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HEALING PLANTS USED FOR CHEST DISEASES BY THE TRIBES OF ETTURNAGARAM WILDLIFE SANCTUARY, TELANGANA STATE, INDIA

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ABSTRACT More than 2000 plants have been listed in the Traditional (Herbal/Alternative) systems of medicine and some of these are providing comprehensive relief to the people suffering from cardio-vascular diseases. WHO reports indicate that around eighty percent of the global population still relies on botanical drugs and several herbal medicines have advanced to clinical use in modern times. Based on these findings, present review is written to identify the "Pharmacology and Cardio-vascular Application" of herbal plants commonly used by the Tribes of Etturnagaram Wildlife Sanctuary, Telangana State, India

KEYWORDS : Chest Diseases, Tribes, Medicinal Plants, Wild Life Sanctuary

INTRODUCTION

The word ethno botany was originally devised by an American botanist (Harshberger, 1895). Plants are closely associated with the life of men and other animals. Men are especially concerned when they need medicines for various ailments. It is observed that animals heal themselves by eating particular plants when they are ailing (Ravishankar, 1990). This is true even with domesticated animals. The animals select required plants accurately if they are available in the vicinity and do not confuse them with species which look very similar and may confound even a good plant taxonomist. This knowledge is inborn in animals as an instinct. It can be assumed that such as instinct was present with early human beings also (Krishna, 2014).

Historically, herbs have been used for medical purposes, but their usage continues even nowadays (Lord and Tagore, 1999).It is estimated that about 25% of currently commercialized medications are derived from plants used in traditional medicine, and according to a recent survey, 1 of every 5 persons in the United States has taken some herbal or dietary supplementation during his or her life (Wu, et al.2014). Proportions are even higher in developing countries due to reduced accessibility to essential medications and a more marked herbalism tradition. For example, in China, 30% to 50% of medications consumption consists of traditional herbs (Hussain, 2006).

There is little doubt that Traditional Medicines have been utilized since antiquity in the health care. However, with the advent of the pharmaceutical industry early in this century, the popularity of traditional/herbal medicine declined, in spite of the fact that twenty five percent of all prescription drugs still contain ingredients isolated from plants. The resources now do exists which can help and assist for greater understanding of the ways in which herbs can facilitate health and restore balance in disease (Murray and Pizzorno, 1991).

The usages of medicinal plants for chest diseases have been investigated and reported by many workers (Petkov, 1979; Patel, 1982; Satyavati, 1988; Weiss, 1988; Ceriana, 1992; Singh et al., 1993; Leuchtgens, 1993; Schüssler et al., 1995; Chatterjee et al., 1997).

MATERIALS AND METHODS

Geography of the Location

The Etturnagaram wildlife sanctuary is located in the Warangal District of Telangana State. (Map.1.)The location which the snake found lies between 17°29'16" and 18°36'20"N and 78°49'49" and 80°40'13"E. The division has a geographical area of 8,687.81 km2 which is 67.6% of the total area of the district (12,847 km2). Elevation is between 266 and 518 m, with a general SE slope along which surplus waters drain into the river Godavari. The climate is tropical, generally dry with temperature ranging from 15°C to 45°C and annual rainfall of 1182 mm, received mainly through south-west monsoon. Soils are primarily black cotton, loamy, sandy, and red chalaka. The area under forest cover is 2,310 km2, 27% of the total geographical area of the division. The forest canopy density categories are moderately dense forest (953 km2), open forest (1015 km2), scrub (91 km2), and non-forest (244 km2). The forest division has six ranges: Bhupalapally North, Eturnagaram, Tadvai, Pasra, Mulugu, and Warangal. The research area was in Tadvai and Eturnagaram ranges which include Eturnagaram Wildlife Sanctuary. This research was conducted among the Koya and Lambadi Tribes settled in the wildlife sanctuary.

Plant collection and identification

This data is collected during the study period from March 2016 to February 2017. During this period, weekly collections were taken from flowering plants during early morning. Every time, fresh collected materials were exhibited to the taxonomic expert to get the taxonomic information about the plants. The photographs of selected plants were also taken during the field trips. The habitual data were recorded in the field note book. Polythene bags were used to keep the collected materials in fresh condition. Hand lens was used for recording the morphological characters. The collected plants were brought to the herbarium room for preservation and further identification.

The collected plants were identified correctly and confirmed by referring various flora like The flora of Nilgiri and Pulney Hill top by Fyson (1921), The flora of presidency of madras by Gamble and Fischer (1957). In addition to the above flora Joseph (1981), Nair and Sasthri (1987) Sasidharan (2004) and Prakash *et al* (2006) were referred.

