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Traditional Knowledge of Medicinal Plants in Tamil Nadu

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TRADITIONAL KNOWLEDGE OF MEDICINAL PLANTS IN TAMIL NADU

Introduction

The origin and the knowledge of Traditional medicinal plants date back in human history, as he has completely depended on plants for food and wellness. The knowledge he gained over generations is generally transmitted through a community, family, individual and preserved for future. The knowledge of the medicinal plants was gained, probably through some sources as given below.

- Observation of animals and insects would have inspired some ideas about the plants and their nutritional and healing effect.
- Observing the characteristic of a plant and formulating ideas about its therapeutic values.
- Applying this knowledge in certain illness and confirming their efficacy by self experience.
- Finally by instinct and inner consciousness naturally born within him.

As a result of this knowledge, he consolidated the merits and demerits of the herbs he come across.

Plant medicines were not only followed in human life but also in the other lives. There are instances where animals consume certain herbs when they become unwell. For example the tiger eats grasses to expel intestinal worms. The elephant eats the root of *Diospyros* to arrest loose motions. Similarly pregnant monkeys eat *Cynodon* grass to promote urination and reduce swelling in the legs.



How Plants Work In Healing Process

Plants are complex living entities. They contain various chemical compositions, sources of vitamins, minerals, fats, protein, etc. These active constituents of the herbs can used to heal the body in several ways. Orally consuming plants, will be absorbed by the digestive system, application externally through skin will be absorbed in the body through the pores, smelling the aromatic herbs through nose promotes the absorption through the lungs and in turn the blood stream.

India, a land of ancient culture, has a vast potential of herbal knowledge. The tribals, vaidyas, institutionally trained medical personnel etc. have researched several hundreds of herbs and formulated and used them as single or compound preparations. These preparations have also been put into practical use. This traditional knowledge system has been named as the alternative medicine.

Indigenous systems in India

In India two indigenous systems namely Ayurveda & Siddha has been practiced. The other systems such as Unani, Homeopathy, Tibetan systems have also been practiced but are not truly indigenous. In all the systems plant extracts play a vital role.

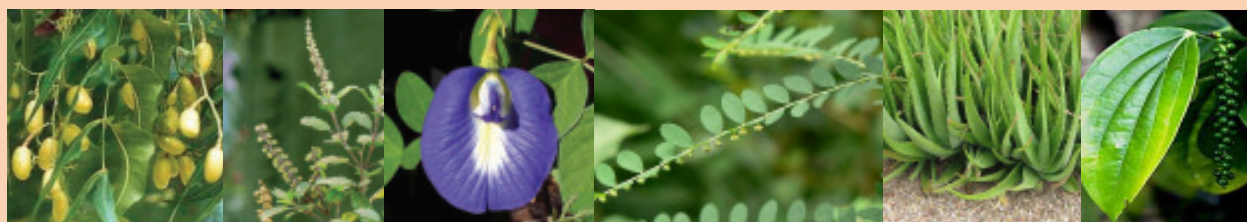
The traditional knowledge of medicinal plants is considered to be the nucleus for all these systems. More than 4000 herbs have been described with botanical characters in the vedas. Similarly in Siddha the classical text Agasthiar Gunavagam deals in detail with a similar number of herbs.

Traditional medicinal practices in Tamil Nadu

Tamil Nadu is endowed with all natural wealth such as the hill forests, river beds, coastal tracts, semi desert, fertile soil and adequate monsoon. Beside this, the enriched knowledge of medicinal plants has brought under use, more than 2000 herbs to cure illness. Every village or small revenue area has one or two specialists who practice herbal medicine. The following are some of the important illness these traditional medicine practioners treat using medicinal plants.

