

Indigenous (traditional) vegetables as food and medicine in Adi community of East Siang (Pasighat), Arunachal Pradesh

Arunachal Pradesh is popularly known as land of the rising Sun (latitude 26° 30' N and 29° 30' N and longitude 91° 30' E and 97° E). It is a picturesque state in the remote north eastern part of India with 83,743 sq. kms area. It stretches from snow- capped mountains in the north to the plains of Brahmaputra valley in the south. The climate of Arunachal Pradesh varies with elevation; areas that are at a very high elevation in the upper Himalayas, close to the Tibetan border have an alpine or tundra climate whereas in the middle Himalayas, people experience a temperate climate. Areas at the sub-Himalayan and sea level elevation generally experience humid, sub-tropical climate with hot summers and mild winters.

THE state of Arunachal Pradesh falls under the Himalaya Biodiversity hotspot and harbor a rich diversity of flora and fauna. The native inhabitants of the state include 26 major tribes and 110 sub-tribes. Most of the tribal people still depend primarily on the plant resources for their life support and livelihood. As the state harbor multi-ethnic diversity, it has a great potential for ethnobotanical studies.

Arunachal Pradesh receives heavy rainfall of 80 to 160 inches (2,000 to 4, 100 mm) annually, mainly during May-September. The mountains slopes and hills are covered with alpine, temperate, and sub-tropical forests. Pasighat (East Siang) is one of the districts which are dominated by the Adi tribe. In the tribal society the use of plants as vegetable in daily diet with medicinal values is well known since early days. They used different plant species in the treatment of various diseases using the various parts of the vegetables like, roots, stems leaves, flowers, fruits, tuber, etc. of the plant.

The state has 17 districts, out of which six districts are inhabited by the *Adi* community, namely East Siang, Upper Siang, West Siang, Lower Dibang valley, Lohit and Upper Subansiri. *Adi* is one of the major tribes and consists of 14 sub-tribes, namely *Ashing, Bori, Bokar, Karko, Komkar, Minyong, Millang, Pasi, Padam, Panggi, Pailibo, Ramo, Shimong* and *Tangam*. The *Adi* language spoken by the people belongs to Tibeto-Burman language family. *Adi* people celebrate different festivals which are essential parts of their socio-cultural life. Festivals reflect the traditions, costumes and life style of the people. The festivals are mainly celebrated for feasts, good harvest of crop, merriment and for narrating the myths, legends, folklores and mythologies.

The *Adi* people have the tradition of eating raw leaves, young inflorescences, tender stalks and other palnt parts as vegetable in their diet since time immemorial. These

plants are thought of having medicinal properties. Raw plant parts are used with their indigenous preparation along with meat and fish. This tradition of eating raw plant parts is handed down from genertaion to generation and belived that they get direct medicinal benefit by this way of eating. Besides the parts used in raw form of eating, other parts are also used in cooking. These plants are used as medicine in other forms such as juice, supernatant, after boiling, crushing, direct application, etc. Plants are used as medicine from time immemorial; as many as 1,200 plants are mentioned in ancient text.

The present survey was carried out at College of Horticulture and Forestry, Central Agricultural University, Pasighat, Arunachal Pradesh. The different species of plants were found to be used by the *Adi* people as vegetable (Table 1). Plants belonging to different families were used as raw or in cooked form. Solanaceae and rubiaceae is found to be most widely used family followed by asteraceae, piperaceae, zingiberaceae, actinidiaceae, apiaceae, lamiaceae, and caryophyllaceae. They used various parts of the plants such as leaves, young inflorescence, tender stalks, tuber, fruits and other palnts parts in this mode of eating. The belief behind this mode of eating is that it is good for health and acts as a remedy for various ailments. This could be attributed due to the presence of phytochemical composition in these plants that enhance the power of immunity of human body. Raw plant foods are considered to be rich in nutrition composition and energy; and low in calories. These are further rich in various vitamins like, vitamin C, vitamin A, vitamin B, vitamin E, carotenoids, folate as well as various minerals like calcium, magnesium, selenium, phosphorus, zink, boron, fiber, etc.

