

# Ethnomedicine for fevers by the tribes of Visakhapatnam district, Andhra Pradesh

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## Abstract

The paper deals with 66 species of plants covering 62 genera and 38 families used by the tribes of Visakhapatnam district for curing fevers under 75 practices. Leguminosae is the dominant family with 10 species followed by Apocynaceae (6 spp), Lamiaceae (5 spp) and others. Habit-wise analysis showed the dominance of herbs with 23 species followed by trees (19 spp), shrubs (16 spp) and others. Root is used in most of the practices (28) followed by leaf (19), stem bark (13) and others. *Polyalthia suberosa* and 27 practices were found to be new.

**Keywords:** Andhra Pradesh, Ethnomedicine, Fevers, Visakhapatnam district, Tribes

## Introduction

Out of all forms of diseases, *Jvara* (fever) is the most significant one. Hence, treatment of fever must begin before attending to any other complaint of the ailment or disease. Body temperature rises due to derangement of heart regulating mechanism in the brain. The rise in body temperature above 99° F is called fever. It generally occurs due to the infections by virus, bacteria, protozoa and other microorganisms that produce pyrogens. Most traditional medical systems believe that fever is not a disease by itself but symptoms of some other diseases (Mishra, 2009). Herbal antipyretic agents are favored over the chemical ones for their compatibility to the human physiological system, easy availability of the rich knowledge about the traditional healing systems. Though fever is the most common disease among the tribes of India, exclusive publications on fever alone are not many (Vedavathy & Rao 1991, Aminuddin *et al.*, 1993; Singh & Kumar, 1999; Goud *et al.*, 1999; Chhetri, 2004; Tomar, 2007; Mishra, 2009;

Naidu *et al.*, 2009; Naidu *et al.*, 2010; Manjula *et al.*, 2014) necessitating the present study.

## Material And Methods

Visakhapatnam district is situated on the north eastern part of Andhra Pradesh. It lies between 17°-34' 11" and 18° - 32' 57" northern latitude and 83°-51' 49" and 83°-16' 9" eastern longitude situated on the hilly areas known as agency area covering 6, 298 sq km i.e., 56.4% of the total geographical area of the district. As per 20011 census its population is 4, 290,589 of which the tribes include 618, 500 comprising 14.42 per cent of the total population. The district occupies first position with regard to tribal population in the re-organized state. The predominant tribes are *Bagata, Gadaba, Goudu, Khond, Konda dora, Konda kammara, Kotia, Mali, Mukha dora, Porja* and *Valmiki*.

The ethnomedicinal data presented here are the outcome of a series of intensive field studies conducted during 2005-2007 in 88 representative

interior tribal pockets with good forest cover. The field trips were planned in such a way so as to cover all the seasons in a year. Each field trip was of 7-12 days duration covering 4-5 pockets in a day. Initial study trips were utilized to know more about the land and people and collect plants for taxonomic identification. After establishing good rapport with the tribes, the utility of plants, detail methods of uses were documented. Data collected were cross-checked with the data obtained from same as well as on different settlement on different occasions for authenticity. The plant specimens were identified using the Flora of the Presidency of Madras (Gamble, 1915-1935) and the Flora of Visakhapatnam (Rao and Kumari, 2008). Voucher specimens were deposited in the Herbarium of the Department of Botany (BDH), Andhra University, Visakhapatnam.

### Enumeration

The plants are arranged in alphabetical order with botanical name followed by family, vernacular and English names, part(s) used, voucher number, method, mode and duration of treatment and tribe collected. Less known or new practices are marked with an asterisk (\*).

***Acacia torta*** (Roxb.) Craib. (Leguminosae: Mimosoideae) VN: Korinthachekka E: Twisted acacia, Stem bark, MHB, 4001

\*Fever: 2 spoonful of stem bark extract with 10 g of jaggery is administered twice a day for 3 days. (*Valmiki*)

***Achyranthes aspera*** L. (Amaranthaceae) VN: Kukkapallu chettu E: Prickly chaff flower, Leaf, MHB, 3395

\*Fever: 21 leaves are ground with seeds of *Piper nigrum* and 2 spoonful of paste is administered with a glass of hot water daily

twice for 2 days. (*Gadaba*)