Commonly used medicinal plants in Tamil Nadu

Binomial name	Tamil name	Medicinal uses
<i>Abrus precatorius</i> L.	Kundumani	Tonic, Expectorant, Snake bite.
<i>Acalypha indica</i> L.	Kuppai meni	Toothache, ear ache, severe cough, ringworm and burns.
<i>Allium cepa</i> L.	Venkayam	Foot & mouth diseases, intestinal worms, diarrhea.
<i>Allium sativum</i> L.	Vella pondu	Foot & mouth diseases, skin infection, rheumatism, snakebite, gastric trouble.
<i>Aloe vera</i> (L.) Burn.	Sothukathalai	Skin diseases and ulcer.
<i>Andrographis paniculata</i> (Burn. F) Wall ex. Nees.	Chriyanangai	Fever, body weakness, snake bite and skin allergies.
<i>Azadirachta indica</i> A.Juss.	Vembu	Retention of urine, burn, lympany, indigestion, snakebite, foot and mouth diseases, tetanus.
<i>Capsicum annum</i> L.	Kanthari milagu	Reduce blood pressure and medicine for pregnant women.
<i>Cathranthus roseus</i> (L.) G. Don.	Nithiya kalayani	Leukaemia and hypertention.
<i>Cinnamomum zeylanicum</i> Blume.	Lavankapatti	Simulative perfumes, deodorant, carminative and expectorant.
<i>Cissus quadrangularis</i> L.	Peirandai	Healing of fractured bones, stomachache and laxative.
<i>Citrus aurantifolia</i> (Christm.) Swingle.	Elimichai	Digestive disorders and skin diseases.
<i>Clitoria ternatea</i> L.	Sangupuspan	Diuretic, Purgative and cardiac diseases.
<i>Dioscorea bulbifera</i> L.	Vethalaivalli	Ulcer, piles and dysentery.
<i>Eclipta alba</i> (L.) L.	Karisalankanni	Anti-inflammatory and hair tonic.
<i>Hemidesmus indicus</i> (L.) R.Br.	Nannari	Reduce body heat, and thirst.
<i>Hibiscus rosa-sinensis</i> L.	Semparuthi	Hair tonic and emollient.
<i>Maranta arundinacea</i> L.	Koovai kilangu	Ulcer and dysentery.
<i>Myristica fragrans</i> Hoult.	Jathikai	Digestive disorders, dehydrative and skin diseases.
<i>Ocimum sanctum</i> L.	Thulasi	Cough, cold, bronchitis and expectorant.
<i>Phyllanthus amarus</i> Schum. & Thonn.	Kezhanelli	Jaundice, diarrhoea, dysentery, Intermittent fever, diseases of the urino- genital system, scabies, ulcers.
<i>Piper betle</i> L.	Vetthilai	Carminative and stimulant.
<i>Piper longum</i> L.	Thippili	Bronchitis, cough and cold.
<i>Piper nigrum</i> L.	Milagu	Reduces cholesterol, body heat, cough and cold.
<i>Syzygium caryophyllatum</i> (L.) Alston.	Kirambu	Antiseptic and carminative.



The significance of traditional knowledge

Traditional knowledge is integral to the identity of most local communities. It is a key constituent of a community's social and physical environment and, as such, its preservation is of paramount importance. Attempts to exploit Traditional Knowledge for industrial or commercial benefit can lead to its misappropriation and can prejudice the interests of its rightful custodians. In the face of such risks, there is a need to develop ways and means to protect and nurture Traditional Knowledge for sustainable development in line with the interests of Traditional Knowledge holders. The preservation, protection and promotion of the Traditional Knowledge-based innovations and practices of local communities are particularly important for developing countries. Their rich endowment of Traditional Knowledge and biodiversity plays a critical role in their health care, food security, culture, religion, identity, environment, trade and development. Yet, this valuable asset is under threat in many parts of the world.

Threats to Traditional Knowledge

Traditional knowledge has always been an easily accessible treasure and thus has been susceptible to misappropriation. The traditional knowledge, particularly, related to the treatment of various diseases has provided leads for development of biologically active molecules by the technology rich countries. In other words, traditional knowledge is being exploited for bio-prospecting. Also Traditional knowledge is often misappropriated, because it is conveniently assumed that since it is in public domain, communities have given up all claims over it. Traditional Knowledge includes both the codified (documented) as well as non-codified information (not documented but may be orally transmitted).

Bio-piracy of codified Indian traditional knowledge continues, since, this information exists in regional languages, and there exists a language barrier due to which the patent offices are unable to search this information as prior art, before granting patents. Formulations used for the treatment of human ailments from traditional knowledge are time-tested since they have been in practice for centuries. The reliability of the traditional medicine systems coupled with the absence of such information with

patent offices, provides an easy opportunity for interlopers for getting patents on these therapeutic formulations derived from traditional medicine systems.

