



Ethnomedicine for cold and cough by the tribes of Srikakulam district, Andhra Pradesh

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Abstract

Ethnomedicinal survey of plants used for the treatment of cold and cough by the tribes of Srikakulam district, Andhra Pradesh, yielded 41 species covering 39 genera and 29 families. Lamiaceae and Euphorbiaceae with 3 species each are the dominant families followed by others. Herbs are dominant with 17 species followed by shrubs (9 spp) and others. Leaf is used in a maximum of 12 practices followed by fruits (6), and others. All the interesting as well as less known ethnic uses must be seriously taken-up by the researchers for scientific validation.

Keywords: Ethnomedicine, Cold and Cough, Tribes, Srikakulam district, Andhra Pradesh

1. Introduction

Nature has created plants in the world for every ailment and there is cure for every disease. World Health Organization estimates over 80% of the people in developing countries depend on traditional medicine for their primary health care. Srikakulam district is the northern most part of Andhra Pradesh state, located within 18°5' - 19°12'N and 83°32' - 84°47'E and bounded by Orissa state on the north and Bay of Bengal in the east and south-east and the Vizianagaram district in the west and south-west. Though ranking very low both in area (5837 sq km) and in density of population among the districts of Andhra Pradesh, possess considerably high density of tribal population in hilly and forest areas. The geographical area of the district is 5837 sq km and the forest area covers 70864.13 hectares. It is inhabited by 133, 239 tribal people comprising of 5.74 per cent of the total population (Census 2001). The tribal communities included in the present study are *Savara*, *Jatapu*, *Konda dora*, *Gadaba*, *Kuttiya* and *Yerukala*. Though there

are publications on cold and cough in different regions of India by different tribes (Punjani and Kumar, 2002; Suneetha *et al.*, 2009; Manjula and Reddi, 2016; Swamy and Reddi, 2017) yet exclusive studies on the tribes of Srikakulam district were not available thus necessitating the present study.

2. Materials and Methods

The ethnomedicinal data presented here is the outcome of a series of intensive field studies conducted over a period of five years (1997-2001) in 74 interior tribal pockets involving all tribal communities with good forest cover. In addition to the randomly selected informants in the field, tribal villages and shandies, 41 vaidhyas/medicine men have contributed their ethnomedicinal knowledge to the present study. The approaches and methodologies for ethnobotanical work suggested by Jones (1941) and Jain (1987, 1989) were followed. Each medicinal practice was cross checked with at least 4-5 informants. Every attempt was made to locate the medicinal plants and voucher specimens were collected in

both flowering and fruiting stages and herbarium specimens were prepared and deposited in the Herbarium of Botany Department (BDH) of Andhra University, Visakhapatnam.

2.1. Ethnology of the tribes

Savaras, one of the most primitive tribes largely depends on plant resources for their food, medicine and material culture. The name Savara is derived from a Sanskrit word. Their origin can be traced from Aithreya Brahamana of Rigveda, which mentions Savaras as sons of Viswamithra, the ancient Kshatriya sage. The facial profile is broad type and the language of Savaras belongs to Kol-mundo family of Austro-asiatic linguistic group.

Jatapu community is a civilized section of the Khonds. Jatapus live in symbiosis with Savaras, members of both the tribes either dwelling in adjoining villages or sharing the same village site. Their mother tongue is Kuvi, belongs to the Dravidian family of languages, but most of the Jatapus have adopted Telugu as their mother tongue.

Konda dora believe that they are the descendants of the Pandavas of Mahabharata and call themselves as Pandava rajas or Pandava doras. Their language is Konda, which belongs to the Dravidian family of languages. Most of them have forgotten their dialect and have adopted Telugu as their mother tongue.

Gadabas derive their community name either from river Godavari or from “Goda”, an Oriya word meaning a brook. Gadabas are of two linguistic groups, those who speak Gadaba belonging to the Dravidian family and those who speak “Gutob”, belong to Austro-asiatic family of languages.

Kuttiyas claim themselves to be descendants of Janaka, a mythological king of Ramayana. They are divided into a number of clans. The Kuvi language is spoken by them at home, while Telugu is used for inter-group communication.