Fever (Evil spirits): 5 spoonful of leaf juice is administered only once. (*Khond*)

***Acorus calamus*** L. (Araceae) VN: Vasa E: The Sweet flag, Rhizome, MHB, 2653

Fever: 2 spoonful of rhizome or leaf paste is administered with a glass of water only once to keep off evil spirits. (*Bagata*)

Fever (Evil spirits): Rhizome paste is applied over the body. (*Goudu*)

***Ailanthus excelsa*** Roxb. (Simaroubaceae) VN: Peddamanu E: Tree of heaven, Stem bark, MHB, 4127

\*Fever with shivering and typhoid: Stem bark with root bark of *Cissampelos pareira*, leaves of *Momordica charantia*, seeds of *Cuminum cyminum*, bulbs of *Allium sativum* are taken in equal quantities and ground. Paste is made into pills of red gram seed size. Two pills are administered once a day for 3 days early in the morning before breakfast. (*Gadaba*)

***Andrographis paniculata*** (Burm. f.) Wall. (Acanthaceae) VN: Nelavemu E: King of bitters, Leaf, MHB, 3465

Fever: A spoonful of dry leaf powder mixed in half glass of hot water is administered twice a day for 3 days. (*Khond*)

***Azadirachta indica*** Juss. (Meliaceae) VN: Vepa E: Margosa tree, Leaf, MHB, 3138

Fever with shivering: Leaves with rhizome of *Zingiber officinale*, seeds of *Coriandrum sativum* and bulbs of *Allium sativum* are taken in equal quantities and ground. Two spoonful of paste is mixed in a glass of water and boiled, then cooled. The decoction is

administered daily twice for 3 days. (*Konda dora*)

Fever (Evil spirits): The body is exposed to smoke with the burnt leaves only once. (*Gadaba*)

***Bixa orellana*** L. (Bixaceae) VN: Jaffra E: Annatto plant, Root, MHB, 4445

\*Fever: A spoonful of root extract is administered twice daily for 2 days. (*Kotia*)

***Bridelia retusa*** (L.) A. Juss. (Euphorbiaceae) VN: Anemu E: Spinous Kino tree, Stem bark, MHB 3995

\*Fever: 50 gm of stem bark is ground with 5 or 6 seeds of *Piper nigrum* and made into pills of red gram seed size. Two pills are administered once a day for 2 days. (*Khond*)

***Caesalpinia pulcherrima*** (L.) Sw. (Leguminosae: Caesalpinioideae) VN: Turaichettu E: Peacock flower, Leaf, MHB, 4234

\*Fever: A spoonful of leaf juice mixed in half glass of hot milk is administered once a day for 3 days. (*Bagata*)

***Calotropis procera*** Br. (Apocynaceae: Asclepiadoideae) VN: Tellajilledu E: Swallow-wort, Root, MHB, 2755

Intermittent fever: The patient has to wear a piece of root around his neck for 21 days (root is collected from the ant hill on full moon day). (*Gadaba*)

\*Malaria: 20 gm of root is ground along with 3 spoonful of goat milk and made into pills of red gram seed size. One pill is administered thrice a day for 3 days. (*Mali*)

***Capsicum frutescens*** L. (Solanaceae) VN: Seemamirapa E: Golkonda chillies, Leaf, MHB, 3075

Fever (Evil spirits): 3 tender leaves are ground along with 3 tender leaves of *Leucas aspera*. Two or three drops of the extract is instilled into the eye once a day. (*Goudu*)

***Carissa carandas*** L. (Apocynaceae) VN: Peddavaka E: Karanda, Root, MHB, 3719

Fever: A spoonful of root powder mixed with half spoon of honey is administered twice a day for 2 days. (*Khond*)

***Cassia fistula*** L. (Leguminosae: Caesalpinioideae) VN: Rela E: Indian laburnum, Root, MHB, 2711

Fever: A spoonful of root powder with a glass of hot water is administered twice a day for one day. (*Gadaba*)

***Celastrus paniculatus*** Willd. (Celastraceae) VN: Jyothishmathi E: Black oil tree, Stem bark, Fruit, MHB, 3859

Malaria: Dried stem bark or dried fruit powder is made into pills of soap nut seed size. Two pills are administered with hot water twice a day for 4 days. (*Konda dora*)

