

Ethnobotanical Leaflets 10: 139-148. 2006.

Ethnobotanical Survey on Respiratory Disorders in Eastern Ghats of Andhra Pradesh, India†

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†Laila Impex Communication # 21

Issued 6 June 2006

Abstract

An Ethnopharmacological survey of the Eastern Ghats region of Andhra Pradesh, comprising Chittoor, Cuddapah, East Godavari, Guntur, Khammam, Krishna, Kurnool, Srikakulam, Visakhapatnam, Vijayanagaram and the West Godavari districts, was conducted during 2000-2005. Eighty-four species of folk drug plants belonging to 72 genera and 41 families were found to be used as a remedy for respiratory disorders by the rural people and forest ethnic people (Chenchus, Erukulas, Lambadas, Koyas, Kondareddies, Nukadoras, Yanadis). The scientific, vernacular and family names of these medicinal plants, along with the parts used and the mode of their administration are enumerated.

Key Words: Ethnobotany, Respiratory disorders, Eastern Ghats, India.

1. Introduction

The respiratory system includes the lungs and a system of tubes that link the sites of gas exchange with the external environment. It is susceptible to a number of diseases, and the lungs are prone to a wide range of disorders caused by pollutants in the air. The most common problems of the respiratory system are: asthma, bronchitis, common cold, cough and whooping cough. Asthma is a condition marked by recurrent attacks of paroxysmal dyspnoea, with wheezing, due to spasmodic contraction of bronchi, inflammation or allergy (Subhash Ranade *et al.* 1999).

In India, about 20 million people are estimated to suffer from asthma and about 150 million World wide, according to the World Health Organization (WHO, 1998, Weiss *et al.* 1992). Common cold is a catarrh disorder of upper respiratory tract. It is associated with other diseases such as flu, sinusitis and cough. Many plants of folklore importance are used as a remedy for respiratory disorders for generations by rural population, forest ethnics have brought to light through ethnobotanical field studies. The present work is an endeavor in this direction and provides field data

on 84 useful taxa for the treatment of respiratory disorders by the forest ethnic people of the Eastern Ghats region of Andhra Pradesh, predominantly the Chenchus, Kondareddies, Koyas, Nukadoras. The Eastern Ghats are one of the richest floristic and phytogeographical regions of India. Eastern Ghats are located between 76°56' and 86°30' E longitudes and 11°30' and 22°00' N latitudes. Ethnobotanically, this region is not well known despite the contributions of Arunee Kumar & Niteswar (1990), Hemadri (1987, 1994), Reddy *et al.* (1998), Prasad *et al.* (1999) and Raju (1995).

The Present paper provides additional folklore information on 84 Angiosperms that belong to 72 genera and 41 families. Of these, the *Asclepiadaceae* and *Papilionaceae* are the dominant families, with six ethnomedicinal species each.

2. Material & Methods

The information on plants used for treating respiratory disorders of folklore origin were obtained during the course of ethnopharmacological surveys of Eastern Ghats of Andhra Pradesh conducted in 2000-2003. For this purpose, local medicine men and elderly people whose empirical knowledge was respected by every one in the area were interviewed. Data on local name of folk drug plants, part used, method of preparation, dosage recommended, and precautions (if any) were recorded for each medicinal claim. Medicine men were requested to accompany the senior author in the field so as to facilitate the identification of different plant drugs specially employed by them to treat the disease. The information was also discussed with different medicine men in other localities to validate the claims as far as possible. Based on the information and material provided by medicine men, the weight measurements in dosage forms were determined by using a scale in either the field or camp. Names of all key informants were noted and are available on request. Botanical specimens of all folk drug plants were collected, identified and deposited at the herbarium of Laila Impex R & D Centre, Vijayawada, for further reference. The study involved an extensive literature search and herbarium examination.