Yerukalas derive their name from Eruku knowledge or acquaintance. The origin of the tribe tells how ‘Renuka’, who came to life with male head and came to be known as ‘Ellamma’,

the patron deity of the tribe. Some people depend on basket making while women wander from village to village as fortune tellers and as tattooists. They speak a mongrel dialect, which appears to be a mixture of Tamil, Telugu and Konkani. Yerukala is a patriarchal society and father is the head of the family.

The language among the tribes is traditionally passed on without a written document. On the basis of the structure of language the tribal dialects have been divided into groups namely Dravidian and Austric.

2.2. Organisation and leadership

The family is considered as the basic unit, and also give importance to larger kinship units like lineage. The people belonging to same lineage co-operate with each other in agricultural activities, socio-religious ceremonies and house construction etc. The tribal society is also patriarchal. The rule of residence of women after marriage is patrilocal. The status of woman in the society is elevated in many respects, she is responsible for quest for food, maintaining the offspring, etc. Savara woman does not change their lineage ever after marriage. Both men and women equally participate in collection of forest produce and in agricultural activities. Among the tribal groups of the district, village headman (*Vejjodu*) is the chief and he is assisted by the priest called *Jannodu* and *Purohit* called *Disari*. The property is transferred according to rules of inheritance prevailing in the respective tribes. In Jatapus, the eldest son inherits the parental properties where as in Savaras, all the sons inherit the properties in equal proportions. The tribes have their own Panchayats and Councils to solve their problems.

2.3. Occupation

The main occupation of these tribes is agriculture. Almost all tribal groups practice *podu* cultivation on the hill slopes and plough cultivation in plains. Apart from the cultivation of crops, they collect minor forest produce including honey for domestic use and for sale to support their family economy. Fishing is a leisure-time occupation and the tribes still use

the age-old tools like nets, hooks, fish-baits and also use piscicides of plant origin. Each tribe usually carries with him a knife and some times bow and arrows since his childhood, not only for hunting but also for self-protection. Hunting is a seasonal practice and they catch animals using a variety of traps, snares etc. The tribes rear pigs, cows, goats, fowl, etc., which play an important role in their economy. They make baskets, meal-plates, granaries, mats, brooms, ropes, firewood, etc., for their domestic use and to sell in shandies.

2.4. Food

The main source of food is rice, millets, pulses and wild edible plants. The produce of cultivated fields is insufficient and the tribes gather edible tubers, rhizomes, leaves, fruits, seeds, etc. from nearby forests in different seasons to supplement their food requirements. During summer, wild mangoes are collected in large quantities. The tribes make a kind of porridge called *Java* or *Ambali* from the processed kernels and use as a food substitute. They also prepare gruel from the powdered pith of *Caryota urens* and seeds of *Tamarindus indica*. Drinking toddy, arrack and smoking are common among the tribes irrespective of sex and age, especially during festivals, ceremonies and marriage celebrations. The *Ippasara* (alcoholic drink prepared from the flowers of *Madhuca longifolia*) is a much prized one. Toddy tapped from *Borassus flabellifer*, *Caryota urens* and *Phoenix sylvestris* is commonly taken as food drink. Bamboo sprouts are a popular food for the tribes during rainy season. The Savaras and Khonds eat snakes, except python which they believe to be their deity.

2.5. Customs

Culturally all tribes are not at the same level of development. Each tribal community has a separate entity maintaining its social distance from other tribes on grounds of traditional degree of social prestige. Every tribe celebrates a festival with a series of ceremonies and sacrifices at the beginning of an economic activity and also before harvesting the agricultural produce. They offer sacrifice to their Gods and Goddesses for

better yield of crops and protection from diseases and calamities. The religion of tribal communities is a mixture of Animism and Hinduism and includes numerous deities and devils.

