



## MEDICINAL PLANTS USED FOR RENAL DISEASES BY THE TRIBES OF ETTURNAGARAM WILDLIFE SANCTUARY, TELANGANA STATE, INDIA

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### ABSTRACT

Alternative and indigenous systems of medicine are popular amongst the poorer sections of society in the developing world. Their use in the developed world has also increased in recent times. The source and composition of these medicines vary in different parts of the world, but herbs and other botanicals are central to these systems. Largely outside the ambit of regulatory control, herbal remedies are prepared by quasi-trained herbalists and not tested for safety. Toxicity can occur when a herb with unknown toxicity is consumed, incorrect identification leads to substitution of an innocuous herb with a toxic one, preparations are contaminated with toxic non-herbal compounds or when a herb potentiates the nephrotoxic effect of a conventional therapy. The present investigation was to find the herbal medicines used by the Lambadi and Koya Tribes of Etturagaram Wildlife Sanctuary for treating Kidney disorders.

**KEYWORDS:** Kidney, Koya, Lambadi, Herbal, Wildlife Sanctuary.

### INTRODUCTION

It is one of the peculiarities of herbal drugs that their indications have for the most part been determined empirically. The reason is easily understood because most herbal drugs have been used for a long time to alleviate or cure illnesses and more especially disorders. Their introduction in therapeutics happened at a time when "Pharmacodynamics" and "Pharmacokinetics" were unknown concepts, when there was no "Medicine Act" to require proof of the quality, efficacy, and safety of herbal medicines. Today, when introducing a new medicine, extensive investigations are required in the interest of safety. Too many, the requirement of the proof of activity of a drug appears to be superfluous; but nevertheless, as a representative of a scientifically oriented pharmaceutical science, one strives to pluck herbal drugs out of their present level of pure empiricism and by elucidating their active principles give their application a more secure basis (Wichtl, 1994).

Kidney stones are the third most common urinary tract problems, after urinary tract infections and prostate diseases. Most people with kidney stones suffer from severe colic pains that are not relieved by conventional pain killers and may require narcotic analgesics. In addition to pain, urinary tract obstruction, urinary tract infection, hydronephrosis and severe bleeding may occur

and in some cases, surgery is required to remove or break stones (Khan and Thamilselvan, 2000).

The introduction of ESWL in the 1980s revolutionized the treatment of urinary stones. Today, more than 90% of patients with upper urinary tract stones are treated based on the size, type and location of the stone, with a treatment success rate of 68%-86% (Sarrafchi, *et.al*, 2016). It has been reported that increased dietary protein intake may elevate the rates of developing kidney stones. Kidney stones are common clinical disorders and have both high incidence and high prevalence in the world. The prevalence of kidney stones is influenced by geographic location, lifestyle, race/ethnicity and other factors. In different studies, its world prevalence has been reported to be about 1%-15%. Iran has a high incidence of kidney stones prevalence. Approximately 75% of all kidney stones are calcium stone which composed of calcium oxalate and/or calcium phosphate (Stamatelou, *et.al*. 2013).

### MATERIALS AND METHODS

#### Geography of the Location

The Etturagaram 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 km<sup>2</sup> which

is 67.6% of the total area of the district (12,847 km<sup>2</sup>). 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 chhalaka. The area under forest cover is 2,310 km<sup>2</sup>, 27% of the total geographical area of the division. The forest canopy density categories are moderately dense forest (953 km<sup>2</sup>), open forest (1015 km<sup>2</sup>), scrub (91 km<sup>2</sup>), and non-forest (244 km<sup>2</sup>). 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 : *Tribulus terrestris* L.  
Family : Zygophyllaceae

**Plant properties:** An annual or perennial, prostrate herb with many slender, spreading branches Lvs. simple, pinnate, opposite, leaflets almost sessile, rounded or oblique at the base, mucronate at the apex; Fl. bright yellow, solitary, pseudo-axillary. Fr. winged spinous tuberculate woody schizocarp; sd one or more in each coccus.

**Tribal medicinal use:** Leaf decoction is given for kidney failure. It enhances urination.

**Traditional medicinal use:** The roots and fruits are useful in renal and vesical calculi

Binomial: *Aerva lanata*(Linn)Juss.ex Schultes  
Family : Amaranthaceae

**Plant description:** Erect herb Lvs. closely alternate, ovate. Spike clustered axillary Fl. Minute Greenish or creamy white. Bisexual Fr. are ovoid, acute. Black bean shaped seeds.

**Tribal medicinal use:** Leaf juice is given against kidney stones.

**Traditional medicinal use:** It is useful to treat boils, cephalalgia, cough, strangury and lithiasis.

Binomial : *Amaranthus viridis* (L.)  
Family : Amaranthaceae

**Plant description:** Monoecious annual herbs; St. erect or occasionally ascending, Lvs. ovate to narrowly rhombic, Fl. green, in slender, axillary or terminal and often paniculate spikes Fr. subglobose, Sd. dark brown to black, more or less shiny, slightly compressed.