Traditional Knowledge Digital Library (TKDL) - A tool for prevention of misappropriations of traditional knowledge

TKDL targets Indian Systems of Medicine, viz., Ayurveda, Unani, Siddha and Yoga available in public domain. This is being documented by sifting and collating the information on traditional knowledge from the existing literature, existing in local languages such as Sanskrit, Urdu, Arabic, Persian and Tamil in digitized format, which will be available in five international languages which are English, German, Spanish, French and Japanese. Traditional Knowledge Resource Classification (TKRC), an innovative structured classification system for the purpose of systematic arrangement, dissemination and retrieval was evolved for about 5,000 subgroups against few subgroups available in International Patent Classification (IPC), related to medicinal plants. The information is being structured under section, class, subclass, group and subgroup as per the International Patent Classification (IPC) for the convenience of its use by the international patent examiners. Information comprising about 2 lakh formulations has been transcribed for realizing the objective of TKDL Project.

TKDL acts as a bridge between formulations existing in local languages and a Patent Examiner at a global level, since the database will provide information on modern as well as local names in a language and format understandable to Patent Examiners. It is expected that the issue of the gap on lack of access to prior art traditional knowledge shall get addressed.

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EVENTS

Events organized in connection with Information, Education and Communication campaign to eschew non degradable plastics.

The Department of Environment in collaboration with the DHAN Foundation organized the Information, Education and Communication campaign to eschew non degradable plastics. The events were organized by involving the school students, men and women SHG members, NGC volunteers and general Public. The walkathon has been coordinated by SHG federation in their respective districts, NGC coordinators and FCO coordinators in the Collector's office have actively participated in organizing these events in select locations. All the district collectors and the Chief Education Officers concerned gave whole hearted cooperation for the participation of not only the NGC volunteers but also all the other students.

Overall events were very well received by the SHG members who made an oath to avoid the non degradable plastics in their area. Three teams of street play professionals performed in the presence of large number of general public and school students. Special stencil plates and stickers were prepared to create awareness and were displayed in prominent places. A comprehensive booklet on Climate Change and Plastics, brought out by the DHAN Foundation was distributed during the event.



One-day Training programme on Biodiversity at Zoo school, Vandalur.

The ENVIS Centre, Department of Environment conducted a one day training programme on wild life for the NGC school children. This training programme was conducted at the Zoo school in Arignar Anna Zoological Park School, Vandalur on the 29th March 2012. Around 125 students and 10 teacher coordinators participated in the training programme. Dr. Manimozhi, Biologist, Vandalur Zoo gave a lecture on the conservation of biodiversity and the importance of wildlife.

After the lunch Mr. R. Palani, Assistant Conservator of Forests and Mr. C. Murugesan, Range Officer, Department of Environment took the children for a field visit around the zoo. The training programme was enjoyed by the students and more such initiatives were requested by them.



One day training programme for the NGC school students

The training programmes were conducted at Forestry Extension Centres in all the 32 districts. The programmes were organised by NGC state co-ordinator Mr. A.B. Thiruvengadam, Mr. R. Palani, ACF and Range Officer Mr. C. Murugesan. In the Coimbatore District, the training programme was conducted at Institute of Forest Genetics and Tree Breeding centre (IFGTB) Auditorium. Dr. N. Krishnakumar, I.F.S., Director IFGTB provided infrastructural facilities and gave an encouraging lecture to the students.

Apart from the Department officers, several other officers also participated. Dr. V. Chelladurai, Retd. Senior Scientific Officer, described various medicinal plants. Thiru. Selvam an active pro environmentalist and practicing organic farming delivered useful lectures to the students of Erode and Tiruppur Districts.

Chief Educational Officers of Virudhunagar, Cuddalore, Tirunelveli districts participated and encouraged the students through their useful lectures. In Ramnad district, the students staged a cultural programmes on environment. Forest Extension Officers and other forest officials took part and explained in detail the various aspects of the forests and the uses of the trees, the need for afforestation and extension activities carried out by the Forest Department.

