

Medicinal plants of Sikkim in Ayurvedic practice

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Abstract

The rich flora of Sikkim has a number of raw drugs described in Ayurvedic texts. There are about 420 plants used by the tribal people for various diseases in Sikkim Himalayas region, out of which few are utilized on commercial basis. Here thirty medicinal plants are presented which have high medicinal values in Ayurveda. Most of the drugs have *Rasayana* and *tridoshagna* properties and used in common health problems of Sikkim

Ayurveda, the oldest traditional medicine is mostly deals with the plants. According to world health organization statistics , about 25% of the preserved human medicine are derived from plants and 80% people still depend on traditional system of medicine. It is also estimated by World Health Organization (2006) out of 58 million deaths 2005, 35 million were result of chronic diseases. This will increase by 17% in next 10 years , out of this 17.52% million death in heart diseases, 7.58 million in cancer and 4.5 million in respiratory diseases. Research is going on world wide in the effectiveness of herbal medicines for chronic diseases like – Cancer, Heart disease , Bronchitis, Autoimmune disorders , Rheumatism , cancer, AIDS etc. and drug resistance Malaria, leprosy, tuberculosis, Dengue, Plague etc.

The unique geographical position and wide range of topography, high fertile soil , sufficient rainfall and presence of large number of perennial stream makes the state of Sikkim one of the treasure house of bio-diversity in the country. Sikkim has vast reserve of medicinal plants and rich culture of folk medicine. The rich flora of Sikkim has a number of raw drugs described in Ayurvedic texts. There are about 420 plants are used by the tribal people for various diseases in Sikkim Himalayas region, out of which few are utilized on commercial basis. . It is necessary for the establishment of scientifically medical plant farm and bio-chemical laboratories for the identification of active ingredients / molecule from the plant species. The preservation cultivation and adoption scientific approach in the field of medicinal plants of Sikkim is highly necessary.

Increased the cost of treatment, investigation, medicine and hazardous side effect of synthetic drugs (Allopathic) have brought grater awareness to the common people and medicinal profession about Ayurveda. It may be noted that among the Indian System of medicine, the infrastructure in Ayurveda is more prominent and about five lakh physician practicing Ayurveda system covering even remotest area of the country. With the help of current science and technology, research and development Ayurveda started delivering standard medicine in advanced forms with proven efficiency. There is a great demand of Ayurveda in the state as our Institute received 40-60 patients in our O.P.D. daily from various corner of Sikkim. From the above back ground, it is necessary to study the medicinal plants of Sikkim in Ayurvedic practices

Ayurvedic Principle- The philosophy of Ayurveda is based on the theory of *Pachamahabhuta* (five primary elements) of which all living and nonliving bodies are composed of. According to Indian philosophy, there is a complete similarity between the universe and human body. This fact has been also pointed out in the Vedic literature as

“*yeatha pinda tatha Brahmanda*” meaning whatever is found in *pinda (purusa)* the same thing is noticed in Bramhanda (universe or cosmos). In other words, it can be said that there is a direct relationship with individual and the universe around him. In the universe, air (Vayu), Sun (Surya) and Moon (Chandra) are the fundamental things, which control the physical affair likewise *Vata, Pitta* and *Kapha* are found in the body etc for the biological control. Acharyas may substitute *Vata, Pitta* and *Kapha* as functional unit because *Tridosha* are responsible for all biophysical, biochemical and all transformation in the body. Even though *tridosha* are composed of *panchamahabhutas*, anatomical structure of *Tridosha* cannot found in body. The morphological descriptions of *tridosha* are not also found in entire Ayurvedic literature, only their qualities, character and function has been described. *Sapta dhātu* (seven primary tissues) are the structural unit of body, as they are the constitutes of various organs in body. By the interaction between *dhatus* and *dosa*, *Malas* are generated as the by products of body. *Mala* (impurities) should be excreted from body, as they liable to re-absorb in the channel and abstracted the path. Generally *Malas* cannot be utilised by the body. If any condition *Malas* is re-absorbed or obstructed the path then disease occurs. Therefore *dosas, dhatus* and *malas* are three components of living body, which maintain the life, and health of an individual. Ayurveda considers the human being as a combination of the three *dosas*, *Panchmahabhutas* (Five elements) seven body tissues (*saptadhatu*), five senses (*Panch indriyas*), *Mindm(Manas)*, *Intellect (Budhi)* and *soul (Atma)*. The doctrine of Ayurveda aims to keep these structural and functional entities in a functional state of equilibrium, which signifies good health. Any imbalance due to internal or external factors results in disease and restoring the equilibrium, through various techniques, procedures, regimen, diet and medicine is the treatment. All the medicinal plant's action is also designed as per the *dosa*. *Rasayana* drugs have the property to clear the channels by which it is act as immulomodulators, adaptogenic etc. and delayed the aging process.