The tribal marriages are marked by feast and dance. The bride's price known as *Oli*, is usually paid to the bride's parents by bridegroom is common among all tribes. The amount varies from one tribe to another, on the basis of their economic status. Polygamy and child marriages are observed among the tribes but rather uncommon. Divorce is sanctioned only after the payment of compensation, the remarriage to widows and widowers is allowed. Mates are acquired by various means through negotiations, mutual consent, service and capture. The marriage within the same lineage is prohibited. One peculiar aspect found among the tribes is that the bride is usually elder to the bridegroom. All tribes participate in community dances during festivals, marriages and cultural activities and also during full moon days. Usual form of dance they perform is called *Dhimsa* and it is a visual feast to watch. Playing musical instruments is one of their chief activities of amusement. Every tribe has its own type of music prescribed for different seasons and occasions. The Savara wall paintings are done in white on the red-ochre washed clay walls of tribal huts. The Savara artist is magician-priest (*Kuranmaran*), who draws *Ittal* a ritual fertility diagram. The dead are generally cremated, whereas in Jatapus, adults are cremated and children are buried and the death rites are held on any day after the third day of death. *Limma*, a death rite is observed on the fourth day and another mortuary rite *Guar*, is observed later by Savaras. Gadaba bury the dead and a pollution period is observed for nine days followed by ancestral worship on tenth day.

2.6. Beliefs and treatment of diseases

The aborigines believe that death, disease and natural calamities are caused by Gods and malevolent action of evil spirits, due to breach of some taboo. They worship deities with neem leaves and turmeric water and offer goats, buffaloes and fowl as sacrifice. They generally

depend on priests, sorcerers and herbalists for curing their ailments or diseases. Plants play an important role in their medical-lore. According to priests and herbalists, the time of collection, mode of preparation of the drug etc. are very important. The dosage varies depending upon the intensity of the disease as well as the age of the person. Most of the drug preparations are either single or in combination of plant products and occasionally with animal products and minerals.

3. Results and Discussion

3. 1. Enumeration

The plants are enumerated alphabetically with valid botanical name followed by family and vernacular (VN) and English names, locality, voucher number, part(s) used. Each ethnomedicinal practice is provided with the method of preparation of drug and mode of administration and dosage. Plants and practices marked with an asterisk (*) are considered to be new or less known.

Abrus precatorius L. Fabaceae VN: Gulivinda E: Indian liquorice, Kadangandi, 1465, Leaf

Cough: Leaves are chewed for curing cough and other throat troubles in the morning.

Acacia sinuata (Lour.) Merr. Mimosaceae VN: Seekaya E: Soapnut acacia, Kuppili, 1449, Leaf

***Cough:** 1 spoonful of leaf extract is taken orally twice a day in the morning and evening.

Acalypha indica L. Euphorbiaceae VN: Muripindi E: Indian acalypha, Donubai, 1016, Whole plant

Cough: Whole plant extract is administered in 1 teaspoonful twice a day for 3 days.

Acorus calamus L. Araceae N: Vasa E: Sweet flag, Polla, 1079, Rhizome

***Cold:** A pinch of roasted powder of rhizome with honey is given in the morning for 3 days.

Aegle marmelos (L.) Correa Rutaceae VN: Maredu E: Bael tree, Tankidi, 1174, Leaf

Cold: Leaf juice is poured into nostrils.

Allium cepa L. Alliaceae VN: Vulli E: Onion, Chekkapuram, 1247, Bulb

Cough: 5 ml of onion juice mixed with equal amount of honey is taken orally 3-4 times a day for 2-3 days to get relief from cough and sore throat.

Aloe vera (L.) Burm.f. Agavaceae VN : Kalabanda E: Indian aloe, Siripuram, 1304, Leaf

***Cough and cold:** 2 teaspoonful leaf pulp fried with little ghee is eaten with jaggery thrice a day for 3 days.

Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Perr. Combretaceae VN: Chiru manu E: Axle wood, Gummada, 1456, Stem bark

Cough: Stem bark extract is administered in 3 spoonful twice a day for 3 days.

Artemisia vulgaris L. Asteraceae VN: Machapatri E: Indian worm wood, Mekhawa, 1118, Leaf

***Whooping cough:** Few drops of the leaf juice is given orally.

Carissa spinarum L. Apocynaceae VN: Vaka E: Bush plum, Goidi, 1229, Fruits, Flowers

Cough: Immature fruits and flowers are consumed in the morning on empty stomach for about 9 days.