***Citrus aurantifolia*** (Chr.) Sw. (Rutaceae) VN: Narinja E: Acid Lime, Fruit, MHB, 2898

High fever: 3 spoonful of fruit juice with a spoonful of sugar and a pinch of salt is administered twice a day for 2 days. (*Gadaba*)

***Cleome aspera*** Koen. ex DC. (Cleomaceae) VN: China ventukura E: Asian spider flower, Whole plant, MHB, 3766

\*Fever: A spoonful of whole plant juice with half spoon of honey is administered twice a day for 2 days. (*Bagata*)

***C. gynandra*** L. (Cleomaceae) VN: Ventumkura E: Stink weed, Root, MHB, 3292

Fever: A spoonful of root juice mixed in half glass of hot water is administered twice a day for 2 days. (*Kotia*)

**C. viscosa** L. (Cleomaceae) VN: Kukkavaminta  
E: Wild mustard, Leaf, MHB, 4038

Fever: A spoonful of leaf juice mixed in a glass of hot water is administered daily twice for 2 days. (*Goudu*)

**Curculigo orchoides** Gaertn. (Hypoxidaceae)  
VN: Chukka gadda E: Black muscale, Root, MHB, 2547

Fever (Evil spirits): Tuberous root paste mixed with root powder of *Hemidesmus indicus* is applied over the body only once to ward off evil spirits. (*Gadaba*)

**Curcuma aromatica** Salisb. (Zingiberaceae)  
VN: Kasthuridumpa E: Wild turmeric, Rhizome, MHB, 3122

Fever (Evil spirits): A spoonful of rhizome juice mixed with water is administered twice a day. Meanwhile, a spoonful of juice is applied on the scalp only once to keep off evil spirits. (*Mali*)

Fever (Evil spirits): 2 spoonful of rhizome juice is administered with a glass of hot water twice a day. (*Konda dora*)

**Cyclea peltata** Hook. f. & Thw. (Menispermaceae) VN: Chantimaal E: Raj patha, Root, MHB, 2550

\*Fever: 10 gm of root paste mixed with a glass of hot water is administered twice a day for 4 days. (*Khond*)

**Cynodon dactylon** (L.) Pers. (Poaceae) VN: Garikagaddi E: Bahama grass, Inflorescence, MHB, 2615

\*Fever with shivering: Inflorescence is

boiled in water and 4 spoonful of it along with stem barks of *Bambusa arundinacea* and *Gmelina arborea* is administered twice a day for 2 days. (*Porja*)

**Desmodium gangeticum** (L.) DC.  
(Leguminosae: Faboideae) VN: Bhumiippa  
E: Geethanaram, Root, MHB, 4439

Malaria: 2 spoonful of root paste mixed in a glass of buttermilk is administered daily twice for 5 days. (*Bagata*)

**Drynaria quercifolia** (L.) Sm. (Polypodiaceae)  
VN: Kalantibhed E: Oak leaf fern, Rhizome, MHB, 3146

Fever (Evil spirits): 30 g of rhizome is ground along with 20 gm of roots of *Elephantopus scaber* and the paste is applied on the head for an hour once a day for 4 days. (*Mukhadora*)

**Ehretia laevis** Roxb. (Boraginaceae) VN: Gidigirichettu E: Ivory wood, Leaf, MHB, 2944

\*Fever: 2 spoonful of leaf paste is administered with a glass of water twice a day for 2 days.

**Elephantopus scaber** L. (Asteraceae) VN: Edduadugu E: Prickly leaved elephantous foot, Root, MHB, 4245

\*Typhoid: Root with root of *Rauvolfia serpentina*, rhizome of *Acorus calamus* and rhizome of *Curcuma aromatica* are taken in equal quantities and ground. Two spoonful of this paste is administered with a glass of water twice a day for 3 days. (*Gadaba*)

**Eleusine coracana** (L.) Gaertn. (Poaceae) VN: Chollu E: Finger millet, Seed, MHB, 3151

Intermittent fever: The bread made from

the grains is tied around the neck with rope made from the stem of *Ficus racemosa* for 3 days. (*Bagata*)