Materials and methods :- The medicinal plants of Sikkim is collected from the Survey of Medicinal Plants Unit(SMPU) of our institute. A checklist of current available medicinal plants is prepared out of the collected data. The available medicinal plants are searched for the Ayurvedic practice from different classical Ayurvedic text and pharmacopeias.

RESULTS AND DISCUSSION

There are about the 420 species of medicinal and aromatic plants in Sikkim Himalaya. Brief particulars of the important medicinal plants specially found in Sikkim and used in Ayurvedic practice are given below.

1. *Abies forrestii* C.C Rogers

Local name- Bobresall

Ayurvedic name- Talisapatra

This is important drug of Ayurveda Pharmacopeias the leaf is sweet in taste and used for bronchitis, cough, hiccough, vomiting, dyspepsia, anorexia, indigestion etc. it used in the Vatakapha disorders.

2. *Abies webiana* Linn.F

Local name- Sala

Ayurvedic name- Talisapatra

This plant also used as Talisapatra.

3. *Aconitum ferox* wall.

Local name-Bikh, Bikhma

Ayurvedic name- Vatsnabha ,

The plant is commonly found at lower alpine region during July-Aug. in Sikkim, it is found at North-East Sikkim, Nathulla, Dzongu and Singatela ridges. This is a *rasayana* (adoptogenic), *Yogavashi* (channel clarifier), *Tridosagna* (maintain the body humors) and is used in all types *Kapha –vata* disorders. It is used in Ayurveda in pain condition, fever, Inflammatory conditions ,diabetes, bronchitis and skin disorders.

4. *Aconitum hetrophyllum*

Local name-Bikh, Paunkar

Ayurvedic name- Ativisha

There are about 24 species of aconites in the Himalayan region out of which the best known species is *Aconitum hetrophyllum*. The root is bitter in taste and *Tridosagna* (maintain the body humors). It is the best drug for child's all types of problems like- Infant diarrhea, cough , cold, fever etc .

5. *Acorus calamus*

Local name -Bajao

Ayurvedic name- Vacha

It is found in the marshy land and covers a large area. It also grows on the banks of lakes and ponds. The rhizomes give a bitter tasting tonic which is much used against fever, cough, pharyngitis, bronchitis, rheumatism, diarrhea, dyspepsia and colic condition by the tribal. In Ayurveda, it is used for emesis, vata kapha disorders, pain and for the purification of stool and urine. It is used in constipation, abdominal pain, epilepsy and insanity and it also increase the memory, strength and intelligence of child.

6. *Aloe barbadensis* Mill

Local name-Ghewkumari

Ayurvedic name-Gritkumari

It is a perennial xerophytes plant having short thick stem covered with sessile fleshy leaves. The full grown mature leaves are grayish-green to dirty-white in colour and round at their base with broad, flat upper surface, Because of its hardy nature, the plant can be grown on a variety of soils. It has wide adaptability and can grow in different climatic conditions. Fresh leaf juice is used as purgative, carminative, digestive, helpful in ophthalmia, piles, muscular pain and inflammation. It is also used as a nourishment for growth of hair. It is also used in skin ailments, arthritis, burn, etc.

7. *Angelica archangelica* Linn

Local name-Khomog

Ayurvedic name-Choraka, Chanda

This plant's root is bitter in taste and exclusively used in Mental diseases particularly epilepsy and Insanity with emetic drugs. It is also used in itching, skin diseases, ulcer, infection and toxic condition.

8. *Artimisea vulgaris* L

Local name-Tetaypati

Ayurvedic name- Damanaka, Topadhana

This plant is found between 1500-200 m amsl in slopes and ridges at shady and moist places. Apart from the medicinal purpose the plant also has many uses in traditional and religious functions of the tribal people. This plant is used in Ayurveda in skin diseases,

irritable bowel syndrome, bleeding, various toxic condition and to maintain the body humors(Tridosaghna).