Cassia occidentalis L. Caesalpinaceae VN: Kasinda E: Stinking weed, Jayapuram, 1562, Seed

***Cough:** Seeds are boiled with water and strained. The extract is taken in 4 teaspoonful thrice a day for 2 days.

Celastrus paniculatus Willd. Celastraceae VN: Palleru tivva E: Black oil tree, Gujji, 1109, Seed

Cough and cold: Aqueous extract of the powdered seed mixed with jaggery and red chillies are taken twice a day for 5 days.

Cochlospermum religiosum (L.) Alston Cochlospermaceae VN: Kondagogu E: Karaya gum, Velagawada, 1695, Gum

Cough: 10 g of gum extracted from stem is dissolved in half glass of water and taken once a day for 5 days.

Crinum asiaticum L. Amaryllidaceae VN: Chengalva E: Poison bulb, Chandramma ghat, 1504, Leaf

Cough: 1 teaspoonful warm leaf juice is administered once a day for 3 days.

Curcuma longa L. Zingiberaceae VN: Pasupu E: Turmeric, Vennelavalasa, 1232, Rhizome

Cough and cold: Half a teaspoonful of fresh turmeric powder mixed in 30 ml of warm milk is given for effective cure.

Dioscorea bulbifera L. Dioscoreaceae VN: Nallagadda E: Air potato, Samarelli, 1403 Rhizome

Cough and cold: About 10 g of fresh rhizome is chewed twice a day for 3 days.

Diospyros melanoxylon Roxb. Ebenaceae VN: Tumiki chettu E: Coromandel ebony, Malli, 1674, Stem bark

Cough and cold: Extract of stem bark mixed with jaggery is administered in 1 teaspoonful twice a day till cure.

Eclipta prostrata L. Asteraceae VN: Guntakalavaraku E: Trailing eclipta, Sarubujjili, 1193, Whole plant

Cough: Whole plant is crushed into an extract. 2 teaspoonful of this extract with equal quantity of honey is administered twice a day for 4-6 days.

Euphorbia tirucalli L. Euphorbiaceae VN: Kadajamudu E: Round milk hedge, Veeraghattam, 1888, Stem

Cough and cold: 3-5 drops of stem juice is administered with milk once a day before bed time for 3 days.

Glycosmis pentaphylla (Retz.) DC. Rutaceae VN: Gulimi E: Orange berry, Mahadeva valasa, 1900, Root bark

Cough and cold: Root bark extract mixed with a spoonful of honey is taken once a day for 3 days.

Helicteres isora L. Sterculiaceae VN: Chamalanara E: Bastard cedar, Kotada, 1954, Fruit

Cough: 1 spoonful of fruit decoction is administered once a day till cure.

Justicia adhatoda L. Acanthaceae VN: Addasara E: Malabar nut tree, Kotturu, 2118, Leaf

***Cough and cold:** Leaves with roots of *Solanum surattense* and fruits of *Piper longum* taken in equal proportions are made into powder and taken with honey in 1 spoonful dose twice a day for about a week, to get relief.

Kalanchoe pinnata (Lam.) Pers. Crassulaceae VN: Gurrelamasalakura E: Life plant, Budumuru, 1610, Leaf

Cough: A single raw leaf is taken per day on empty stomach in the morning for about 7 days to get relief.

Leptadenia reticulata (Retz.) Wight & Arn. Asclepiadaceae VN: Tummudutheega E: Jivanti, Jaganna dhapuram, 1734, Latex

Cold: Latex is inhaled.

Leucas cephalotes (Roth) Spreng. Lamiaceae VN: Tumbikura E: Spider wort, Sastrulu peta, 2139, Flower

Cough and cold: Flower juice and jaggery are made into syrup and administered in doses of 2 spoonful thrice a day for 3 days.

Ocimum tenuiflorum L. Lamiaceae VN: Tulsi E: Holy basil, Devarakonda, 1090, Leaf

***Cough:** About 5 ml of leaf juice with 1 ml juice of ginger is administered in doses of 2 spoonful with honey twice a day for 4 days as an expectorant.