***Elytraria acaulis*** (L. f.) Lind. (Acanthaceae) VN: Doodh chettu E: Asian scaly stem, Root, MHB, 4419

Intermittent fever: 5 cm long root is tied with thread and wear as a chain around the neck till cure. (*Khond*)

A spoonful of root paste is administered with a glass of water before breakfast once a day for 5 days. (*Goudu*)

***Erythrina variegata*** L. (Leguminosae: Faboideae) VN: Baradapu E: Indian coral tree, Stem bark, Root, MHB, 3363

Fever: Stem bark with that of *Oroxylum indicum* and rhizome of *Acorus calamus* taken in equal quantities are ground. Paste mixed in water is applied on the body twice a day. (Note: Should not be consumed. If consumed, will cause diarrhoea). (*Bagata*)

Fever (Evil spirits): Root or stem bark is kept in front of the house to ward off evil spirits. (*Mali*)

***Eucalyptus globulus*** Labil. (Myrtaceae) VN: Euklischettu E: Eucalyptus, Stem bark, MHB, 2622

Fever (Evil spirits): Stem bark with those of *Pongamia pinnata* and *Jatropha curcas* taken in equal quantities are ground. Paste is applied all over the body only once. (*Gadaba*)

***Evolvulus alsinoides*** L. (Convolvulaceae) VN: Neelampuvvu E: Dwarf morning glory, Leaf, MHB, 3835

Fever and migraine: Leaf paste is applied on

the head for 12 h only once. (*Kotia*)

***Ficus hispida*** L. f. (Moraceae) VN: Pala bodda E: Wild fig, Stem, MHB, 4503

Intermittent fever: Stem fiber is made into a chain and worn around the neck of children till cure. (*Konda dora*)

***Flacourtia indica*** (Burm. f.) Merr. (Flacourtiaceae) VN: Mandiakodi E: Governor's plum, Leaf, MHB, 3562

Typhoid: 2 spoonful of leaf juice mixed in half glass of hot water is administered daily twice for 3 days. (*Goudu*)

***Gymnema sylvestre*** (Retz.) R. Br. ex Schult. (Apocynaceae: Asclepiadoideae) VN: Podapathri E: Periploca of the wood, Root, Leaf, MHB, 3471

\*Malaria: A spoonful of root or leaf juice is administered once a day for 5 days. (*Bagata*)

***Hibiscus micranthus*** L. f. (Malvaceae) VN: Nithyamalle E: Tiny flower hibiscus, Root, MHB, 4460

Fever: A spoonful of root paste is administered twice a day till cure. (*Khond*)

***Holarrhena pubescens*** (Buch.-Ham.) Wall. ex G. Don (Apocynaceae) VN: Akupaala E: Ivory tree, Stem, MHB, 2746

Fever (Evil spirits): Stem with roots of *Hemidesmus indicus* and *Senna auriculata* are taken in equal quantities and ground with 5 seeds of *Piper nigrum*. Two spoonful of paste mixed with a spoonful of blood of cock is administered once a day for 3 days. (*Gadaba*)

***Hyptis suaveolens*** (L.) Poit. (Lamiaceae) VN: Gondrudal E: Hyptis, Root, MHB, 4471

Fever: Root paste is applied on the forehead

and bandaged only once. (*Goudu*)

***Jatropha curcas*** L. (Euphorbiaceae) VN: Apalchettu E: Barbados nut, Root, MHB, 3546

Fever (Evil spirits): Root is tied around the hip to ward off evil spirits. (*Mali*)

***Justicia adhatoda*** L. (Acanthaceae) VN: Addasaram E: Malabar nut tree, Root, MHB, 3638

Malaria: A spoonful of root paste is administered daily twice for 5 days. (*Mukha dora*)

***Lawsonia inermis*** L. (Lythraceae) VN: Gorintaku E: Henna, Root, Leaf, MHB, 4075

\*Typhoid: Root and leaves (1:10 ratio) are ground along with 5 seeds of *Piper nigrum* and paste with a glass of hot water is administered once a day for 3 days. (*Bagata*)

