

## Research and Reviews: Journal of Botanical Sciences

### A Potent Folklore Medicinal Plant: *Cadaba fruticosa* (L.) Druce

J Shashikanth, Ch Mohan and P Ramachandra Reddy.

Plant Anatomy and Taxonomy Laboratory, Department of Botany, Osmania University, Hyderabad-500 007, India.

#### Research Article

Received: 10/05/2014  
Revised : 28/05/2014  
Accepted: 03/06/2014

#### \*For Correspondence

Plant Anatomy and  
Taxonomy Laboratory,  
Department of Botany,  
Osmania University,  
Hyderabad-500 007, India.

**Keywords:** Medicinal  
plants, *Cadaba fruticosa*  
(L.) Druce, Animal health  
care, Neurological  
disorders.

#### ABSTRACT

This communication is aimed to document the traditional medicinal uses of *Cadaba fruticosa* (L.) Druce and to propose conservation strategies for rare species occurring Nalgonda district, Andhra Pradesh. A rare plant species *Cadaba fruticosa* (L.) Druce has been locally used to treat by the indigenous people since time immemorial and needs immediate attention for conservation. Some of these are believed to promote positive health and maintain organic resistance against infection by re-establishing body equilibrium and conditioning the body tissues. The folk use of plants in medicinal value is an important part of the health care system. *Cadaba fruticosa* (L.) Druce has been recorded as a medicinal plant in Indian traditional system, while present investigations helpful for folklore medicinal importance, Animal health care, phytochemical screening and pharmacological activities. The present paper aims to explore the ethnomedicinal importance. Ethnomedicinal uses of *Cadaba fruticosa* (L.) Druce practiced by villagers of Nalgonda district and compared with the medicinal uses of valid publication.

#### INTRODUCTION

More than 905 medicinal plants are being sourced from forests and other wild habitats. Ironically, dwindling of natural habitats has resulted in a sharp decline in the population of several medicinal plant species of high potential. More over there is a rapid erosion of folklore culture due to fast changing lifestyle under the influence of modernization. Thus, it is high time to document the traditional knowledge lying concerned among ethnic communities before it is lost forever. To meet the demand of ever increasing population, there is need for scientific validation of folk claims so that new drugs can be developed. *Cadaba fruticosa* (L.) Druce most suitable for the sustainable utilization and development of local resource based herbal drugs. Herbal medicinal plants are still playing a very important role in the primary health care among the tribal and rural people, not only in remote areas but also among the urban areas, local vaidyas are playing a commendable role in promoting the treatment of some disease through herbal drugs. Many people of rural and urban areas depend upon treatment, which has been developed through prolonged traditional experience. Leaf juice is used as a remedy for dysentery, stimulant, purgative, fever, cough and lungs problem [23]. Moreover, it was reported to possess stachydrine, 3-hydroxystachydrine from the stem, roots and cadabine from leaves [22, 24] Cadabalone, cadabaicine were isolated from the leaf [5]. Leaves are reported to possess antimicrobial activity [4]; anti pyretic activity [10], anti-diabetic activity [2]. Leaf aqueous extract revealed terpenoids, flavones, proteins, furans; anthraquinones and sugars are present and alcoholic extract possesses steroids, alkaloids, gums and saponins [2]. The present paper deals with the botany and ethnobotany of the plant used different vernacular names. The present study has been undertaken with the aim to record the traditional medicinal utilities of *Cadaba fruticosa* (L.) Druce.

## METHODOLOGY

Study area was frequently visited during the 2008-2013. Extensive surveys were made in the two villages viz., Inupamula, Kethepally Mandal and Yarasani Gudem, Kattangur Mandal of Nalgonda District. The collected plant specimens were identified with help of local florists. Voucher specimens were preserved in Herbarium Hyderabadensis (HY), Department of Botany, Osmania University, Hyderabad. Photographs were also taken during the field work. The data were gathered from knowledgeable persons who practice and experience about animal husbandry and veterinary medicines, farmers, cattle growers, house wives, local herbalists and healers. The information was further verified cross checking with other experienced persons.

The information regarding *Cadaba fruticosa* (L.) Druce folklore medicinal uses extracted from the traditional books, journal and reports. Village folklore practitioners are having tremendous medicinal knowledge. They use certain plant species in the treatment of various diseases one of the most important ethnomedicinal plants of the district is *Cadaba fruticosa* (L.) Druce. The data included vernacular names and botanical names, parts used, animal diseases and disorders and mode administration.