Further proper documentation and domestication is needed to assess the scientific and medicinal properties of these plants. It may be hypothesized that the longevity

Table 1. Plants used by the people of Adi tribe living in Pasighat, East Siang area of Arunachal Pradesh

Botanical name	Local name	Family	Habit	Parts used	Traditional Use
<i>Diplazium esculentum</i>	Takang	Athyriaceae	Herb	Tender leaves & shoots	Boiled young shoots and leaves are taken with boiled rice as vegetable for lactative
<i>Centella asiatica</i>	Kipum	Apiaceae	Herb	Whole plant	Fresh whole plant extract is taken 2-3 times a day as stomachic
<i>Begoniya josephii</i>	Sisi baying	Begoniaceae	Herb	Shoots & leaves	Paste of shoots and leaves is given 2-3 times a day for antidycentric
<i>Chenopodium album</i>	Gilimili	Chenopodiaceae	Herb	Leaves & young shoots	The leaves and young shoots may be eaten as a leafy vegetable, either steamed in its entirety, or cooked like spinach
<i>Clerodendrum colebrookiamum</i>	Ongin	Verbanaceae	Shrub	Leaves	Tender leaves are taken as vegetable to check blood pressure
<i>Eryngium foetidum</i>	Adiori	Apiaceae	Herb	Leaves	Leaves are taken as chutney (condiments) believed to be appetizer. Paste from stem and leaf is applied together on forehead as a remedy for headache
<i>Houttuynia cordata</i>	Roram	Saurururaceae	Herb	Shoots	Extract of tender shoot is given for stomach ache. Warmed leaves are packed in banana leaf for snuff or massage to get from sinusities
<i>Mussaendra roxburghii</i>	Akshap	Rubiaceae	Shrub	Leaves	Leaves are cooked and served as vegetable
<i>Physalis minima</i>	Bodopatti	Solanaceae	Herb	Fruit	Fruit extract is administrated for gastric problem
<i>Portulaca oleracea</i>	Guber oying	Portulacaceae	Herb	Stem & leaves	Stem and leaves are taken as vegetable with boiled rice for stomachic
<i>Solanum nigrum</i>	Kopir	Solanaceae	Herb	Stem, leaves & berries	Stem and leaves are used for vegetable and considered digestive and liver tonic. Berries are eaten raw or cooked
<i>Solanum torvum</i>	Kopir	Solanaceae	Shrub	Fruit	Berry is taken as raw as well as in cooked form. Good for cough and tonsillitis.
<i>Solanum spirale</i>	Okobang	Solanaceae	Shrub	Leaves & fruit	Tender leaves used for stomach disorder, warm decoction of fruits is used in stomach ache and also as vegetable, chutney and salad
<i>Solanum xanthocarpum</i>	kopir	Solanaceae	Shrub	Fruit	Expectorant, tooth-ache, cough, cold, respiratory problems
<i>Spilanthus acmella</i>	Marshang	Compositae	Herb	Leaves & flowers	Flower are chewed to cure tooth-ache
<i>Zanthoxylum armatum</i>	Ombe	Rutaceae	Tree	Leaves & fruits	Fruits are crushed, made into paste solution to prevent malaria
<i>Zanthoxylum rhetsa</i>	Onger	Rutaceae	Tree	Leaves	Tender leaves are used as vegetable. Infusion of seed mixed with <i>Allium sativum</i> and little salt is prescribed in case of stomach bloating and used as hair cleaning agent
<i>Sida acuta</i>	Holap	Malvaceae	Herb	Tender leaves	Tender leaves are cooked and eaten as vegetable
<i>Pouzolzia viminea</i>	Oyik (small leaf)	Urticaceae	Herb	Leaves	Is eaten as vegetable and it is considered by Adi tribe to increase lactation in women
<i>Pouzolzia hirta</i>	Oyik (big leaf)	Urticaceae	Herb	Leaves	Is eaten as vegetable and it is considered by Adi tribe to increase lactation in women
<i>Oxalis corniculata</i>	Phakep	Oxalidaceae	Herb	Whole plant	Whole plant is taken as vegetable, as anti dysentric and to relieve intoxication from wine
<i>Alocasia macorrhiza</i>	Engee	Araceae	Shrub	Rhizome	Pain reliever from insect bite
<i>Alpinia malaccensis</i>	Pupure	Zingiberaceae	Shrub	Rhizome	A piece of fresh rhizome is taken as anthelmintic
<i>Calamus erectus</i>	Tara	Arecaceae	Tree	Seed & tender shoot	Fresh seed are taken for dyspepsia. Tender shoot are taken as vegetable and anthelmintic
<i>Drymaria cordata</i>	Tayitoar	Caryophyllaceae	Herb	Whole plant	Fresh whole plant mixed with <i>Psidium guajava</i> fruit is taken in gastritis