Phyla nodiflora (L.) Greene Verbenaceae VN: Mosalipappu E: Frog fruit, Sankili, 1537, Whole plant

***Cough and cold:** Squeezed whole plant juice is inhaled.

Phyllanthus emblica L. Euphorbiaceae VN: Boddamla E: Indian gooseberry, Dibbaguda, 1722, Fruit

Cough and cold: Decoction prepared from the fresh fruit along with roots of *Cyperus rotundus* and stem of *Tinospora cordifolia* mixed with honey is given frequently.

Pimpinella heyneana (DC.) Benth. Apiaceae
VN: Adivi jeelakarra E: Chir pine, Anetipeta,
1634, Seed

Cough: Decoction of seeds in doses of 5
spoonful twice a day is given for 5 days.

Piper longum L. Piperaceae VN: Pippali E:
Long pepper, Sorilingam, 1096, Seed

Cough: 2 to 3 spoonful of decoction made
from the long pepper and *Justicia adhatoda* is
given thrice a day for 3 days.

Piper nigrum L. Piperaceae VN: Bonpippal
E: Black pepper, Jadupalli, 1631, Leaf

Cough and cold: The leaf juice is given in
doses of 2 spoonful twice a day for 5 days.

Plectranthus amboinicus (Lour.) Spreng.
Lamiaceae VN: Vamu aaku E: Country borage,
Antharaba, 1474, Leaf

Cough: Leaf juice mixed with honey is given
in doses of 2 spoonful twice a day for 10 days.

Pterolobium hexapetalum (Roth) Sant.&
Wagh Caesalpiniaceae VN: Korindakampa E:
Indian redwing, Altiv, 1755, Stem bark

***Cough:** 1 spoonful of stem bark decoction
is administered twice a day for 5 days to treat
whooping cough in case of infants.

Solanum nigrum L. Solanaceae VN:
Kamanchi E: Black night shade, Rugada, 2117,
Fruit

Cough: 6 ripe fruits are chewed and given
2-4 times a day with an interval of 3-4 h for 2
days for children suffering from severe cough as
an expectorant.

Solanum torvum Sw. Solanaceae VN: Vusti
E: Devil's fig, Pedalogidi, 2127, Fruit, Leaf

***Cough:** The decoction of the fruit and leaves
are given in doses of 2 spoonful twice a day for
3 days.

Syzygium cumini (L.) Skeels Myrtaceae VN:
Jinna E: Indian cherry, Baleru, 1994, Stem bark

Cough: Stem bark extract is given in doses of
2 spoonful twice a day for 5 days.

Terminalia chebula Retz. Combretaceae
VN: Karaka chettu E: Black myrobalan,
Marripadu, 2381, Stem bark

***Cough:** 20 g of stem bark paste is taken with
1 glassful of hot water and administered once a
day for 3 days.

Tinospora cordifolia (Willd.) Miers
Menispermaceae VN: Minaptheega E: Gulancha
tinospora, Tivvakonda, 2330, Root

Cough: 1 spoonful of crushed root with milk
is given in the morning to children till cure.

Trichosanthes tricuspidata Lour.
Cucurbitaceae VN: Aguda E: Bitter snake-gourd,
Kannayyapeta, 2411, Fruit

Cough: Epicarp of fruit mixed with breast
milk and honey, made into paste given orally to
infants twice a day for 3 days.

Zingiber officinale Roscoe Zingiberaceae
VN: Allamu E: Ginger, Devupuram, 2172,
Rhizome

Cough: About 1 spoonful of rhizome juice
mixed with an equal quantity of cow butter, is
warmed and massaged on the chest and throat for
4 days before bed time for relief.

Zornia gibbosa Span. Fabaceae
VN: Dummakoloth E: Grasslike zornia,
Savaragovindapuram, 1936, Whole plant

***Cold:** Whole plant is dried and powdered.
Half spoonful of this powder in a cup of water is
administered twice a day for 5 days.