***Leucas plukenetii*** (Roth) Spr. (Lamiaceae) VN: Tummi E: Thumb, Whole plant, MHB, 4534

Fever (Evil spirits): A whole plant (without root) ground along with 20 gm of *Moringa oleifera* stem bark and 5 ml of urine of man. Two or 3 drops of this extract is instilled into ears and nostrils. (*Gadaba*)

***Lycopersicon esculentum*** Mill. (Solanaceae) VN: Tomata E: Tomato, Root, MHB, 3554

Fever (Evil spirits): Root with stem barks of *Mangifera indica*, *Pongamia pinnata* and *Erythrina variegata* taken in equal quantities are ground. Paste is mixed in a glass of water. The solution is gargled for few minutes and then administered only once. (*Porja*)

***Melia dubia*** Cav. (Meliaceae) VN: Munnuru karaka E: Malabar neem wood, Stem bark,

MHB, 4479

\*Typhoid: Stem bark with stem bark of *Plumeria alba* are taken in equal quantities and made into powder. Half spoonful of this powder is administered in a glass of hot water twice a day for 45 days. (*Porja*)

***Millettia racemosa*** Benth. (Leguminosae: Faboideae) VN: Nelatangedu E: Kaffir iron wood, Stem bark, MHB, 3187

\*Fever: 2 spoonful of stem bark paste with a spoonful of honey is administered daily twice for 3 days. (*Gadaba*)

***Mitracarpus hirtus*** (L.) DC. (Rubiaceae) VN: Sollogantijud E: Small square weed, Whole plant, MHB, 4095

\*Fever (Evil spirits): Whole plant paste is applied on the head to ward off evil spirits and fever. (*Bagata*)

***Mollugo pentaphylla*** L. (Aizoaceae) VN: Yerrichetharasi E: Five leaved carpet weed, Whole plant, MHB, 2673

\*Fever: 2 or 3 spoonful of whole plant decoction is administered daily twice for 4 days. (*Khond*)

***Mucuna pruriens*** (L.) DC. (Leguminosae: Faboideae) VN: Duladama E: Cowitch, Root, MHB, 4366

\*Fever (Evil spirits): Root is tied around the hip of children. (*Goudu*)

***Neolamarckia cadamba*** (Roxb.) Bosser (Rubiaceae) VN: Cadamba E: Kadam, Stem bark, MHB, 2687

Fever: 2 spoonful of stem bark decoction is administered twice a day for 2 days. (*Gadaba*)

Typhoid: 2 spoonful of stem bark paste

mixed in half glass of hot water is administered twice a day for 5 days. (*Kondadora*)

***Ocimum basilicum*** L. (Lamiaceae) VN: Sabja E: Sweet basil, Leaf, MHB, 4376

Fever: 5 tender leaves with 5 tender leaves each of *Punica granatum*, *Psidium guajava* and *Eucalyptus globulus* are ground along with a spoonful of castor oil and applied on the forehead early in the morning only once. (*Bagata*)

***O. tenuiflorum*** L. (Lamiaceae) VN: Krishna tulasi E: Holy basil, Leaf, MHB, 4090

Fever: 21 leaves are ground along with 20 gm of dried ginger and a spoonful of honey mixed in a half glass of hot water is administered daily twice for 3 days. (*Porja*)

\*Malaria: Leaves with those of *Azadirachta indica* taken in equal quantities are ground. Two spoonful of paste mixed with half glass of hot water is administered daily once for 3 days. (*Porja*)

***Phyllanthus emblica*** L. (Euphorbiaceae) VN: Pedhausiri E: Indian gooseberry, Leaf, MHB, 3099

Fever: 500 gm of leaves are ground and paste is applied on the head and bandaged for one hour only once. (*Gadaba*)

***Piper longum*** L. (Piperaceae) VN: Pippallu E: Long pepper, Root, MHB, 2603

\*Malaria: 2 spoonful decoctions taken from a mixture of 50 gm of root, 50 gm of dried ginger and 5 seeds of *Piper nigrum* is administered twice a day for 3 days. (*Kotia*)

***P. nigrum*** L. (Piperaceae) VN: Miriyalu E: Black pepper, Seed, MHB, 4495

Malaria: 100 ml of decoction made of seeds (20 g) is administered before breakfast for 10 days. (*Mali*)