## RESULTS AND DISCUSSION

### Taxonomic description

*Cadaba fruticosa* (L.) Druce plant is rigid, wiry, unarmed, straggling shrub, leaves simple. Flower solitary or racemed. Sepals 4, unequal in two whorls, outer 2 valvate. Petals 4 or 2, clawed, hypogynous. Disk large, coloured, encircling the gynophore with its tubular stalk and expanded trumpetwise at the top or spatulate. Stamens 4-6 inserted unilaterally on the slender gynophore. Ovary 1-celled; stigma sessile; ovules many on 2-4 parietal placentas. Fruit a fleshy slender cylindrical berry or sometimes dehiscent ultimately by two valves which fall away from placentas. Seeds globose; testa horny; cotyledons convolute.

### Leaf Morphology

**Macroscopic** Leaves 3 to 5 cm long and 2 to 2.5 cm wide, thin, simple, petiolate, elliptic, oblong, upper surface glabrous and lower surface hairy, obtuse or mucronate and margin entire.

**Flowering and Fruiting** November to April

**Distribution** Common in scrub Jungles and Rocky areas. *Cadaba fruticosa* (L.) Druce popularly known as in English 'Copper Brush' is locally recognized under different names like 'vuldhi' in Tamil, called as Chevigondi in Nalgonda. The crude drug plant various parts are used differently in different regions (Loc.Cit.). Earlier workers are not reported in the area of animal healthcare diseases like / especially Neurological diseases. This might be the first report from the Nalgonda District, Andhra Pradesh, India. Survey of literature revealed scanty information on folklore animal healthcare of Nalgonda [17]. Jain [7] has reported eight hundred thirty six plants species used in ethnoveterinary system.

### Mode of administration

- Fresh leaves are crushed along with goat milk or ground nut to prepare a paste given 3 days for treating for treatment of Neurological diseases and the drug generally used to severe weakness (goats, sheep, cow, calf, lamb and kid (goat).
- Crushed leaf paste soaked in 'Kali' water two over nights (Rice cleaning water locally called 'Kali') to feed animals.

**Note:** After using this medicine no other medicine is needed, fodder also not give up to 12 hours.

### Medicinal uses reported

*Cadaba fruticosa* (L.) Druce medicinally important plant used in indigenous traditional medicinal systems belonging to Cappariaceae family. Leaves are anthelmintic and deobstruent, decoction used in uterine obstructions. Leaves are used as poultice on sores [13]. Decoction of root and leaves is given twice daily for a week to cure urine obstruction and to resume free flow of urination, leaves and roots are purgative, deobstruent, emmenagogue and aperients [3]. Root decoction is administered during helminthiasis [8]. The plant is used in the treatment of syphilis, sore and as an antiphlogistic, deobstruent,

emmenagogue, anthelmintic [10]. Plants are used in traditional medicine to treat various ailments in order to substantiate the folklore claims. Leaf decoction is given orally thrice a day for three days and in addition to this leaf paste is also applied on the area to cure hemiplegia [6]. Leaf juice is internally used in the case of general weakness and dysentery and diarrhoea and also to relieve general body pain, antidote against poisoning, stimulant and anti scorbutic [21]. Leaves crushed and mixed with lime juice taken orally 2 times a day to cure dysentery [9]. For nocturnal emission leaf powder 3-5 grams given with cup of coconut milk 50-60 ml once in a day for about 2-3 days [11]. Leaf and roots are stimulant, aperients, antihelminthic, used in uterine troubles etc [1]. Leaves are used to snake bite [20]. Leaves are used as anthelmintic, for round worms [15]. Bark is useful in boils blisters and cuts [19]. Leaves are used to cure eczema [12]. Powder of leaves mixed with coconut oil and applied on chronic bleeding wounds for quick healing [12]. Decoction of root and leaves is given twice daily for a week to cure urine obstruction and resume free flow of urination, leaves and roots are purgative, deobstruent, emmenagogue and aperients [3].

## CONCLUSIONS

The survey revealed that *Cadaba fruticosa* (L.) Druce is highly effective against neurological disorders and general debility is quite interesting, local people use them frequently. Documentation of the plant will not only provide new medicines but will also help in the conservation of medicinal plants. There is urgent need to conserve them before they are extinct due to over-exploitation. It is proposed that phytochemical analysis should be undertaken, which can help in scientific validation of the folklore claims of the plant and in searching the new or novel molecules for treatment of reported ailments. This work can be useful in pharmacological and phytochemical work. Documentation of folklore veterinary knowledge will save the ethnoveterinary system from extinction. In addition to this, the traditional medicinal system gives better results in drug resistance disease with zero side effects. Further, documentation of traditional knowledge will help to protect our indigenous knowledge from being patented by multinational companies.