3. Enumerations

The information collected on ethnobotanic medicine employed for respiratory disorders in Eastern Ghats of Andhra Pradesh by the local tribal inhabitants and herbal practitioners is presented under the scientific names of the plants, which are alphabetically arranged. The author citation, name of family, vernacular names, collection number and medicinal uses are set in sequence.

Asthma

1. *Acacia pennata* (Linn.) Willd. (Mimosaceae) 'Korintha' LIH 6521

Fresh stem sap sucked once daily until cured.

2. *Achyranthes aspera* Linn. (Amaranthaceae) 'Korruchu' LIH 6623

A pinch of the plant is mixed with sufficient quantity of honey and taken twice daily until cured.

3. *Aegle marmelos* (Linn.) Correa (Rutaceae) 'Maaredu' LIH 6537

Four tender tips are chewed and the sap swallowed once daily for 40 days.

4. *Annona squamosa* Linn. (Annonaceae) 'Seethapalamu' LIH 6798

One tea-cup of water is poured over five gm. of stem bark and 5 crushed leaves, and boiled until only ½ cup remains. This extract is taken once daily for a fortnight.

5.Anogeissus latifolia*** (Roxb.ex DC.) Wall. ex Guill (Combretaceae) ‘Tiruman’ *LIH* 6543

Two to three inches of stem bark are chewed and the sap is swallowed once daily until cured.

6.Barleria cristata*** Linn.(Acanthaceae)‘Chikati koorā’,‘Chikati raaju’ *LIH* 6572

Four to five gm. of dry leaf powder is taken once daily until cured.

7. *Bauhinia variegata* Linn.(Caesalpiniaceae)‘Devakanchanum’ *LIH* 6669

A teaspoon of flower paste is taken twice daily for a fortnight.

8. *Benkera malabarica*(Lam.) Triveng. (Rubiaceae) ‘Pedeli’, ‘Tella guvvangi’ *LIH* 6549

Fifty gm. of the stem bark of this species plus that of *Syzygium cumini* (Linn.) Skeels (Naeredu, Jinna chettu) are crushed with 3-4 peppers and mixed in a liter of water. Forty to fifty ml. of this extract is taken once daily until cured.

9.*Bridelia retusa* (Linn) Spreng. (Euphorbiaceae) ‘Kora Manau’, Anepu chettu’ *LIH* 6562.

The stem bark of this species along with that of *Terminalia bellrica* and the roots of *Adiantum lunulatum* Burm.(Pitta kaalu) are crushed in equal proportions and taken in a size of red gram once daily for three months.

10. *Caesalpinia bonduc* Linn. (Caesalpiniaceae) ‘Gacha’ *LIH* 6502

Four to five gm. of seed powder are taken with honey twice daily for 2-3 months.

11. *Calotropis gigantea* (Linn.) R.Br. (Asclepiadaceae) ‘Jillaedu’ *LIH* 6515

Five to six drops of flower extract are administered once daily until cured.

12. *Cassia fistula* Linn. (Caesalpiniaceae) ‘Rela’, ‘Rella’ *LIH* 6548

Eight to ten gm. of fresh fruit pulp is administered twice daily for 3-4 months.

13. **Chloroxylon swietenia* DC. (Flindersiaceae) ‘Billudu’ *LIH* 6728

Twenty to thirty gm. of fresh stem bark are crushed with 1-2 leaves of *Wrightia tinctoria* and 6-7 peppers. The extract is boiled and a half teaspoon of this decoction is taken twice daily for 2-3 months.

14. *Cissus quadrangularis* Linn. (Vitaceae) ‘Nalleru’ *LIH* 6678

One to two inches of dry stem are crushed with 2-3 peppers and garlic. The extract is taken once daily for two months.

15. *Cissus vitiginea* Linn. (Vitaceae) ‘Aavaguda’ *LIH* 6813

Four to five teaspoons of dry fruits are crushed with 2-3 inches of *Chloroxylon swietenia* DC. (Billudu) stem bark. A teaspoon of this extract is administered with a glass of goat milk once daily until cured.