9. *Asparagus recemosus* Willd

Local name-Satmulu

Ayurvedic name-Satavari

It is also a Rasayana drug and good for pregnant women. It increase the semen , milk, memory and used in abdominal discomfort, dysentery, inflammation and all vata pitta condition.

10. *Bergenia Lingulata* (Har.)

Local name-Pakhanbheda

Ayurvedic name-Pasanbheda

Local people used in only diarrhoea and dysentery but Ayurveda used in poor appetite, renal calculi, abdominal abscess, infectious abscess, old goiter and gland, blood purifier and to maintain the body humors(Tridosaghna).

11. *Callicarpa macrophylla* Vahl.

Local name- Patharwar

Ayurvedic name- Priyangu

It is bitter in taste and useful in Blood dysentery, sweating, Burning sensation and fever due to its cold potency. This is the best medicine for bleeding disorders and it reduces the bad smell from body.

12. *Celastrus Paniculatus* Willd

Local name-Runglim

Ayurvedic name- Jyotismoti

The herb mainly used in vata-kapha disorders and it increase the *Medha*(memory), *buddhi* (judgment) and *pragyna*(Intelligence).

13. *Cinnamomum tamal* Nees & Eberm

Local name- Choti, Sinkoli

Ayurvedic name- Tejpatra

It is a used in kapha-pitta disorders like-cough, rhinitis, piles, worm infestation of children. It is used in convulsion and vomiting.

14. *Costus speciosus*

Local name- Betlaure

Ayurvedic name-Kebuka

This plant is lesser known medicinal plant of this region. The root is pungent and bitter and used in cough, bronchitis, fever, rheumatism, urinary disorders, loss o appetite, loose motion and skin diseases. These underground tubers are considered now as source of Diosgenin, the precursor of steroid, including sex hormones and oral contraceptives.

15. *Dendrobrium nobile* Lindl.

Local name- sonahkiri

Ayurvedic name- Swarna jeevanti

This herb juices is redness of eyes, for increase strength, vigor and vitality and *Rasayana*.

16. *Eupatorium cannabinum* L

Local name- Banmara

Ayurvedic name-Ayapan

This plant grows like a wood on open sunny slopes which is common in sikkim and not have any special value. It is important medicinal plant in Ayurveda to stop the bleeding and protect the wound from infection.

17. *Hedychium spicatum* Ham Ex. Smith

Local name- Kapur kacheri

Ayurvedic name-Sati

This plant 's root is pungent and bitter in taste mostly used in tooth powder. It is used in cough, Bronchitis, ulcers , inflammation, pain etc. it is also used in the treatment of even planet.

18. *Mallotus philippinensis* Muell

Local name-Sinduria,Puroa,Safedmallata

Ayurvedic name- Kampillaka

This plant's fruit *renu* is used as purgative and used kapha pitta disease like- worm constipation, infestation and abdominal diseases.

19. *Nardostachya jatamansi* DC

Local name-Japoy

Ayurvedic name- jatamansi

Jatamansi is a perennial herb, commonly found at 3600-4800 m amsl. The plant is an age old remedy among the tribal people of Sikkim. The aromatic root which is slender in constitution is covered almost entirely by coarse brown hairs. Acting as the popular valerian, it is administered as a stimulant and an anti-spasmodic in hysteria and epilepsy. It has been recorded that plant has a host of pharmacognostical properties such as myocardial infarction, antispasmodic, laxative, its infusion in epilepsy, hysteria, heart palpitation, cholera, its tincture in colic and flatulence, as ingredient in the preparation of hair oil and promote growth of hair. The dried root is used in epileptic bits, cholera, palpitation and also during hair loss.

20. *Oroxylum indicum* Vent.

Local name-Totola, Shivnak

Ayurvedic name-Syenaka

This plant 's bark is one of ingredient in *dosamula* and bitter in taste and used in *kaphapitta* and *ama* disorders. It is best medicine for urinary bladder problems and used in stones, diarrhea and anorexia.

21. *Paederia foetida*

Local name- Biri, Berihara

Ayurvedic name-Gandhaprasarani

It is a twining climber which is mostly found inside wood lots. When rubbed or trampled, the plant emits a very offensive smell. The leaves are of opposite phyllotoxy and the small flowers are of dark pink colour. In Ayurvedic preparation, it is considered alterative, anti-arthritic, antispasmodic cardiac, diaphoretic, expectorant and stomachic. It is also used in asthma, bowel complaints, diarrhea, diabetes, rheumatism, seminal weakness etc. The dried fruits are used. The extract is applied for toothache also.

