease blood pressure. 5. Diabetes. 	
24.	<i>Tabernaemontana divaricata</i>	Crepe jasmine (or) Pinwheel flower	<ol style="list-style-type: none"> 1. Curing blood disease. 2. Eye infection. 3. Intestine worm. 4. Prevent stroke. 5. Jaundice. 6. Callous ulcers. 	
25.	<i>Bryophyllum pinnatum</i>	Kalanchoe pinnata	<ol style="list-style-type: none"> 1. Treat gastric ulcer. 2. Respiratory infection. 3. Relief of backaches, Headaches. 4. Wounds and Rheumatoid arthritis. 5. Treat kidney stone. 	
26.	<i>Justicia adhotoda</i>	Malabar nut	<ol style="list-style-type: none"> 1. Tuberculosis 2. Curing Bronchitis 3. Prevents cough, colds, asthma. 4. Dyspnoea. 5. Reduces joint pain, muscle spasms. 	
27.	<i>Lawsonia inermis</i>	Henna	<ol style="list-style-type: none"> 1. Wound healing. 2. Regulated blood pressure. 3. Skin problems 4. Natural cooling effect. 5. Prevent dandruff. 	
28.	<i>Punica granatum</i>	Pomegranate	<ol style="list-style-type: none"> 1. Stomach disorders. 2. Cancer prevention. 3. Protect cardiovascular health. 4. Increase hemoglobin 5. Improve skin health. 	
29.	<i>Allamanda cathartica</i>	Golden trumpet (or) Yellow allamanda	<ol style="list-style-type: none"> 1. Treat liver tumors, 2. Colds & fever. 3. Jaundice & malaria. 4. Skin diseases. 5. Splenomegaly. 	
30.	<i>Artabotrys hexapetalus</i>	Manoranjitham	<ol style="list-style-type: none"> 1. Hepatic disorders. 2. Microbial infection. 3. Fever & Ulcers. 4. Vomiting, nausea. 5. Blood and heart problems. 	

Conclusion

This study demonstrated how various identification techniques make it easier to obtain information on the names of the plants that have been treated for illnesses, how they are used, and how they are directed. The method used to manufacture herbal preparations is still a trade secret that is verbally passed down through generations. A thorough analysis of herbal remedies and the phytoconstituents of commonly used plants can lead to new discoveries for researchers. However, in the framework of a professional approach to developing a novel herbal drug, ethno-botanical facts serve as the foundation for additional justification of practices and plant usage.

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