16. *Cleome gynandra* Linn. (Cleomaceae) ‘Vaminta’ *LIH* 6560

Twelve to fifteen leaves are crushed with 8-10 peppers and pinch of copper sulphate and boiled in a glass of water. A half glass of this extract is taken once daily until cured.

17.*Clerodendurim serratum* Linn. Moon (Verbenaceae) ‘Gantu bharagi’ *LIH* 6503

Two to three teaspoons of a root decoction of this species is taken with a pinch of black pepper and salt once daily until cured.

18. *Corallocarpus epigaeus* (Rottler) C.B. Clarke (Cucurbitaceae) ‘Pamudonda’, ‘Naaga Sarum’ *LIH*

6514

A teaspoon of tuber paste is administered once daily for 45 days.

19. *Datura metel* Linn. (Solanaceae) 'Nallumetta' *LIH* 6631

Five to ten gm. of stem powder is placed on *Ficus benghalensis* Linn. (Marri chettu) leaves, which are then wrapped and smoked in the form of a cigar once daily until cured.

20. *Dendrophthoe falcata* (Linn.f.) Ettiughs. (Loranthaceae) 'Badanika' *LIH* 6738

Ten to twelve gm. of stem bark powder is taken twice daily for one month.

21. * *Desmodium biarticulatum* (Linn.) F.V. Muell. (Papilionaceae) *LIH* 6550

Powder from the whole plant is burnt and the smoke inhaled twice daily until cured.

22. *Desmodium gangeticum* (Linn.) DC. (Papilionaceae) 'Dayyam jada' *LIH* 6505

A half cup of root decoction is taken once daily for 2-3 months.

23. *Euphorbia hirta* Linn. (Euphorbiaceae) 'Chitti Paala', 'Reddivaari nanubaalu' *LIH* 6836

Two to three teaspoons of a decoction of the whole plant is taken once daily until cured.

24. *Garuga pinnata* Roxh. (Burseraceae) 'Garugu' *LIH* 6565

The leaves of this species along with those of *Justicia adhatoda* and *Vitex negundo* are crushed in equal quantities, made into pills the size of pigeon peas and taken twice daily until cured.

25. *Hibiscus rosa-sinensis* Linn. (Malvaceae) 'Mandaara' *LIH* 6517

Many pure red colored petals of the flower are crushed in a half cup of butter milk, 2-3 black peppers and a pinch of salt. The paste is taken as a chutney once daily for 1 month.

26. *Justicia adhatoda* Linn. (Acanthaceae) 'Addasarum' *LIH* 6740

A half teaspoon of fresh leaf juice is taken once daily until cured.

27. *Morinda pubescens* J.E. Smith (Rubiaceae) 'Chekka Chettu', 'Togari mogli' *LIH* 6563

Twenty to twenty-five ml. of the stem bark of this species is extracted and administered once daily for 1 month.

28. *Pegularia daemia* (Forssk.) Chiov. (Asclepiadaceae) 'Juttupu tiga' *LIH* 6528.

Two to three leaves of this species are crushed along with those of *Wrightia inctoria*, *piper longum* Linn. (Pippallu) and *Allium sativum* (Vellulli paya). One-half teaspoon of this extract is taken once daily until cured.

29. *Solanum anguivi* Lam. (Solanaceae) 'Vaakudu', 'Tella mulaka', 'Apa chettu' *LIH* 6575

One to two teaspoons of powder ground from the whole plant is taken with honey once daily for a fortnight.

30. *Solanum surattense* Burm.f. (Solanaceae) 'Naela vaakudu', 'Naela mulaka' *LIH* 6764.

A teaspoon of root powder mixed with a pinch of pepper powder and fried zinger is taken with honey once daily until cured. A teaspoon of fruit paste can also be taken with goat milk twice daily for three months.

31. *Tylophora Indica* (Burm.f.) Merr. (Asclepiadaceae) 'Mekameyani aku' *LIH* 6558

One to two tender leaves are chewed and the sap swallowed in an empty stomach in early morning once daily until cured. Two to three leaves may also be crushed with 1-2 peppers and garlic. This extract is taken once daily for 2-3 months.