The present study deals with 41 species of
plants covering 39 genera and 29 families used
by the tribes of Srikakulam district for curing
cold and cough. Lamiaceae and Euphorbiaceae
are the dominant families with 3 species
each followed by Fabaceae, Caesalpiniaceae,
Rutaceae, Combretaceae, Asteraceae, Solana-
ceae, Piperaceae, Zingiberaceae (2 each) and
others with one species each. Habit-wise analysis
showed the dominance of herbs with 17 (41.46%)
species followed by shrubs (9 spp, 21.95%), trees
(8 spp, 19.51%) and climbers (7 spp, 17.07%).
Morphological analysis showed the maximum
utilization of leaf in 12 practices followed by
fruits (6), stem bark (5), whole plant, rhizome,
seed (4 each), flower (2), bulb, root, root bark,
stem, latex and gum in one practice each. They
are administered either in the form of powder,

paste, juice, extract, decoction or syrup, along with either water, hot water, milk, honey, jaggery, chillies or ginger. 12 practices were found to be new or less known (Jain, 1991; Kirtikar and Basu, 2003). Plants used for similar purpose in different parts of India, Nepal, Bangladesh, Pakistan and Nigeria are *Kalanchoe pinnata* by *Katkari*, *Kokana*, *Mahadeo koli*, *Thakar* and *Warli* tribes of Western Maharashtra (Upadhye *et al.*, 1994); *Allium cepa*, *Solanum torvum* by the *Bini* people of Nigeria (Gill *et al.*, 1997); *Curcuma longa*, *Eclipta prostrata*, *Euphorbia tirucalli*, *Leptadenia reticulata*, *Ocimum tenuiflorum*, *Phyllanthus emblica*, *Piper longum*, *Solanum nigrum*, *S. torvum*, *Tinospora cordifolia* by the *Yanadi*, *Nakkala*, *Irula*, *Yerukula*, *Sugali/Lambadi* and *Chenchu* tribes of Chittoor district, Andhra Pradesh (Vedavathy *et al.*, 1997); *Aloe vera* in Kachchh region of Gujarat (Chandra-Shekhar and Rana, 2000); *Anogeissus latifolia*, *Curcuma longa*, *Leucas cephalotes*, *Zingiber officinale* by *Bhil*, *Garasia*, *Nayaka*, *Dhanka* tribes of Aravalli ranges in North Gujarat (Punjani and Kumar, 2002); *Justicia adhatoda*, *Terminalia chebula*, *Zingiber officinale* by the people of Arghakhanchi district, Nepal (Panthi and Chaudhary, 2003); *Justicia adhatoda* by *Kandha* tribe of Kandhamal district, Orissa (Behera *et al.*, 2006); *Eclipta prostrata*, *Phyllanthus emblica*, *Solanum nigrum* by *Bhar* tribe of Gonda district, Uttar Pradesh (Upadhyay and Singh, 2007); *Cassia occidentalis*, *Helicteres isora*, *Ocimum tenuiflorum*, *Piper nigrum*, *Zingiber officinale* by the *Mullu kuruma* tribe of Wayanad district, Kerala (Silja *et al.*, 2008); *Acalypha indica*, *Cochlospermum religiosum*, *Euphorbia tirucalli*, *Glycosmis pentaphylla*, *Justicia adhatoda*, *Leucas cephalotes*, *Ocimum tenuiflorum*, *Piper longum*, *Terminalia chebula*, *Tinospora cordifolia* by *Konda reddi*, *Konda dora*, *Konda kammara*, *Konda kapu*, *Manne dora* and *Valmiki* tribes of East Godavari district, Andhra Pradesh (Suneetha *et al.*, 2009); *Acalypha indica* by the *Chakma*, *Marma*, *Tripura* tribes of Chittagong Hill tracts of Bangladesh (Biswas *et al.*, 2010); *Acalypha indica*, *Cassia occidentalis*, *Phyllanthus emblica*, *Piper longum*, *P. nigrum*,

