

Plants used by the ethnic people of Krishna district, Andhra Pradesh

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Received 29 January 2008; revised 22 April 2008

The paper enumerates the traditional uses of 43 plant species belonging to 43 genera representing 30 families, which are used by the village communities of Krishna district for the treatment of different diseases and disorders. Half of the remedies are taken orally, accounting for 45% of the medicinal use. Most of the remedies reported are from trees and climber species. The most widely sought after plant parts in the preparation of medicines in the study area are the leaves and stem bark. Huge numbers of medicinal plant species are available in the study area for the treatment of skin diseases (eruptions, eczema, leucoderma, sores, cracks, cuts, boils, wounds, external tumors, etc.), body pain and swellings. Hence, a proper documentation of useful plants with their present status and local traditional knowledge as well as practices is urgently needed.

Keywords: Traditional medicine, Ethnic people, Krishna district, Andhra Pradesh

IPC Int. Cl.:⁷ A61K35/78, A61P1/02, A61P1/14, A61P9/14, A61P13/00, A61P15/00, A61P29/00, A61P35/00, A61P39/02

Traditional healing systems play an important role in maintaining the physical and psychological well being of the vast majority of tribal people in India. However, continued deforestation and environmental degradation in many parts of India presently brought about depletion of medicinal plants and associated knowledge¹. Earlier many ethnobotanical studies have been carried out in Andhra Pradesh²⁻⁷. But the medicinal plants available in this region have not been explored well and only few previous records on ethnomedical knowledge published from the study area^{8,9}. The work under taken to communicate the ethnomedicinal plants of Krishna district gives additional information on 43 angiospermic taxa.

Krishna district falls under Cental Eastern Ghats of Andhra Pradesh situated in 15°43' and 17°10' North latitude and 80°00' and 81°33' East longitudes. The district is bounded by Khammam district on the North, the Bay of Bengal on the South, Guntur and Nalgonda districts on the West and the Bay of Bengal and West Godavari district on the East. The annual rainfall in the region is about 965 mm and is contributed by the Southwest monsoon^{10,11}. The main tribes in the district are *Lambadas* and *Erukals*. Kondapalli is famous world over for toy-making from *Givotia moluccana* (L.) Sreem. (*Tella poniki*). The forest occupies 9% of the total district area and has

mostly deciduous with scrub in fringes. The main hill range of the district known as Kondapalli runs between Nandigama and Vijayawada stretching about 24 km and spreading in 30,000 acres. *Bambusa arundinacea* (Retz.) Willd., once a dominant member, is hardly seen scattered here and there due to over-exploitation by paper Industry.

Methodology

The information on plants used for treating different diseases and disorders of folklore origin was obtained in the course of floristic and ethnobotanical studies of Krishna district of Andhra Pradesh conducted in 2005-2007. For this purpose, local medicine men and elderly people whose empirical knowledge was respected by every one in the area were interviewed. All interviews were performed in the local *Telugu* language. Throughout the interviews, information was collected on plant species, the usable plant parts and its medicinal preparation. Efforts have been made to collect the plants in flowering and fruiting condition. All gathered information was cross-checked with people of other villages and other individuals practicing in or near the locality in which the plant material was collected. Botanical specimens of all folk drug plants were collected, identified with the help of the Floras¹²⁻¹⁵. Voucher specimens of the

medicinal plants collected from the area were deposited in Herbarium of the Laila Research Centre, Vijayawada, Andhra Pradesh for further reference.

Results and discussion

The taxa are arranged alphabetically followed by local name, family name, habit, reproductive season (flowering & fruiting), habitat, plant parts used, ailments and uses (Table 1). Ethnobotanical investigation has led to the documentation of a large number of wild plants used by tribals for meeting their multifarious requirements¹⁶. In India, many organized ethnobotanical studies were initiated by intensive field studies in the tribal areas¹⁷⁻²². The state of Andhra Pradesh is ethnobotanically better

explored²³⁻²⁷. There is very little documentation of the ethno-medico-botanical knowledge of Krishna district^{8,9}. Hence, there is an urgent need for exploration and documentation of the traditional knowledge in order to determine the conservation value of the local forests. The study revealed the medicinal properties of 43 plant species belonging to 43 genera under 30 families. Asclepiadaceae is the dominant family with (5 sp), followed by Convolvulaceae and Euphorbiaceae (3 sp each). The other 27 families contributed two or one species each. Among all total species, trees are found to be more with 14 different plant species followed by climbers (13 sp), shrubs and under shrubs (10 sp) and herbs 6 sp. In addition, *Cassia fistula* (leaf), *Clerodendrum*

