Traditional Knowledge on coolants used by the tribes of Khammam district, Andhra Pradesh

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Abstract

The present paper deals with 31 species of plants covering 28 genera and 26 families used as coolants by the tribes of Khammam district, Andhra Pradesh. Moraceae is the dominant family with 4 species followed by Caesalpiniaceae, Arecaceae (2 each) and others. Habit-wise analysis showed the dominance of trees (16) followed by shrubs (9), herbs (4) and climbers(2). Plant part-wise analysis showed the maximum usage of stem bark (7) followed by root (5), whole plant, leaf (4 each), tuber (3), flower, sap (2 each) and others. *Bougainvillea spectabilis, Millingtonia hortensis* and *Plumbago auriculata* and 14 practices were found to be new. The promising plants be subjected to pharmacological, bioclinical and biochemical tests for developing new drugs.

Keywords: *Coolants, Tribes, Khammam district, Andhra Pradesh*

Introduction

Refrigerants are medicines having cooling properties when applied on the surface of the body relieving fever. Sometimes these are taken orally to cool the body. An ethnobotanical survey was undertaken on the tribes inhabiting the thick forest areas of Khammam district, Andhra Pradesh during 2008-2012. It lies between 16^0 45' and 18^0 35' N latitude and 79^0 47' to 81^0 47' E longitude occupying an area of 16, 029 sq km with a total forest area of 7, 594. 38 sq km. The largest river of South India, the Godavari passes through this district. The tribal population of India is 8. 2% and Andhra Pradesh has 7. 0% tribal population (Census 2011). The Khammam district has the highest tribal population (26. 47%) in the state with six tribes, *viz*. , *Koya, Lambada, Gond/Naikpod, Yerukula, Nayak* and *Konda Reddi.*

Methodology

Ethnobotanical survey was conducted once in every two months from 2008 to 2012 with a duration of 10-15 days. About 4-7 days were spent during each field trip with different tribal communities at their dwellings. After establishing good rapport, the utility of plants and detailed methods of uses were documented. Herbarium specimens were deposited in the Herbarium of the Department of Botany, Andhra University, Visakhapatnam after proper identification.

Enumeration

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

Bougainvillea spectabilis Willd. Nyctaginaceae VN: Kagithampoolu E: Bougainvillea, Guvvagudem, 10075

Whole plant decoction mixed with one spoonful of sugar is administered in three spoonful daily once till cure.

Butea monosperma (Lam.) Taub. Fabaceae VN: Moduga E: Flame of the forest, Thungaram, 10116

Stem bark decoction is administered in two spoonful once a day for 4 days.

Caesalpinia pulcherrima (L.) Sw. Caesalpiniaceae VN: Puvvutangedu E: Peacock flower, Wazeed, 10117

*Flowers ground with seeds of *Syzygium cuminii* and *Gymnema sylvestre* are made into decoction and administered once a day for 2 days.

Canna indica L. Cannaceae VN: Satyanarayana chettu E: Indian reed, Govindarala, 10179

*Root decoction is administered in doses of two spoonful twice daily.

Caryota urens L. Arecaceae VN: Jeelugu E: Fish tail palm, Gowridevipeta, 10153

Toddy is taken once a day for 2 days.

Cassia auriculata L. Caesalpiniaceae VN: Tangedu E: Tanners cassia, Peruru, 10122

*Three spoonful of leaf juice is administered once a day for 2 days.

Ceiba pentandra (L.) Gaertn. BombacaceaeVN: Tellaburuga E: White silk cotton tree, Gowridevipeta, 10194

*Stem bark decoction mixed with a spoonful of sugar is administered in two spoonful twice daily for 10 days.

Cocculus hirsutus (L.) Diels Menispermaceae VN: Dusari theega E: Broom creeper, Kesavapuram, 10024

Stem decoction mixed with sugar is administered in 50 ml dose once a day for 3-5 days.

Cocos nucifera L. Arecaceae VN: Kobbari chettu E: Coconut, Paleru, 10088

Coconut toddy is taken daily.

Cyperus rotundus L. Cyperaceae VN: Tunga mustalu veru E: Nut grass, Vissapuram, 10356

Root tuber decoction is taken in 10 ml dose once a day.

Dioscorea bulbifera L. Dioscoreaceae VN: Ada-vidumpa E: Bulb bearing yam,Vissapuram, 10357

*Fifty ml of tuber decoction mixed with sugar is administered orally twice a day for 2-3 days.

Ficus benghalensis L. Moraceae VN: Marri E: Banyan tree, Mamuluru, 10261

Five g of tender prop root paste mixed with one spoonful of crystal sugar, half spoon of cumin seeds and curd is kept in a pot and exposed to sunlight is administered once a day.

F. carica L. Moraceae VN: Anjooramu E: Common fig, Bayyaram, 10293

*Five ml leaf juice mixed with 5 ml of goat milk is administered in 10 ml dose twice a day for 3 days.

F. microcarpa L. *f.* Moraceae VN: Juvvi E:Chinese banyan,Chikupalli, 10260

*Stem bark decoction is administered in two spoonful once a day for 2 days.