Solanum torvum, *Syzygium cumini*, *Terminalia chebula*, *Tinospora cordifolia*, *Zingiber officinale* by the people in 10 districts of southern region and one district of northern region of Karnataka (Shiddamallayya *et al.*, 2010); *Terminalia chebula* by *Gond* tribe of Bhandara district (Gupta *et al.*, 2010); *Pawara*, *Bhil* and *Pardhi* tribes of Dhule and Jalgaon districts (Jain *et al.*, 2010); *Eclipta prostrata* by *Bhilla* tribe (Kamble *et al.*, 2010) of Maharashtra; *Tinospora cordifolia* by *Santhal*, *Kolha*, *Bathudi*, *Kharia*, *Mankidia*, *Gond*, *Ho* tribes of Mayurbhanj district, Orissa (Rout and Panda, 2010); *Dioscorea bulbifera* by the rural communities of Shahjahanpur district, Uttar Pradesh (Sharma *et al.*, 2010); *Acorus calamus* by the *Malasar* tribe of Western Ghats, Tamil Nadu (Murugesan *et al.*, 2011); *Zingiber officinale* by the *Tangkhu-Naga* tribe in Ukhrul district, Manipur (Salam *et al.*, 2011); *Terminalia chebula* by *Jaunsari* tribes of Tons Valley, Uttarakhand (Bartwal *et al.*, 2011); *Abrus precatorius* by the local people of Garhwal Himalaya (Jagwan *et al.*, 2011); *Aegle marmelos*, *Aloe vera*, *Curcuma longa*, *Zingiber officinale* by *Bhil* tribe of Ratlam district, Madhya Pradesh (Jadhav, 2012); *Aegle marmelos*, *Terminalia chebula* by the rural people of Bangladesh (Baul and Mohiuddin, 2012); *Cassia occidentalis*, *Celastrus paniculatus*, *Solanum nigrum*, *Terminalia chebula* by the local people of Mandi district, Himachal Pradesh (Sen and Samant, 2013); *Justicia adhatoda* by the *Kondh*, *Gond*, *Saura*, *Mirdhas*, *Munda*, *Kharia*, *Kora*, *Kolha* tribes of Boudh (Sahu *et al.*, 2013) and *Sahanra*, *Binjhal*, *Kondh*, *Gond* tribes of Bargarh districts (Sen and Behera, 2016) of Odisha; *Phyla nodiflora* by *Gond* tribe of Korba district, Chhattisgarh (Gond *et al.*, 2014); *Pterolobium hexapetalum* by *Chenchu*, *Sugali* tribes of Nallamalais, Andhra Pradesh (Saheb, 2014); *Solanum nigrum* by the people of Koont research farm, Rawalpindi, Pakistan (Qureshi *et al.*, 2014); *Justicia adhatoda*, *Piper longum* by *Gond*, *Madia*, *Pardhan* and *Kanwar* tribes of Gadchiroli district, Maharashtra (Bhogaonkar and Saudagar, 2015); *Cassia occidentalis* by the *Agaria*, *Baiga*, *Basor*, *Bharia*, *Bhil*, *Gond*,

Halba, Kanjar, Khaiwar Kol, Kondar, Korku, Pao, Madia, Mawasi, Mobasi, Oroan, Sahariya and Sor tribes of Madhya Pradesh (Jadhav, 2015); *Euphorbia tirucalli, Piper nigrum, Solanum torvum, Tinospora cordifolia, Zingiber officinale* by the *Koya, Lambada, Gond/Naikpod, Yerukula, Nayak and Konda reddy* tribes of Khammam district, Andhra Pradesh (Manjula and Reddi, 2016)); *Leucas cephalotes* by the rural folk of Bhagalpur district, Bihar (Singh, 2016) and *Justicia adhatoda, Abrus precatorius, Acacia sinuata, Cassia occidentalis, Leucas cephalotes, Phyla nodiflora, Terminalia chebula, Zornia gibbosa* by the *Gond, Kolam, Koya, Lambada, Manne, Naikpod, Pradhan, Thoti and Yerukala* tribes of Adilabad district, Andhra Pradesh (Swamy and Reddi, 2017); *Ocimum tenuiflorum, Piper nigrum, Zingiber officinale* by *Kutia-Kandha* tribe of Odisha (Sajan *et al.*, 2017).

4. Conclusion

Indian subcontinent is very rich in the tribal population as well as in the vegetation cover making it a hotspot for ethnobotanical studies. The rich heritage, traditions and Traditional Knowledge (TK) and ancient culture have provided it an added advantage for the bio-prospection. From the above study it has been observed that all the new, interesting as well as less known ethnic uses must be seriously taken-up by the researchers for the scientific validation and in case new leads are found, should be pursued further for the value addition.

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