32. *Wrightia tinctoria* R.Br. (Apocynaceae) 'Tedla paala', 'Reppaala, Palavara' *LIH* 6546

Three to four drops of leaf juice are applied as nasal drops once daily until cured.

Bronchitis

1.**Abutilon hirtum* (Lam.) Sweet (Malvaceae) 'Banka benda' *LIH* 6751.

One to two teaspoons of the leaf decoction of this species is taken once daily for one whole week

2. *Barleria prionitis* Linn. (Acanthaceae) 'Mulla gorinta' *LIH* 6526.

Two to three teaspoons of the root decoction from this species are taken twice daily for one whole week

3. *Clerodendrum serratum* (Linn.) Moon (Verbenaceae) 'Gantu bharangi' *LIH* 6814.

Five to six gm. of leaf powder of this species are mixed with a sufficient quantity of zinger paste. This extract is taken once daily until cured.

4. *Corallocarpus epigaeus* (Rottl.& Willd.) CB.Clarke 'Paamu donda' *LIH* 6793

A teaspoon of tuber paste from this species is taken once daily until cured.

5. *Melia azedarach* Linn. (Meliaceae) 'Turka vepa' *LIH* 6593

Two to three handfuls of the steamed leaves of this species are tied on the abdomen and chest twice daily until cured.

6. *Ocimum tenuiflorum* Linn. (Lamiaceae) 'Tulsi' *LIH* 6509

Ten to twelve ml. of leaf juice from this species are taken daily for one whole week.

7. *Tinospora malabarica* (Lam.) Miers (Menispermaceae) 'Kodipurru chettu' *LIH* 6541.

One to two inches of fresh stems from this species are crushed with 3-4 salt crystals

Cold and Cough

1.**Anisochilus carnosus* (Linn.f.) Wall. ex Benth. (Lamiaceae) 'Kodipunju chettu' *LIH* 6504

Two teaspoons of extract from the tender shoots of this species are administered twice daily for 3 days.

2. *Calotropis gigantea* (Linn.) R.Br. (Asclepiadaceae) 'Jilledu' *LIH* 6515

Four to five drops of a flower extract from this species are administered twice daily for 3-4 days.

3. *Careya arborea* Roxb. (Barringtoniaceae) 'Tharrepu chettu' *LIH* 6542

Two to three inches of stem bark from this species are crushed with 2-3 peppers. This mixture is administered with honey once daily for 3 days.

4. *Cissampelos pareira* Linn. (Menispermaceae) 'Banka tiga', 'Chiruboddi' *LIH* 6581

Four to five inches of the roots of this species are crushed with a plant of *Andropogon panichulata* (Burm.f.) Nees (Nelavemu) and the fruits of *Balanites roxburghii* planch. (Gaare chettu) (10-12 gm. each). This extract is taken once daily for one whole week.

5. *Evolvulus alsinoides* (Linn.) Linn. (Convolvulaceae) 'Vishnukrantha' *LIH* 6511

Fifteen ml. of a decoction made from a whole plant of this species is administered thrice a day for three days.

6.* *Glycosmis pentaphylla* (Retz.) DC. (Rutaceae) 'Gilugu' *LIH* 6516

Two teaspoons of a decoction made from the stem bark of this species are administered with a pinch of pepper powder twice daily for three days.

7. *Helicteres isora* Linn. (Sterculiaceae) 'Nultada, Adavi Chamanti' *LIH* 6552

The stem bark of this species along with that of *Tamilnadia uliginosa* (Retz.) Tirveng. (Kantula chettu) and a whole plant of *Bacopa monnieri* Wettst. (Sambrani chettu) (10 gm. each) are burnt, and the smoke inhaled once daily for three days.

8. *Lannea coromandelica* (Houtt.) Merr. (Anacardiaceae) 'Gumpena' *LIH* 6583.