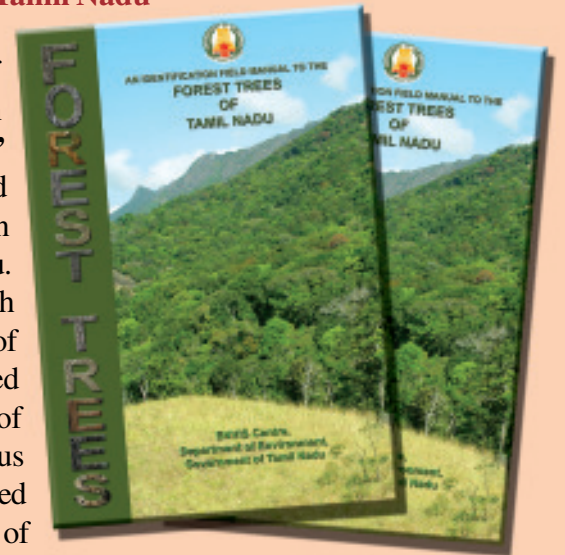
The technical session on the topic “Environment –An Overview” was dealt by ENVIS staff Mr. J.D. Marcus Knight, Senior Programme Officer, Mr.A.B. Thiruvengadam, NGC State coordinator and Mr. R. Palani, ACF. The subject was dealt using visuals and videos to help the students understand the importance of conserving the environment, impact of pollution and the advantage of renewable energy.

A quiz programme was also conducted and prizes were distributed. During the field visit in the afternoon the students had an opportunity to learn about the green house, the mist chamber, vermi composting, VAM, economic importance of various trees and raising medicinal plants. A total of 31 NGC training programme were conducted in all the 32 districts of Tamil Nadu involving around 3,200 NGC students and 320 teacher co-ordinators from 320 schools. The feedback from the students and teacher coordinators was encouraging and more such programmes were requested in future.



An Identification Field Manual to the Forest Trees of Tamil Nadu

Environmental Information System (ENVIS) Centre of the Department of Environment has published Book titled “An Identification Field Manual to the Forest Trees of Tamil Nadu” The book was published under the Part – II scheme sanctioned by the Government of Tamil Nadu. This was an initiative to help in the easy identification of the little known forest trees of Tamil Nadu. This identification manual has been compiled in consultation with experts with immense field knowledge to make the identification of the tree species as simple as possible, so that the book can be used by students, researchers and Forest Department staff. The use of symbols for Red listed (IUCN), Traded species, Medicinal status etc, adds value to this book. The value of this book is further enhanced by the color photographs depicting the key identification feature of the trees. The use of common names in Tamil helps to break the language barrier as it can also be used by a layman to help in tree identification. Care has been taken to avoid too many scientific terms and the descriptions have been given in simple English to help in easy understanding.



The Identification Field Manual to the Forest Trees of Tamil Nadu, was released by the Hon'ble Minister for Environment, Shri. B. V. Ramanaa, during the International Forestry Day celebrations held on 21st March 2012 at Guindy National Park Chennai. The first copy was received by the Hon'ble Minister for Forest, Shri K.T. Pachamal.



Gloriosa superba Linn. – A Medicinally important plant

Gloriosa superba Linn., commonly called the Glory lily is the State flower of Tamil Nadu. It is one of the endangered species among medicinal plants, which is a striking tuberous climbing plant with brilliant wavy edged yellow and red flowers that bloom from November to March every year. It is one of the seven upavishas in the Indian medicine, which cure many ailments but may prove fatal on misuse.

Every part of the *Gloriosa* are used for medicinal purpose, in ayurveda and yunani system of medicine, it is a reputed medicinal plant. According to ayurveda, the tuber is pungent, bitter, acrid, heating, anthemirtic, laxative, alexiteric, abortifacient and useful in curing ulcers, gonorrhoea, leprosy, piles, inflammations, abdominal pains, itching and thirst. Tubers are also used for antifertility purpose. Other than this the root, which the Ethnic communities of North-East India use as a paste for curing gout, stomach ache, intermittent fever and wounds. The tuberous root stocks of glory lily, boiled with Sesamum oil when applied twice a day on the joints, affected with arthritis helps in reducing pain. It is also used to treat intestinal worms, bruises, infertility, skin problem and impotence.



Gloriosa superba has been widely used for curing a number of diseases as it has various medicinal properties. A number of pharmacologically important phytochemicals such as gloriosine and colchicines have been isolated from this plant, therefore in the world market they are considered as rich sources of colchicines and gloriosine. This has led to the over collection of this plant in the wild leading to its status being declared as endangered.

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