F. religiosa L. Moraceae VN: Raavichettu E: Sacred fig tree, Dummugudem, 10365

Stem bark decoction in 3 spoonful is given once daily.

Gymnema sylvestre (Retz.) R. Br. ex Schult. Asclepiadaceae VN: Oodhi chettu E: Small Indian ipecacuanha, Peruru, 10325

Whole plant decoction mixed with half tea spoon of black pepper is administered in doses of 30 ml twice a day for 7 days.

Hibiscus rosa-sinensis L. Malvaceae VN: Mandara E: Chinese rose, Mukundapuram, 10281

Leaf juice mixed with coconut water is applied on the head every day.

Jasminum angustifolium (L.) Willd. Oleaceae VN: Adavimalle E: Wild jasmine, Singabhupalem, 10247

Ten ml of root decoction is administered twice a day for 5 days.

Maerua oblongifolia (Forssk.) A. Rich. Capparaceae VN: Bhuchakragadda E: Desert maerua, Peruru,

10347

*Thirty ml of tuber decoction mixed with one spoonful of honey is administered once a day for 5 days.

Mallotus philippensis (Lam.) Muell. -Arg. Euphorbiaceae VN: Sindhuram E: Kamala tree, Yerram Padu, 10311

*Twenty ml of flower decoction mixed with one spoon of crystal sugar is administered once a day for 2 days.

****Millingtonia hortensis*** L. *f.* Bignoniaceae VN: Boddumalli E: Tree jasmine,Chintur, 10343

Two spoonful of stem bark decoction is administered twice daily.

Murraya paniculata (L.) Jack Rutaceae VN: Naga lingam E: Orange jasmine, Charla, 10204

*Ten ml of root decoction mixed with a spoonful of honey is administered twice a day for 2 days.

Musa ornata Roxb. Musaceae VN: Adavi arati E: Wild banana, Edugurallapalli, 10305

Fifty ml of tuber decoction mixed with honey is administered twice a day for 5 days.

Nelumbo nucifera Gaertn. Nelumbonaceae VN: Tamara E: Sacred lotus, Bhadrachalam, 10294

Petiole juice is administered in two spoonful daily once.

Pandanus odoratissimus L. *f.* Pandanaceae VN: Mogali E: Screw pine, Soraveedu, 10339

Root decoction is administered once a day for 2 days.

****Plumbago auriculata*** Lam. Plumbaginaceae VN: Neelichitramulam E: Lead wort blue flower, Tekulapalem, 10457

Whole plant decoction is administered in two spoonful twice a day.

Strychnos nux-vomica L. Loganiaceae VN: Mushini E: Snake wood, Bhadrachalam, 10493

*Ten ml of root bark decoction is taken orally once a day for 2 days.

Tridax procumbens L. Asteraceae VN: Gayapaaku E: Coat-buttons, Vajedu, 10408

Whole plant decoction is administered in 10 ml dose twice a day for 2 days.

Wrightia tinctoria R. Br. Apocynaceae VN: Ankudu E: Sweet indraja, Peruru, 10471

*Seed oil is applied all over the body to AIDS patients for body cooling.

Ximenia americana L. Olacaceae VN: Nakkera E: False sandal wood, Nagupalli, 10349

*Thirty ml of stem bark decoction is taken once a day for 7 days.

Ziziphus mauritiana Lam. Rhamnaceae VN: Regu E: Indian jujube, Tekulapalem, 10095

*Stem bark decoction is taken in one spoonful once a day.

Results and Discussion

The study yielded 31species of plants spread over 28 genera and 26 families. Moraceae is the dominant family with 4 species followed by Caesalpiniaceae, Arecaceae (2 each) and the rest of the families each with one species. Habit-wise analysis showed the dominance of trees (16) followed by shrubs (9), herbs (4) and climbers(2). Plant part-wise analysis showed the maximum usage of stem bark (7) followed by root (5); whole plant, leaf (4 each); tuber (3); flower, sap (2 each); stem , prop root, root bark and seed, one each. *Bougainvillea spectabilis, Millingtonia hortensis* and *Plumbago auriculata* and 14 practices were found to be new (Jain, 1991; Kirtikar and Basu, 2003). *Cocculus hirsutus* and *Cyperus rotundus* are also used as coolants in the hot Indian Arid Zone of Rajasthan (Suresh Kumar *et al.,* 2008). *Cocculus hirsutus* and *Ziziphus mauritiana* are also used for cooling purposes by the tribes *Gond, Kol, Baiga, Panica, Khairwar, Manjhi, Mawasi* and *Agaria* of Rewa district, Madhya Pradesh (Shukla *et al.,* 2010) and *Caryota urens* and *Cocculus hirsutus* by the *Bagata* tribe of Visakhapatnam district, Andhra

Pradesh (Sandhya Sri and Seetharami Reddi, 2014). These plants act as coolants in cooling the body in case of high temperature. The herbal medicines are cheaper with no side effects. However, more detailed studies are needed on these plants to treat large populations effectively by using plant based formulations.

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