Identified plants were verified and by the herbarium of TBG&RI, Palode, Thiruvananthapuram. The plant specimens and their medicinal uses, Habit, useful part, for which the particular plant is thoroughly verified with Kirthikar and Basu (1980).

The data gathered through interviews was verified with the available literature (Yoganarasimhan and Chelladurai, 2000; Parota, 2001).

The relevant information about the local names, their morphological useful parts and Tribal medicinal uses for the treatment of various diseases were gathered from the Lambadi and Koya Tribal villagers, herbal plant collectors and local practitioners from in and around village of the study area. They were mostly were not willing to reveal the combinations and usages completely.

RESULT AND DISCUSSION

Binomial : ***Euphorbia thymifolia Linn.***
Family : ***Euphorbiaceae***

Plant properties: A small much branched more or less pubescent prostrate annual herb with divaricate branches; Lvs. simple, opposite, rounded at the apex, petioles very short. Fr. Capsules, obtusely keeled, pubescent. Sd. 4-angled with faint furrows.

Tribal medicinal use: Decoction of whole plant is given to patients suffering from chest Diseases.

Traditional medicinal use: It is useful in cardiac debility
Binomial : ***Hibiscus abelmoschus Linn.***
Family : ***Malvaceae***

Plant description : An erect annual herb. Lvs. simple, serrate, hairy on both surfaces. Fl. Large, yellow and scented. Fr. Capsule. Sd. Many,

subreniform.

Tribal medicinal use : Seeds are boiled with *Oscimum* leaves is given for Chest Pain.

Traditional medicinal use : The seeds are used cardiac debility and general debility.
Binomial : ***Mentha arvensis Linn.***
Family : ***Lamiaceae***

Plant properties : An erect aromatic herb with suckers; Lvs. simple, opposite, shortly petioled, oblong, ovate or lanceolate, crenate -serrate, cuneate at the base; Fl. lilac in axillary distant whorls; Fr. nutlets, smooth.

Tribal medicinal use : Leaves are used along with Ocimum leaves to prepare steam inhalation against severe chest infection.

Traditional medicinal use : The leaves are useful in bronchitis.
Binomial : ***Merremia emarginata (Burm.f.) Hall.f.***
Family : ***Convolvulaceae***

Plant properties : A creeping perennial herb rooting at the nodes; Lvs. simple, long stalked, reniform; Fl. yellow, axillary, very short peduncles which are shorter than the petioles; Fr. subglobose capsules with 2-4 glabrous light brown seeds.

Tribal medicinal use : Leaves are ground and applied at the site of rat bite

Traditional medicinal use: The plant is useful in nephropathy and cardiac diseases.
Binomial : ***Michelia champaca Linn.***
Family : ***Magnoliaceae***

Plant properties: A tall handsome evergreen tree, Lvs. simple, alternate, lanceolate, subcoriaceous, entire, glabrous above; Fl. yellowish, very fragrant, solitary and axillary; Fr. ovoid or ellipsoid capsules, dark brown opening on the back by two valves, valves woody, covered with white warty excrescences, Sd. brown, rounded on the back with pink fleshy aril.

Tribal medicinal use : Fruits are applied externally to heal chest infections.

Traditional medicinal use : The root and root bark are purgative and emmenagogue and are useful in the treatment of cough, bronchitis and cardiac debility. Flowers, flower buds and fruits are useful cough, bronchitis, allied with malarial fever.
Binomial : ***Myristica fragrans Houtt.***
Family : ***Myristicaceae***

Plant properties: A moderate sized, usually dioecious, aromatic, evergreen tree. Lvs. elliptic, thinly coriaceous, shiny above, dull beneath; Fl. creamy yellow, fragrant in umbellate cymes. Fr. yellow, globose. Sd. oblong, testa shiny.

Tribal medicinal use : The fruit along with many other things is made into decoction and it is used for treating asthma.

Traditional medicinal use: The nutmeg and mace are useful in cough, asthma, and cardiac disorders.
Binomial : ***Nelumbo nucifera Gaertn.***
Family : ***Nympheaceae***

Plant properties: A large handsome aquatic herb with slender, elongate, branched, creeping, rhizomes, sending out roots at the nodes; Lvs. peltate, petioles very long, smooth or with small prickles, much raised out of water; Fl. solitary, large, fragrant, white or rosy with a centrally located yellow obconical spongy torus in which carpets are sunken; Fr. ovoid, nut-like achenes.