***Plumeria alba*** L. (Apocynaceae) VN: Lakshmi poolu E: Pagoda tree, Stem bark, MHB, 4399

\*Puerperal fever: Stem bark with that of *Tamarindus indica* taken in equal quantities are made into decoction. Half glass of this decoction is administered twice a day for 3 days. (*Porja*)

**\**Polyalthia suberosa*** (Roxb.) Thw. (Annonaceae) VN: Dudduga chettu E: Corky debbar tree, Root bark, MHB, 2595

Puerperal fever: Root bark ground with fruits of *Piper longum* (5:1) and made into decoction. Two spoonful of this decoction is administered twice a day for 5 days. (*Gadaba*)

***Pseudarthria viscida*** (L.) Wight & Arn. (Leguminosae: Faboideae) VN: Batantuaaku E: Pseudarthria, Root, MHB, 4299

\*Fever: Root crushed with that of *Gmelina arborea* (1:1) and a spoonful of extract is administered daily twice for 2 days. (*Bagata*)

***Rauvolfia serpentina*** (L.) Benth. ex Kurz (Apocynaceae) VN: Pathalagaridi E: Sarpentina root, Root, MHB, 4409

\*Typhoid: Root with rhizome of *Acorus calamus*, stem of *Moringa oleifera* and rhizome of *Curcuma amada* are taken in equal quantities and ground along with a fruit of *Phyllanthus emblica* and a fruit of *Citrus limon*. Paste is boiled in one litre of water and made into decoction. A glassfull of this decoction is administered twice a day

for 30 days. (*Porja*)

***Rothea serrata*** (L.) Steane & Mabb. (Lamiaceae)  
VN: Bommala marry E: Beetle Killer, Root,  
MHB, 3439

Fever: 100 gm of root in a glass of water is boiled until half glass original volume of water remains and this decoction is administered twice for one day only. (*Konda dora*)

***Selaginella repanda*** (Desv. ex Poir.) Spr. (Selaginellaceae) VN: Odamara E: Selaginella, Whole plant, MHB, 3987

\*Fever (Evil spirits): Whole plant with roots of *Passiflora foetida* and *Curculigo orchioides* taken in equal quantities are ground. Two spoonful of this paste is administered twice a day for 3 days. (*Kotia*)

***Senna occidentalis*** (L.) Link. (Leguminosae: Caesalpinioideae) VN: Kasintha E: Stinking weed, Root, MHB, 2883

Fever (Evil spirits): Root is tied around the neck to cure fever resulted due to evil spirits. (*Mali*)

***Sesbania grandiflora*** Pers. (Leguminosae: Faboideae) VN: Avisa E: Swamp pea, Leaf, MHB, 3827

\*Fever: A spoonful of leaf juice is administered twice a day for 2 days. (*Goudu*)

***Sphaeranthus indicus*** L. (Asteraceae) VN: Bhattipoolu E: East Indian globe-thistle, Inflorescence, MHB, 4212

Malaria: 2 spoonful of inflorescence paste with 10 g of crab flesh is boiled in water and eaten twice a day for 2 days. (*Bagata*)

***Terminalia alata*** Heyne ex Roth (Combretaceae)  
VN: Nallamaddhi E: Black murdah, Leaf,

MHB, 3866

Fever with shivering and typhoid: A handful of tender leaves plucked with closed nose and ground along with queen ant. Paste is rubbed all over the body and kept for 2 h once a day for 2 days. (*Khond*)

***Xanthium indicum*** Koen. (Asteraceae) VN: Marulamatangi E: Burweed, Root, MHB, 3091

Fever: 2 or 3 spoonful of root decoction is administered twice a day for 3 days. (*Porja*)

***Zingiber officinale*** Rosc. (Zingiberaceae) VN: Allamu E: Ginger, MHB, Rhizome, 4114

\*Malaria: 20 gm of rhizome ground with 50 gm of *Piper longum* root and 20 gm of jaggery. Paste is administered with a glass of hot water once a day for 3 days. (*Gadaba*)