The fruit of this species is chewed with common salt. The sap is then swallowed twice daily for two days.

9. *Leuas aspera* (Willd.) Link (Lamiaceae) 'Tummi kKura' *LIH* 6506

Five to six inches of the roots of this species are crushed with pinch of zinger, musk and pepper. This extract is administered twice a day for 3-4 days.

10. *Mukia maderaspatana* (Linn.) Roem. (Cucurbitaceae) 'Chedupulla' *LIH* 6567

An extract made up from a fistful of the whole plant of this species crushed with 10-12 gm. of zinger, pepper and a pinch (or half teaspoon) of musk is administered twice a day for three days.

11. *Tinospora cordifolia* (Willd) Miers ex Hook. f. & Thoms. (Menispermaceae) 'Tippa tige' *LIH* 6834

A half cup of the decoction made from the stem of this species is administered once daily for three days.

12. *Trachyspermum ammi* (Linn.) Sprague (Apiaceae) 'Kapparilla aku' *LIH* 6560

Five to six ml. of a leaf extract made from this species is administered twice a day for three days.

13. *Vitex negundo* Linn. (Verbenaceae) 'Vavili' *LIH* 6601

The dry leaves of this species are burnt and the smoke is inhaled twice daily. Also, the slightly warmed leaves of this species may be placed on the forehead of a sick person until cured.

14. *Ziziphus oenoplia* (Linn.) Mill. (Rhamnaceae) 'Pariki' *LIH* 6535

Five to six fresh leaves of this species are chewed with a pinch of zinger, and the sap swallowed twice a day for three days.

Cough

1.* *Alysicarpus vaginalis* (Linn.) DC. (Papilionaceae) 'Musaraaku' *LIH* 6561

One teaspoon of the root powder of this species is mixed with a pinch of pepper powder and common salt. This mixture is administered twice a day for 3-4 days.

2.* *Anisochilus carnosus* (Linn.f.) Wall. ex Benth. (Lamiaceae) 'Pedda gandhara' *LIH* 6850

One to two teaspoons of an extract made from the tender tips of this species are administered once daily for three days.

3. *Azadirachta indica* A.Juss. (Meliaceae) 'Vepa' *LIH* 6577

Five to six leaves of this species are crushed with 1-2 peppers and the extract is administered once daily for three days.

4. *Caralluma adscendens* (Roxb) Haw. (Asclepidaceae) 'Kundetikkommulu' *LIH* 6539

Two to three inches of the stem of this species are crushed with a sufficient quantity of pepper, zinger and salt, and the extract administered twice a day for two days.

5. *Careya arborea* Roxb. (Barringtoniaceae) 'Tharrepu chettu' *LIH* 6542

Two to three inches of the stem bark of this species are crushed with 2-3 peppers, and the mixture

taken with honey once daily for five days.

6.* *Celosia argentea* Linn. var. *cristata* (Linn.) O.Kuntze (Amaranthaceae) 'Seetammajada' LIH 6584
Five to six gm. of the seeds of this species are crushed with 1-2 peppers and garlic. This extract is administered twice a day for three days.

7. *Cissus quadrangularis* Linn. (Vitaceae) 'Nalleru' LIH 6586

Two to three inches of the tender shoots of this species are crushed with a pinch of cumin and pepper, and the extract administered once daily for three days.

8. *Citrullus colocynthis* (Linn.) Schrad. (Cucurbitaceae) 'Yerri pucha' LIH 6571

The roots of this species together with those of *Tylophora indica* and the leaves of *Securinega leucopyrus* (Willd.) Muell. Arg. (Tella pulcheru) are crushed in equal quantities (30 gm. each) along with 10-12 peppers. One teaspoon of this extract is administered twice a day for five days.

9. *Dillenia pentagyna* Roxb. (Dilleniaceae) 'Revadi' LIH 6520

One to two inches of the stem bark from this species are crushed with a pinch of common salt. This extract is administered once daily for three days.