Tribal medicinal use : Leaf juice and Flowers are used in treating chest externally.

Traditional medicinal use: The plant is useful in cardiac debility. The roots are useful in pharyngopathy, pectoralgia and cough.
Binomial : ***Nerium indicum Mill.***
Family : ***Apocynaceae***

Plant properties: A large glabrous evergreen shrub with milky latex; Lvs. three in a whorl, shortly stalked, linear, dark green and shiny above; Fl. red, rose -coloured or white, fragrant; Fr. follicles.

Tribal medicinal use : Root decoction is given to treat chest infection.

Traditional medicinal use: The roots are useful in cardiac asthma.
Binomial : ***Ocimum basilicum Linn.***
Family : ***Lamiaceae***

Plant properties: An erect, aromatic, nearly glabrous branching herb, 60-90 cm in height, branches green or purplish; Lvs. simple, opposite, ovate, acute. entire or toothed, base cuneate, glabrous on both surfaces; Fl. white or pale purple in simple or much branched racemes.

Tribal medicinal use : Leaves are used in steam inhalation for acute cold and chest infections. The leaf decoction along with other herbs is taken to relieve cold, cough, fever, etc.

Traditional medicinal use: The plant is useful in cardiac debility cough, asthma, bronchitis.
Binomial : ***Phyllanthus emblica* L.**
Family : **Euphorbiaceae**

Plant properties: A small to medium sized deciduous tree. Lvs. Simple, many, subsessile, closely set along the branchlets, distichous. Fl. greenish yellow Fr. globose and fleshy.

Tribal medicinal use : The fruits are used in chest disease.

Traditional medicinal use: The fruits are useful in cough, asthma, bronchitis, and cardiac disorders.
Binomial : ***Prunus cerasoides* D.Don**
Family : **Rosaceae**

Plant properties: A medium sized tree with pale red wood and smooth brown bark peeling off in horizontal strips exposing a shining copper-coloured surface; Lvs. Simple and alternate; Fl. white, pink or crimson in fascicles or umbels; Fr. ovoid or globose drupes.

Tribal medicinal use : The bark peels are used for making drinking water and it is very much good to chest relief.

Traditional medicinal use: The heartwood is useful in hiccough, asthma and cardiac debility.
Binomial : ***Rosa centifolia* Linn.**
Family : **Roasaceae**

Plant properties: A small, erect, prickly shrub with unequal, large, hooked prickles and many bristles; Lvs. compound, alternate; Fl. usually pink, very fragrant, very double on long slender pedicels. Sd. small, pendulous.

Tribal medicinal use : Rose water is used as eye drops for infections.

Traditional medicinal use: The flowers are useful in cough, asthma, bronchitis.
Binomial : ***Santalum album* L.**
Family : **Santalaceae**

Plant properties: A medium sized evergreen, semiparasitic, glabrous tree; Lvs. simple, opposite, elliptic, glabrous, entire; Fl. brownish purple, reddish purple or violet in terminal and axillary paniculate cymes; Fr. globose, purple black with ribbed endocarp; Sd. hard, globose. The wood is highly scented.

Tribal medicinal use : Poultice of the heart wood is applied for chest ache.

Traditional medicinal use: The heartwood is useful in cardiac debility**,** cough, bronchitis and general debility.
Binomial : ***Solanum melongena* Linn.**
Family : **Solanaceae**

Plant properties: An erect or suffrutescent, herbaceous, unarmed perennial; Lvs. simple, large, entire, lobed; Fl. blue, in clusters. Fr. dark purple berries. Sd. many, yellow or cream, discoid.

Tribal medicinal use : Root paste is used for internal inflammations.

Traditional medicinal use: The roots are used in cardiac debility . Leaves are useful in bronchitis, asthma and fever.
Binomial : ***Solanum nigrum*** **Linn.**
Family : **Solanaceae**

Plant properties: An erect, divaricately branched, unarmed, suffrutescent annual Lvs. ovate or oblong, sinuate-toothed or lobed, glabrous; Fl. cymes; Fr. Purplish black berries, Sd. many, discoid, yellow, minutely pitted.

Tribal medicinal use : A decoction of the berries and flowers is useful in cough.