**Tribal medicinal use:** Cooked leaves and stem is good for general kidney debility

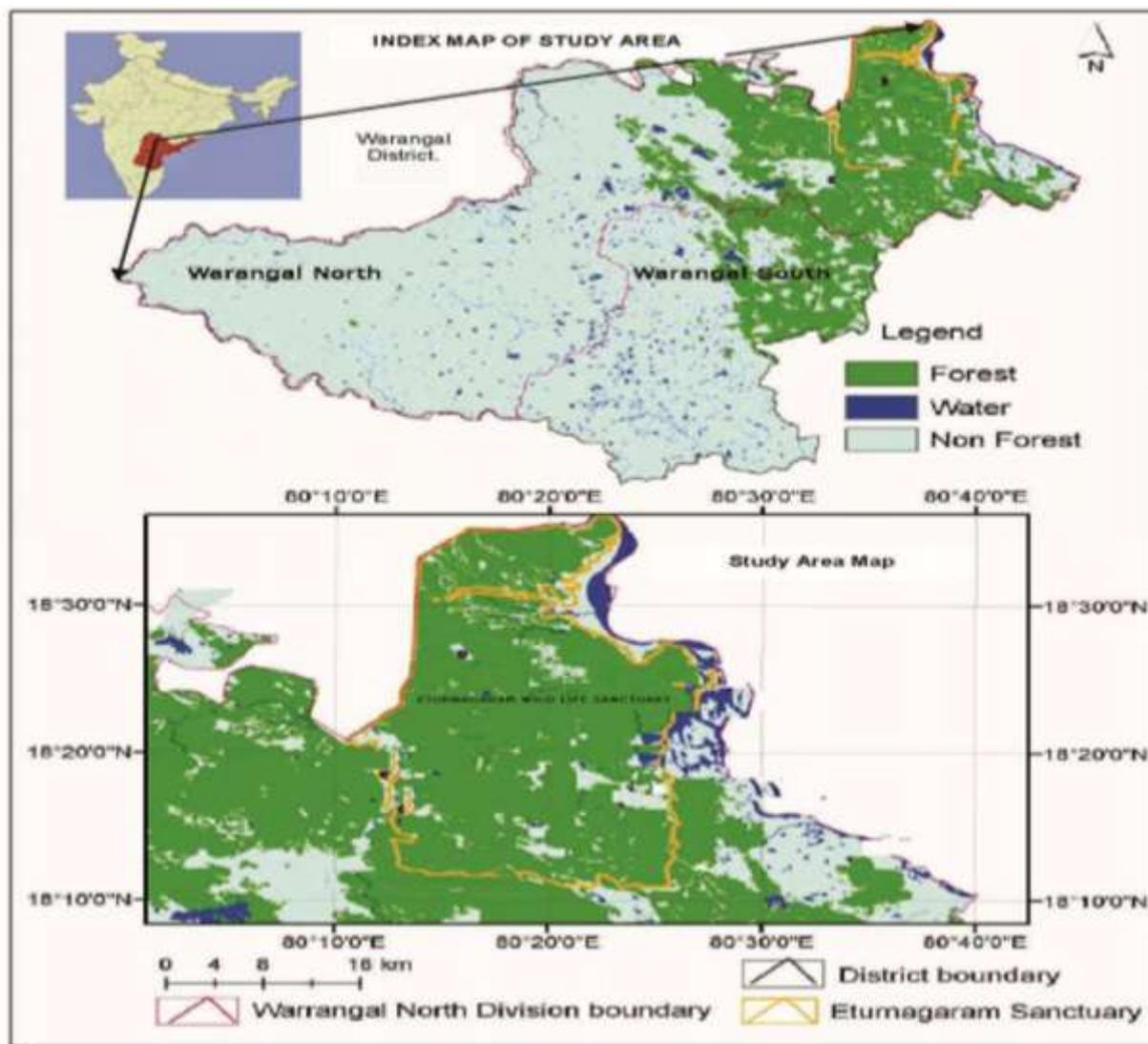
**Traditional medicinal use:** It is useful in kidney ailments and general debility.

Binomial : *Anacardium occidentale* Linn.  
Family : Anacardiaceae

**Plant description:** Spreading ever green tree. Lvs. are ovate, oblong, coriaceous and glabrous Fl. small, yellow with pink stripes, in terminal panicles. Fr. is a kidney shaped nut borne on fleshy receptacle.

**Tribal medicinal use:** The fermented fruit juice is used to treat kidney troubles and advanced cases of cholera.

**Traditional medicinal use:** The gum from the bark is recommended in kidney diseases.



## 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 Ettumagaram 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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