10. *Evolvulus alsinoides* (Linn.) (Convolvulaceae) 'Vishnukrantha' LIH 6587

Ten to fifteen ml. of a decoction made from the whole plant of this species are taken 2-3 times a day.

11. *Grewia tiliaefolia* Vahl. (Tiliaceae) 'Tada' LIH 6674

Four to five teaspoons of a decoction made from the stem bark of this species are administered once daily for 2-3 days.

12. *Justicia adhatoda* Linn. (Acanthaceae) 'Addasaram' LIH 6591

A half teaspoon of powder from the dry leaves of this species is taken with honey once daily for five days.

13. *Ocimum tenuiflorum* Linn. (Lamiaceae) 'Tulasi' LIH 6828

Two teaspoons of leaf juice from this species is mixed with an equal quantity of onion juice and a pinch of salt. This mixture is administered once daily for three days.

14. *Sarcostemma acidum* (Roxb.) Voigt (Asclepiadaceae) 'Atukudu tiga' LIH 6519

Twenty to twenty-five fresh leaves of this species are chewed with 3-4 pieces of rock salt. This sap is swallowed once daily for five days.

15. *Sesbania grandiflora* (Linn.) Poiret (Papilionaceae) 'Avishe' LIH 6533

Four to five gm. of a paste made from the seeds of this species are administered twice a day for three days.

16. *Solanum surattense* Burm.f. (Solanaceae) 'Nelamulka', 'Nelavaakudu' LIH 6588

Fifty ml. of a decoction made from the roots of this species are administered twice a day for three days.

17. *Tephrosia purpurea* (Linn.) Pers. (Papilionaceae) 'Vempali' LIH 6529

A. Five to six inches of the dry root of this species are crushed with those of *Citrullus colocynthis* and pinch of pepper powder. This extract is administered once daily for 2-3 days.

B. A fistful of the leaves of this species are crushed with a sufficient quantity of pepper and garlic. This extract is fed to cattle once daily for five days.

18. *Terminalia chebula* Retz. (Combretaceae) 'Karaka' LIH 6518

A half teaspoon of powder made from the fruit of this species is taken with honey once daily for one whole week.

19. *Tylophora indica* (Burm.f.) Merr. (Asclepiadaceae) 'Mekameyaniaku' LIH 6684

Two to three tender fresh leaves of this species are crushed with 1-2 peppers. This extract is administered once daily for 2-3 days.

20. *Zizphus xylopyrus* (Retz.) Willd. (Rhamnaceae) 'Gotti' LIH 6521

One to two inches of the fresh stem bark of this species are chewed with 1-2 peppers, and the sap swallowed once daily for five days.

Whooping cough

1. *Achranthes aspera* Linn. (Amaranthaceae) 'Uttareni' LIH 6710

Twenty to thirty gm. of a dry plant powder from this species are crushed with 2-3 peppers and pinch of musk. This extract is administered twice a day for one whole week.

2. *Albizia odoratissima* (Linn.f.) Benth. (Mimosaceae) 'Chinduga' LIH 6547

A fistful of fresh leaves from this species are crushed with a sufficient quantity of pepper, garlic and salt, and the mixture fried in a sufficient quantity of cow ghee. This extract is taken twice a day for two days.

3. *Ardisia solanacea* Roxb. (Myrsinaceae) 'Chavalakura', 'Kondamamidi' LIH 6557

Five to six inches of the peeled tender fresh stems of this species are chewed twice daily for three days.

4. *Butea monsperma* (Lam.) Taubert (Papilionaceae) 'Moduga' LIH 6562

The ash from one seed of this species is taken with ¼ teaspoon of honey once daily (at bedtime) for three days.

5. *Cassia occidentalis* Linn.(Caesalpiniaceae) 'Kasinda, Adavi chennagi' LIH 6580

The roots of this species along with those of *Capparis zeylanica* Linn. (Adonda) (10-15 gm each.) are crushed with 5-6 peppers and a pinch of jaggery. This mixture is administered twice a day for three days.