## Results and Discussion

The study yielded 66 species of plants covering 62 genera and 38 families used by the tribes of Visakhapatnam district for curing fever, fever due to evil spirits, fever with shivering, intermittent fever, malaria, puerperal fever and typhoid. Habit-wise analysis showed the dominance of herbs with 26 species followed by trees (20 spp.), shrubs (17 spp.) and climbers (3 spp.). Fabaceae is the dominant family with 10 species followed by Apocynaceae (6 spp.), Lamiaceae (5 spp.), Acanthaceae, Asteraceae, Euphorbiaceae, Cleomaceae with 3 species each; Meliaceae, Solanaceae, Poaceae, Rubiaceae, Piperaceae, Zingiberaceae each with 2 species and the rest of the families with one species each. Plant part-wise analysis showed the maximum utilization of root in 26 practices followed by leaf (19), stem bark (13), rhizome (6), whole plant (5), inflorescence, seed, stem, fruit (2 each)



and root bark one. They were administered either in the form of powder, paste, decoction, juice or pills with either water, hot water, jaggery, castor oil or honey. Of the total 75 practices 49 involve single plant only followed by 15 with two plants, 4 with three plants, 5 with four plants, one each with five and six plants. Thirty eight practices were involved in curing fever followed by 17 for fever due to evil spirits, 10 for malaria, 8 for typhoid and 5 for intermittent fevers. Some species with similar use recorded elsewhere are: *Andrographis paniculata*, *Azadirachta indica*, *Xanthium indicum* by the Yanadi, Nakkala, Irula, Yerukula, Sugali or Lambada, Chenchu tribes of Chittoor district, Andhra Pradesh (Vedavathy et al., 1997); *Andrographis paniculata*, *Calotropis procera* (intermittent fever), *Holarrhena pubescens* by the tribes, Chenchus, Sugalis and Yerukulas of Kurnool district, Andhra Pradesh (Goud et al., 1999); *Acorus calamus*, *Azadirachta indica*, *Piper longum* by the traditional healers of Darjeeling Himalayas (Chhetri, 2004); *Ailanthus excelsa* for typhoid by the Bhil tribe of Ratlam district, Madhya Pradesh (Jadhav, 2007); *Acorus calamus*, *Ailanthus excelsa*, *Cassia fistula* by the people in Meerut district of Eastern Uttar Pradesh (Tomar, 2007); *Achyranthes aspera*, *Acorus calamus*, *Andrographis paniculata*, *Azadirachta indica*, *Cassia fistula*, *Clerodendrum serratum*, *Desmodium gangeticum*, *Holarrhena pubescens*, *Mucuna pruriens*, *Piper longum*, *P. nigrum* and *Sesbania grandiflora*, for the treatment of fever in Madhavacikitsa tradition (Mishra, 2009); *Andrographis paniculata*, *Calotropis procera* (intermittent fever), *Clerodendrum serratum*, *Hyptis suaveolens*, *Millettia racemosa*, *Neolamarckia cadamba*, *Ocimum tenuiflorum* (malaria) by the Gadaba, Jatapu, Konda dora, Kuttiya, Savara, Yerukula tribes

of Srikakulam district, Andhra Pradesh (Naidu et al., 2009); *Cassia fistula*, *Leucas plukenetii*, *Ocimum tenuiflorum*, *Strychnos nux-vomica* by the local people of Western and Eastern Ghats of Karnataka (Shiddamallayya et al., 2010); *Andrographis paniculata*, *Azadirachta indica*, *Carissa carandas*, *Clerodendrum serratum*, *Cynodon dactylon*, *Evolvulus alsinoides*, *Ocimum basilicum*, *O. tenuiflorum*, *Phyllanthus emblica* by the Koya, Lambada, Gond/Naikpod, Nayak, Konda reddy, Yerukula tribes of Khammam district, Andhra Pradesh (Manjula et al., 2014). Identical use of the same plant by different tribes in different parts of India indicate its established curative property and therapeutic significance. It is interesting to note that the way of life, particularly with respect to healthcare system, has hardly undergone any change even in the present century. The study represents a contribution to the existing knowledge of folk remedies that are in current practice for the treatment of fevers which happens to be the most common ailment amongst the tribes because of their inhospitable habitat.

This study provides empirical primary ethnomedicinal data on the use of traditional medicine to manage and/or treat fevers and can contribute in preserving indigenous knowledge in India. It is anticipated that these primary data will open new avenues to identify novel drugs that can help to alleviate human sufferings.

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