Traditional medicinal use: The plant is useful in cough, asthma, bronchitis, wounds cardiopathy and general debility. A decoction of plant depresses the central nervous system and has influence on cardiac activity and in the regulation of blood pressure. A decoction of the berries and flowers is useful in cough, bronchitis and pulmonary tuberculosis.
Binomial : ***Solanum suratense*** **Burm.f.**
Family : **Solanaceae**

Plant properties: A prickly; diffuse bright green suffrutescent, perennial unders woody at the base, with zigzag branches Lvs. ovate; Fl. blue or bluish-purple, in extra-axillary cymes: Fr. glabrous, globular drooping berry, Sd. many, small, reniform, smooth and yellowish brown.

Tribal medicinal use : The leaf juice is applied externally to treat chest infections.

Traditional medicinal use: The plant is useful in cough, asthma. bronchitis, cardiac disorders .
Binomial : ***Vitex negundo Linn.***
Family : **Verbinaceae**

Plant properties: An aromatic large shrub or with quadrangular branches; Lvs. opposite, exstipulate, long petioled. Fl. bluish purple in panicles; Fr. Globose. four-seeded drupe, black when ripe.

Tribal medicinal use : Leaf juice mixed with *Ricinus* oil is good for back pain and inflammations.

Traditional medicinal use: The roots are useful in bronchitis, cough and general debility. The flowers are useful in haemorrhages. hepatopathy and cardiac disorders.
Binomial : ***Ananas comosus*** **Merr.**
Family : **Bromeliaceae**

Plant description : A herbaceous perennial Lvs. numerous, spirally, and compactly arranged. Spiny margins, toothed, shining on the upper surface. Ifl. small, much reduced, reddish, in terminal heads and ovoid. Reddish bracteoles, numerous, triangular-ovate, imbricate. Composite Fr. succulent, bearing a crown of leaves.

Tribal medicinal use : The juice from unripe fruit is a good purgative.

Traditional medicinal use : The unripe fruits are useful in cardiac debility.
Binomial : ***Aristolochia indica*** **Linn.**
Family : **Aristolochiaceae**

Plant description : Climbers or twinners with greenish – white grooved stem and long, twisted slightly tuberous roots. Lvs. ovate. Entire with undulate margins. Fl. pale green with inflated base and narrow cylindrical tube. Fr. an oblong capsule. Sd. flat and winged.

Tribal medicinal use : \ The dried root powdered and given with honey to treat leucorrhoea.

Traditional medicinal use : The roots useful in cardiac debility.
Binomial : ***Artocarpus communis*** **Forst.**
Family : **Moraceae**

Plant description : A tall fast growing evergreen tree with thick yellowish grey bark. Lvs. large. Simple. Fl. in catkins. Fr. prickly, globose, usually seedless**.**

Tribal medicinal use : The fruit is a tasty and nutritious vegetable to cure chest ailments.

Traditional medicinal use : The fruits are useful cardiac debility and agalactia.
Binomial :***Boerhaavia diffusa*** **Linn**
Family :**Nyctaginaceae**

Plant description: A perennial diffuse herb with stout root stock and many procumbent branches. Lvs. simple, opposite, short petiolated in unequal pairs, acute, or obtuse, rounded or subcordate at base. Glabrous above, and whitish beneath; Fl. pale rose in colour small, short stalked, in irregular clusters of terminal panicles at the ends of branches. Fr. are highly viscid, easily detachable, one seeded, indehiscent with a thin pericarp.

Tribal medicinal use : The juice of the plant is mixed with breast milk and the mixture is used to cure infections.

Traditional medicinal use: The plant is useful in all types of inflammations, strangury, leucorrhoea, ophthalmia, lumbago, cardiac disorders, jaundice, constipation and general debility.
Binomial : ***Capsicum annuum*** **Linn.**
Family : **Solanaceae**

Plant description : A suffrutescent annual shrub. Lvs. simple, of varying shapes, entire, acuminate, usually wrinkled; Fl. white or violet, in clusters of two or more; Fr. long, cylindric, ovoid, obtuse or oblong, red when ripe with smooth shiny surface; Sd. many, yellow, smooth, round, discoid with a spinescent protuberance on the edge.

Tribal medicinal use : Fruits are ground with alcohol and mixed with raw egg and given to cure internal injuries .

Traditional medicinal use: The fruits are useful in cough, cardiac debility, malarial and intermittent fevers

CONCLUSION

The study highlighted a rich diversity of indigenous medicinal plants with equally divergent herbal remedy preparation and use pattern among the tribal groups in Etturnagaram Wildlife sanctuary. Baseline information gaps were observed in key geographic settings. Likewise, herbal remedy toxicity risks and countermeasures generally entailed more exhaustive investigation. Experimental research and advanced chemical analysis are also required to validate the therapeutic potential compounds from promising plant species.

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