Diplazium esculentum
(Takang)



Centella asiatica
(Kipum)



Begonia josephii
(Sisi baying)



Chenopodium album
(Gilimili)



Clerodendrum colebrookianum
(Ongin)



Eryngium foetidum
(Adiori)



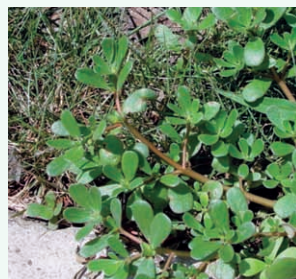
Houltuynia cordata
(Roram)



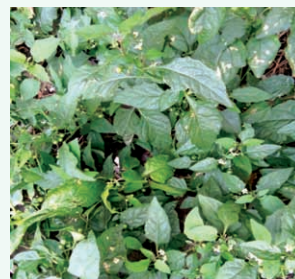
Mussaendra roxburghii
(Akshap)



Physalis minima
(Bodopatti)



Portulaca oleracea
(Guber oying)



Solanum nigrum
(Kopir)



Solanum torvum
(Kopir)



Solanum spirale
(Okobang)



Solanum xanthocarpum
(Kopir)



Spilanthes acmella
(Marshang)



Zanthoxylum rhetsa
(Onger)



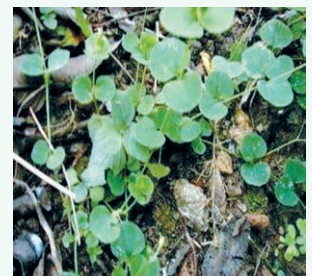
Pouzolzia hirta
(Oyik, big leaf)



Pouzolzia viminea
(Oyik, small leaf)



Oxalis corniculata
(Phakep)



Drymaria cordata
(Tayitoar)



Sida acuta (Holap)



Alocasia macrorrhiza (Engee)

of life in rural and forest dwelling people are more as compared to the urban and city dwellers owing to the daily physical work combined with all these medicinal doses they faced everyday as vegetables. The daily intake of herbal medicine in the form of vegetables might be one of the important reasons for the life longevity and less occurrence of the developed world killer ailments like cancer, diabetes, heart diseases.

The traditional knowledge of eating raw plants by adi tribe of pasighat (East Siang) Arunachal Pradesh as medicinal/ nutritional supplement in their diet is an age-old practice in this region of the state.

To conserve the above mentioned traditional knowledge, there is a need for scientific research and documentation in particular. Thus, collaborative research and integrated efforts are necessary to preserve the knowledge of indigenous people in traditional healthcare. Mass awareness programmes on usefulness of plants will be a basic tool for conservation and sustainable utilization of these natural resources. These efforts may help in upliftment of the rural economy as well as long-term

biodiversity conservation and security of the traditional healthcare system.

SUMMARY

The present investigation revealed only a fraction of traditional knowledge of plants used by the *Adis* of pasighat East Siang. An elaborate and long term study is required for understanding and documentation of traditional knowledge possessed by the *Adi* community and its cultural connection. It is also important to conserve the language and the traditional lifestyle to foster the ethnic knowledge for the next generation.

For further interaction, please write to:

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