Table 1— Plants used by the ethnic people of Krishna district, Andhra Pradesh

Plant name/ local Name/ Family	Uses
<i>Aganosma dichotama</i> (Roth) K. Schum. <i>Paala Malli, Madhavi Tiga</i> (Apocynaceae)	Root decoction is administered orally with a pinch of pepper powder twice a day for three days in fever.
<i>Alangium salvifolium</i> (L.F.) Wanger <i>Ooduga</i> (Alangiaceae)	Ripe fruits are consumed during eye diseases. Leaf paste with those of <i>Diospyros chloroxylon</i> (<i>Illintha</i>) and mud is used as an external application on swellings in animals. During dog bite, slightly warmed stem bark paste is used externally; stem bark paste is administered orally once a day at early morning.
<i>Albizia amara</i> (Roxb.) Boivin <i>Narlingam</i> (Mimosaceae)	During body swellings, slightly warmed leaf paste is applied externally once a day until cured. Stem bark crushed with the root bark of <i>Randia dumetorum</i> (<i>Manga chettu</i>) is used as a shampoo.
<i>Argyrea nervosa</i> (Burm.F.) Boj. <i>Chandrapoda</i> (Convolvulaceae)	Slightly warmed ripen leaf paste is applied over the affected area of hydrocele and bandaged with soft cotton cloth once a day for a fortnight. During body swellings, slightly warmed leaf paste is applied externally once a day until cured.
<i>Atalantia monophylla</i> (L.) Correa <i>Adavi Nimma, Konda Nimma</i> (Rutaceae)	Root bark paste is used as an external ointment for eczema. Leaf paste is rubbed over the scorpion sting area. Fruits are given twice a day for one week during general debility in goats.
<i>Azima tetraacantha</i> Lam. <i>Telluppi</i> (Zygophyllaceae)	For treating body swellings, stem bark decoction is administered orally twice a day for a fortnight.
<i>Bauhinia racemosa</i> Lam. <i>Are, Chinnare</i> (Caesalpiniaceae)	For treating sticky motions, stem bark is administered orally twice a day for two days.
<i>Boswellia serrata</i> Roxb. <i>Anduga, Anthuka</i> (Burseraceae)	During general weakness, stem bark extract is administered orally once a day for two months. Oleo-resin is applied over the scorpion bitten area.
<i>Cadaba indica</i> Lam. <i>Patrika</i> (Capparaceae)	Leaf extract is used on boils; leaf juice is used as eye drops. In cattle fever, decoction of fresh leaves, pepper and garlic is administered orally.
<i>Canavalia virosa</i> (Roxb.) Wight & Arn. <i>Adavi Chemma</i> (Papilionaceae)	During scorpion sting, seed paste is applied over the bitten area. Leaf paste with those of <i>Takkali</i> (<i>Clerodendrum phlomides</i>), fowl extract and tamarind is applied over the swellings during body pain in animals.
<i>Caralluma adscendens</i> (Roxb.) Haw. <i>Kundaeti kommulu</i> (Asclepiadaceae)	During chest pain and general weakness, stem is used as chutney. Stem paste is used as an external application for maggot infested sores.
<i>Cassytha filiformis</i> L. <i>Paachi Teega</i> (Lauraceae)	During insect bite, whole plant paste is applied over the bitten area. For treating external tumours, plant paste with a pinch of turmeric and common salt is applied externally. During menstrual pain, plant decoction is administered orally once as day.
<i>Cayratia auriculata</i> (Roxb.) Gamble <i>Cheyipichi Tiga</i> (Vitaceae)	Slightly warmed tender stem juice is used as ear drops during earache. Leaf paste is used as an external application on tumours of the body.
<i>Chloroxylon swietenia</i> DC. <i>Billika</i> (Flindersiaceae)	Stem bark extract is administered orally once a day for a fortnight during panting in cattle. During insect bite, stem bark extract is given. Leaf paste is used as an external application in cuts and wounds.
<i>Chomelia asiatica</i> O. Kze. <i>Kommi</i> (Rubiaceae)	Root juice used as eye drops in eye diseases of cattle.

Contd.