22 *Picrorhza kurroa* Royle ex. Benth

Local name-Kutki

Ayurvedic name- Katuki

Picrorhiza kurroa is one of the medicinal herbs found in the Himalayan region in abundant quantity. This is also one of the herbs which is marketed in large scale. The roots of the plant is bitter in taste and the dried roots are used orally in malaria. The roots are used as bitter tonic, cathartic, stomachic, given in fever, dyspepsia, as strong purgative and also applied in scorpion and other insect bites.

23. *Podophyllum hexandrum* Royal

Local name- Panchpatey

Ayurvedic name- Banakarkatee

It grows at the lower alpine regions and has been in medicinal usage since ancient days. Now the plant has been experimentally cultivated at higher altitudes between 1500-w3000m amsl. The plant gives out a pair of crow-foot leaves and during fruiting season the plants can be easily identified due to the reddish colour of its fruits. The roots contain podophyllol, podophyllin and podophyllotoxin as well as a sticky resin-queracetin. The roots are used as emetic, cholagogue, blood purifier, purgative and alterative. It is considered as a cardiac tonic in small doses. It also finds use as a stimulant in peristalsis, allergy and skin inflammations.

24. *Rubia cordifolia* Linn

Local name- Manjitho

Ayurvedic name-Manjistha

It is a perennial herbaceous climber found in Sikkim at altitude between 4000-7000 ft.the root and fruits are used for medicinal purpose. Root is bitter and used in Kaphapitta disorders. It has analgesic and inflammatory properties. It is used in the diseases of the uterus, pains in the joint, rheumatic conditions, leucorrhoea, etc. Also used as febrifuge and against blood disorders in Ayurveda. Our preliminary study found that *Manjistha* is best drug in gout.

25. *Swertia chirata* Buch.-Ham.

Local name-Chirato

Ayurvedic name-Kiratatikta

Chirata is one of oldest medicine used in the region. It is an annual perennial erect and brached herb found in moist and shady places. It tastes bitter from root to tip. Due to its bitter taste, it is considered as tonic, astringent, stomachic, improves eye sight, pain in the joints, scabies

26. *Saussuria lapa* C.B.Cl

Local name-Asolow, Brahma kamal

Ayurvedic name-Kusta

It is also a *Rasayana* drug, pungent and sweet in taste and used in *vatakapha* disorders. Ayurvedic physician used in cough, cold, bronchitis, hiccough, skin diseases and fever.

27. *Smilax lanceaefolia* roxb.

Local name-Kukur, Ramdatun

Ayurvedic name- Chopachini

This plant's rhizome is used in Ayurvedic medicine for sexual transmitted diseases, neurological problems and psychiatric problems. It is also used in epilepsy and purification of urine and stool.

28. *Taxus baccata* Linn.

Local name-dhengresalla

Ayurvedic name- Talispatra

Taxus baccata is an evergreen tree popularly known as Himalayan Yew is somewhat similar to pine tree. In Sikkim, it is found at altitudes between 2500-3500m amsl. It is a slow growing small to medium size tree usually 6 m or so in height and 1.5 to 1.8 m in girth, stem fluted, crown spreading. Bark greenish brown, softly corky, peeling off in longitudinal thin shreds, inside light pink with thin fibrous plates. Flowers usually dioecious, seeds are compressed, wingless, olive green, enveloped by a soft-fleshy coloured arillus, testa, woody, cotyledons. Taxol is isolated from the bark and leaf of the tree which is effective against certain forms of cancers, particularly breast, ovarian and lung cancer. The plant though poisonous, is of great medicinal value. A medicinal tincture made from young shoots has long been in use for the treatment of headache, giddiness, feeble and falling pulse, diarrhea and severe biliousness.

29. *Valeriana hardwickii* Wall.

Local name-Chammaha

Ayurvedic name- Tagar

This plant is used in kapha vatta diseases and the drug of choice in neuro- psychiatric problems like- vertigo, drug dependence, epilepsy and other mental diseases.

30. *Zanthoxylum alatum* Roxb

Local name-Tumuru

Ayurvedic name-Tejbatee

This plant's fruits and bark is pungent in taste and used in kapha vata disorders, mostly in skin diseases, abdominal pain, anorexia, warm infestation and ataxia in Ayurvedic practice.