6. *Cassia tora* Linn. (Caesalpiniaceae) 'Tagarisha, Tanthem' LIH 6524

Ten gr. of the fresh root paste of this species are administered along with 1-2 peppers twice daily for three days.

7. *Euphorbia tirucalli* Linn. (Euphobiaceae) 'Gundujemudu' LIH 6756

The leaves of this species are chewed with raw salt. This sap is swallowed twice daily until the patient is cured.

8. *Nyctanthes arbor-tristis* Linn.(Nyctanthaceae) 'Jaji, Paarijaatham' LIH 6782

One to two leaves of this species are chewed and the sap is swallowed once daily until the patient is cured. Alternatively, the leaves of this species along with the fruits of *Terminalia chebula* and the stem bark of *Anogeissus latifolia* are crushed in equal quantities, and are made into pills the size of pigeon peas. These are taken twice daily for one whole week.

9. *Pergularia daemia* (Forssk.) Chiov. (Asclepiadaceae) 'Juttupaaku' LIH 6822

The tender tips of this species are crushed with those of *Melia azadarach* and *ocimum tenuiflorum*

(100 gm. each), along with 12-15 peppers and garlic. One teaspoon of this extract is administered twice a day for one whole week.

10. *Solanum americanum* Miller (Solanaceae) ‘Kamanch’ LIH 6885

Twenty to thirty ml. of the leaf juice of this species are taken with a sufficient quantity of sugar once daily until cured.

11. **Solanum pubescens* Willd. (Solanaceae) ‘Usthi’ LIH 6553

A half teaspoon of a decoction made from the stem bark of this species is administered with 3-4 gm. of pepper powder once daily for a fortnight.

12. *Terminalia bellirica* (Gaertner) Roxb. (Combretaceae) ‘Taani, Taandra’ LIH 6554

One teaspoon of powder made from the fruit pulp of this species is taken with a pinch of turmeric twice daily for one whole week.

13. *Tinospora cordifolia* (Willd.) Miers ex Hook.f. & Thoms. (Menispermaceae) ‘Tippa tiga’ LIH 6819

Fifty gr. of the roots of this species together with an equal quantity of the roots of *Hemidesmus indicus* (Linn.) R.Br. (Aaavu sugandhi paala), *Gmelina asiatica* Linn. (Chudru kaaya) and *Celastrus paniculatus* Willd. (Maneru tiga), are crushed with 10 gm. of asafetida and black cumin. The paste is then slightly warmed in an earthen pot and made into small pills that resemble jowar seeds. Four to five pills are then taken once daily for a fortnight.

4. Results & Discussions

In the present work, 84 plants were studied that could offer some active ingredients for respiratory problems. Usually a single drug was used except in 15 cases. The medicine is prepared from leaves (31), stem and stem bark (25), root and tuber (19), flower, fruit and seed (12), whole plant (8) and stem sap (1). The plant species represent 72 genera and 41 families, consisting of 29 trees, 11 shrubs, 17 climbers (climbing shrubs, rambling shrubs, straggling shrubs, woody climbers and climbers), 10 under shrubs, 15 herbs, 1 epiphyte and 1 fern. The tribes depend (34.52%) on trees for their herbal drugs. The identified taxa with promising medicinal properties, as reported by local tribes, are presented alphabetically along with information like family name, locality, accession number and mode of administration.

The findings of the present study require further research and pharmacological validation. Species first time reported as a remedy for respiratory disorders are marked with an asterisk (*).

Acknowledgements

The authors thank Sri G. Ganga Raju, Chairman and Mr. G. Rama Raju, Director, Laila Impex, for their encouragement, Professor Vatsavaya S. Raju, Kakatiya University, Warangal, Dr. K. Hemadri, advisor to Taxonomy division, Laila Impex, for their helpful discussions and Andhra Pradesh Forest Department personnel for their assistance during the fieldwork.

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