Table 1— Plants used by the ethnic people of Krishna district, Andhra Pradesh— *Contd.*

Plant name/ local Name/ Family	Uses
<i>Cleome gynandra</i> L. <i>Vamintaaku</i> (Cleomaceae)	During stomachache, leaf juice is administered orally thrice; leaf juice is used as an external application in insect bite. Leaf paste is used as an external ointment in cuts and boils.
<i>Commiphora caudata</i> (Wight & Arn.) Engler <i>Metta Mamidi</i> (Bursaceae)	During foot cracks, stem paste is used as an external application. Fruits are consumed/used as pickle during indigestion.
<i>Crateva magna</i> (Lour.) DC. <i>Uskia-Tammidi</i> (Capparaceae)	During general weakness, stem bark crushed with leaves of <i>Rela</i> (<i>Cassia fistula</i>) and seeds of <i>Sabja</i> (<i>Ocimum basilicum</i>) extract is given with a pinch of butter and common salt twice a day in animals.
<i>Cyperus rotundus</i> L. <i>Tunga Kayalu</i> (Cyperaceae)	During menstrual pain, extract of <i>Adavi benda</i> (<i>Sida cordifolia</i>) tubers and cumin seeds is administered orally. During general weakness, dry tuber powder is administered orally twice a day.
<i>Datura metel</i> L. <i>Nallummetta</i> (Solanaceae)	Slightly warmed leaves are rubbed over the affected parts in external tumours in cattle. In cuts and wounds, slightly warmed fruit slices are kept over the affected parts and tied with bandage.
<i>Elytraria acaulis</i> (L.F.) Lindau <i>Nela Marri</i> , <i>Bhumarri</i> (Acanthaceae)	On maggot infested sores, root paste with garlic and salt is applied externally. During insect bite, root extract is administered orally thrice.
<i>Grewia hirsuta</i> Vahl <i>Gundu Bontha</i> , <i>Juvilika</i> (Tiliaceae)	Stem bark paste is used as an external application during blood clotting caused due to injury of skin. During loose motion, root decoction is administered orally thrice in a day.
<i>Gyrocarpus americanus</i> Jacq. <i>Puniki</i> (Hernandiaceae)	Stem bark extract is administered orally thrice a day during panting in cattle. Wood is used as a substitute for <i>Givotia moluccana</i> for making big toys.
<i>Givotia moluccana</i> (L.) Sreem. <i>Tella Puniki</i> (Euphorbiaceae)	Stem bark paste is applied and its leaves are used as bandage during deep cuts. Wood is used for making toys.
<i>Ipomoea mauritiana</i> Jacq. <i>Pappucharu Tiga</i> (Convolvulaceae)	Tuber paste is administered orally twice a day for two months for treating impotency. Tender tips are used as a leafy vegetable.
<i>Lawsonia inermis</i> L. <i>Maidaaku</i> , <i>Gorinta</i> (Lythraceae)	Seed paste is given with a cup of water once a day for five days for treating motion with blood. Leaf paste is administered orally once a day for a month during gynaecological diseases.
<i>Malachra capitata</i> (L.) L. <i>Yerri Benda</i> (Malvaceae)	Leaf paste is used as an external ointment in treating skin eruptions. Stem fiber is used for making rope.
<i>Marsdenia volubilis</i> T. Cooke <i>Bandi Gurivinda</i> (Asclepiadaceae)	Slightly warmed leaf paste mixed with castor oil is used as an ointment during body pain.
<i>Moringa concanensis</i> Nimmo Ex Gibs. <i>Konda</i> <i>Mulga</i> , <i>Adavi Mulaga</i> (Moringaceae)	For post-natal complaints, stem bark decoction is administered orally with a pinch of honey once a day in early morning for three days. Root decoction is used as gargle for sore throat. For termination of foetus, crushed root bark and gum are administered.
<i>Mimosa pudica</i> L. <i>Atti Patti</i> , <i>Lajja Chettu</i> (Mimosaceae)	To increase potency, flower extract with honey and sugar is administered orally once a day for a month. For treating kidney stones, pinch of stem powder is administered orally once a day for two months.
<i>Operculina turpethum</i> Silva Manso <i>Tegada</i> (Convolvulaceae)	During constipation, root decoction is administered orally. Root decoction is administered orally twice a day for a week during indigestion.
<i>Pentapetes phoenicea</i> L. <i>Mankena</i> (Sterculiaceae)	Root decoction is administered orally twice or thrice in a day for three days for treating burning micturition.
<i>Pentatropis capensis</i> (L.F.) Bull. <i>Kukka Bachali</i> (Asclepiadaceae)	Slightly warmed leaf juice is used as a nasal drops in body pain and cold.
<i>Phyllanthus reticulatus</i> Poiret <i>Nalla Pulcheru</i> (Euphorbiaceae)	Tender tips extract is administered orally thrice a day for two days during loose motion. Tender tips decoction is administered orally once a day for a fortnight for treating piles. Tender tips paste is applied over maggot infested sores twice a day until cured.
<i>Plumbago zeylanica</i> L. <i>Chitra Mulamu</i> (Plumbaginaceae)	Tender leaves are used in curry during indigestion. Root paste is applied externally in maggot-infested sores. For treating rotting of teeth, stem bark paste is applied over the affected teeth.
<i>Pterospermum xylocarpum</i> (Gaertn.) Sant. & Wagh <i>Lolugu</i> (Sterculiaceae)	Stem bark extract is administered orally during stomachache. Stem bark paste is applied and tied with bandage for treating waist pain.
<i>Pupalia lappacea</i> (L.) Juss <i>Dubba Tittura</i> (Amaranthaceae)	Plant ash is applied over the bitten area for treating insect bite. For external tumors, tender tip paste mixed with sufficient quantity of turmeric and common salt is applied over the tumors.