Medicinal plants available in Sikkim have the *rasayana* properties and used in grey areas of allopathic medicine. Due to lack of knowledge of identification and medicinal values, these plants were unused and destroyed. Taking advantage of tribal and village folks, the merchants of medicinal plants procure all the plants without disclosing the real value at through away prices. The merchants/ agents sell these plants in markets at very high prices, making the Indian system of medicine very expensive. If the medicinal plants farming is implemented systematically and a scientific approach is adopted, this will pave way for development of the state in a big way in the near future. Which are extracted by the locals people for ethnic medicinal use, for use in Ayurveda and Tibetan medicines and also for use in modern bio-pharmaceuticals. The state can attain high value addition resulting in higher employment generation and increased income to the people, if propagation of these high value medicinal and aromatic plant is adopted.

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REPORTS OF REGIONAL REASEARCH INSTITUTE (AYURVEDA)

Introduction

Our institute has been established in Gangtok, Sikkim in 9th June 1979.

- It is only Ayurvedic institute to support Ayurveda & other I.S.M.
- Average 30-40 patients are attending our OPD. Total 7561 patients are treated successfully from 1st April to 31st Jan 2007.
- 25% of OPD strength are army personnel , so army are more interested for Ayurveda in this state.

Present Activities of our Institute from A

- To undertake clinical trials for studying the efficacy of drugs.
- To cater out service in O.P.D.
- Sales of council's publications & medicine.
- Resources generated revenue.
- Participate in various health programmes related to I.S.M. of state Govt.
- To support the public and NGO

- To provide health education & Knowledge of preventive measures.
- To educate the people regarding child health care & maintenance of normal health through camps, Newspapers & electronics media
- To generate awareness about Ayurveda among the public of Sikkim

Extra Programmes under taken

1. Health check up camp in Dream land Academy, Daurali on 12-4-06 – total 238 patients checked their health & delivered free medicine and 17 patients blood grouping done.
2. Health check up camp at Namchipong higher secondary School, Namchipong on 8-6-06 – total 104 patients checked their health & delivered free medicine and 29 patients blood grouping done.
3. Joined in a meet on enterprise development training programme in Sikkim on 8th may 2006 at Chief Secretary Chamber, Gangtok.
4. Joined with Dr K.K.Misra , IGNCA, New Delhi for Study of Indigenous Knowledge Base on Medicinal Plants in Sikkim from 18th may to 21 may 2006 . The study identified some folk healers of East Sikkim & Namchi district.
5. Joined a meeting at G.B. Panth Institute of Himalayan environment and development on 3rd July 2006 to Identify R&D priorities and possible collaboration with various institute of Sikkim.
6. Organised a Yoga & Naturopathy camp on 15-16 July 2006 and 200 patients participated in this camp.
7. Delivered three lectures about *Skin & Beauty care in Ayurveda* at Small Industries Services of India (SISI), Gangtok on 29-8-06, 3-9-06 & 5-9-06.

Present research activities in a glance.

S.N	Name of the Project	Title of the study	Present status
1	Grahani	Clinical trial of Bilwamajja Churna on “Grahani” since May 2001	Total 118 cases included & 40 cases showed good response
2	Gridrasi	Clinical trial of Hingutriguna Tail & Yogaraj gugglu on “Gridhrasi” since May 2001.	Total 96 cases included & only 19 cases showed good response.

Research Data (from -1-4-06to 31-1-07)

Name of the Problem	No of pt enrolled	Complete relief	Marked relief	Moderate relief	Mild relief	No relief	LAMA
Grahani roga	13	4	5	1	1	1	1
Gradrasi	09	0	3	2	2	1	1

Data on prevalence of disease(from 1.04.06 to 31.1.07) over 7561 patients

S.N	Code	Name of the Disease	Percentage
1	64	Twak roga(Skin disorders)	9.97
2	06	Amlapitta(Acid-peptic disorder)	7.48
3	58	Sandhi Shula(Arthritis)	6.18
4	66	Udrashula(Abdominal pain)	5.46
5	28	Kasa(Cough)	4.06
6	02	Arsa(Piles)	3.53
7	77	Vatarakta(Gout)	3.43
8	34	Kostavaddhta(Constipation)	3.09
9	76	Vatavyadhi(Neurological problems)	2.89
10	84	Urdha raktachap(Hypertension)	4.13
11	33	Katishoola(Low back pain)	2.24
12	26	Jvara(Fever)	2.85
13	47	Prameha(Diabetics)	1.98
14	84	Medoroga(Lipid disorder)	1.43
15	14	Pandu (Anemia)	1.25