Contd.

Table 1— Plants used by the ethnic people of Krishna district, Andhra Pradesh— *Contd.*

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<i>Sarcostemma acidum</i> (Roxb.) Voigt <i>Gundupaala Tiga</i> (Asclepiadaceae)	Leaf juice is used as ear drops during earache. For treating mad dog bite, extract of stem and grass of <i>Garika</i> (<i>Cynodon dactylon</i>) with turmeric is applied and tied with bandage over the bitten area twice a week for two weeks. Milky latex used as lotion.
<i>Streblus asper</i> Lour. <i>Barrenka</i> (Moraceae)	Leaf paste with those of <i>Chandanam</i> (<i>Santalum album</i>), mixed with a coconut oil is used as a lotion for treating eczema. In leucorrhoea, stem bark decoction is taken twice a day. During scanty urination, stem bark extract is given twice a day.
<i>Strychnos potatorum</i> L. F. <i>Chilla, Indupa</i> (Loganiaceae)	For treating burning micturition, fresh seeds are chewed and sap is swallowed. For treating tape worms in children, seed powder is given once a day for a week.
<i>Tragia cannabina</i> L.F. <i>Durdagondi</i> (Euphorbiaceae)	Paste of plant leaf, turmeric and common salt is smeared over the external tumors. Decoction of roots with the horse gram is administered orally once a day for fortnight during body pain.
<i>Tylophora indica</i> (Burm.F.) Merr. <i>Mekhameyani Aku</i> (Asclepiadaceae)	During bronchitis, tender tips extract is administered orally once a day for a fortnight. Tender tips paste is administered orally in early hours once a day for one month during gastric trouble.
<i>Ventilago denticulata</i> Willd. <i>Suligiri</i> (Rhamnaceae)	For treating leucoderma, stem bark paste with those of <i>Ximenia americana</i> (<i>Nakkeru</i>) and <i>Boswellia serrata</i> (<i>Anduga</i>) mixed with goat urine is administered orally twice a day for three days; rice is taken with buttermilk.

phlomidis (leaf), *Diospyros chloroxylon* (leaf), *Ocimum basilicum* (seed), *Randia dumetorum* (root bark), *Santalum album* (wood), *Sida cordifolia* (root) and *Ximenia americana* (stem bark) were used as potential ingredients in six diseases.

These medicinal plants are known to cure 22 types of ailments. The main ailments in the study area were boils, body pains/swellings, dog and insects bite, cold, chest pain, ear-ache, fever, foot cracks, general debility, gynecological disorders, hair problem, hydrocele, impotency, kidney stones, motions, panting, skin diseases, stomachache, toothache, wounds and external tumours. Large number of medicinal plant species is available for the treatment of skin diseases, body pains, swellings and stomachache. Half of the remedies for the above ailments are taken orally, followed by external application. To improve the acceptability of certain oral remedies, additives are frequently used. Most of the reported preparations in the area are drawn from a single plant; combinations are used in seven cases. The most widely sought after plant parts in the preparation of remedies in the study area are the leaves/tender tips (29) and stem bark/stem (28).

Conclusion

The ethnobotanical survey of the area reveals that the people possess good knowledge of herbal drugs but as they are in progressive exposure to the modernization, their knowledge on traditional uses of plants may be lost in due course. So it is important to study and document the knowledge on plants used by different ethnic people for the benefit of future

generations. Such studies may also provide valuable information to biochemists and pharmacologists in screening of individual species and their phyto-constituents to expedite the drug discovery and development process for the treatment of various diseases.

Acknowledgement

Authors thank Shri G Ganga Raju, Chairman, Laila Group and Mr G Rama Raju, Managing Director, Laila Impex, for their encouragement, local herbal practitioners for providing information and the Medak district Forest Department personnel, for their assistance during the fieldwork.

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