## ACKNOWLEDGEMENT

Authors are thankful to Prof. B. Prathibha Devi, Head, Department of Botany, Osmania University, Hyderabad for providing facilities and encouragement.

## REFERENCES

1. Anil Kshirsagar A, Sanjay Pawar M, Nirmala Patil P and Vasant Mali P. Diversity of medicinal plants in Gautaa Sanctuary of Kannad District, Aurangabad (MS) India. *Biosci Disc.* 2012;3 (3): 355-361.
2. Arokiyaraj S, Radha R, Martin S and Perinbam K. Phytochemical analysis and anti-diabetic activity of *Cadaba fruticosa*. *Indian J Sci Technol.* 2008; 1(6):1-4.
3. Bhasker Punjani. Herbal folk medicines used for urinary complaints in tribal pockets of Northeast Gujarat. *Indian J Trad Knowledge.* 2010;9 (1):126-130.
4. Chatterjee TK. *Handbook of Laboratory Mice and Rats*, 1st ed., Chatterjee Publications, Calcutta. 1993; pp-151.
5. Chattopadhyay D, Arunachalam G, Mandal AB, Mandal SC. Evaluation of antipyretic activity leaf extracts of *Mallotus speltatus* (Geist) Muell. *Arg.Var. acuminatus*; folk medicine, *Phytomed.* 2002; 9: 727-730.
6. Dnyaneshwar P Ghorbaband and Sharad Biradar D. Folk medicine used by the tribes of Kinwat Forest of Nanded District, Maharashtra, India. *Indian J Nat Prod Res.* 2012; 3 (1):118-122.
7. Jain S K. 1999, *Dictionary of ethnoveterinary plants of India*. Deep publications, New Delhi, India.
8. Lenin Babuji J and Venkat Ratnam S. Traditional uses of some medicinal plants by tribal of Gangaraju MadgulaMandal of Vishakapatnam District, Andhra Pradesh. *Ethnobotanical Leaflets.* 2009; 13: 388-398.
9. Muralidharan R and Narasimhan D. Ethnomedicinal plants used against gastrointestinal problems in Gingee Hills of Villupuram District, Tamilnadu. *J App Pharm Sci.* 2012; 2 (10): 123-125.
10. Mythreyi R, Sasikala E, Geeta A and Madhavan V. Antipyretic activity of leaves of *Cadabafruticosa*. *Pharmacology online.* 2008; 3:136-142.
11. Nagabhushan Sharihar and K Kotresha K. Wild medicinal plants of Kappat Hills, Gadag District, Karnataka. *Res Rev BiomedBiotechnol.* 2010; 1(2):111-118.
12. Padal S B, Chanrasekhar P, Satyavathi K. Ethnomedicinal investigation of medicinal plants used by the tribes of Pedabayalu Mandalam, Visakhapatnam District, Andhra Pradesh. *India. Int J ComputatEng Res.* 2013; 3 (4): 8-13.
13. Prajapathi N D and Kumar U. *Agro's dictionary of Medicinal plants*, Agrobios, Jodhpur, India. 2005; pp-57.

14. Rajssekaran S and Sivaraman M. Medicinal flora of Cauvery delta region of Kuttalam Taluk, Nagapattinam District of Tamilnadu. *Int J Curr Res Develop.* 2013; 1(1):91-111.
15. SandeepPatil B, Nilofar Naikwade S, Chanrakanth Magdum S, Vikas Awale B. Some medicinal plants used by people of Sangli District, Maharashtra. *Asian J Pharm Res* 2011; 1 (2): 112-113.
16. Sankaranarayanan S, Bama P, Ramachandran J, Kalaichelvan P T, Deccaraman M, Vijayalakshimi M, Dhamotharan R, Dananjeyan B and Sathya Bama S. Ethnobotanical study of medicinal plants used by traditional users Villupuram District of Tamil Nadu, India. *J Med Plants Res.* 2010; 4(12):1089-1101.
17. Shashikanth J, Ramachandra Reddy P and Padma Rao P. Some indigenous folklore animal healthcare practices from Nalgonda District, Andhra Pradesh. *Ethnobot.* 2011; 23: 78-81.
18. Shubhangi Pawar, Patil D A. Indigenous Herbal Remedies for skin Applications and Complexion in Jalgaon District (Maharashtra). *Deccan Current Science.* 2011; 4(1): 241-248.
19. Sreeramulu N, Sateesh S, Rangan A and Vatsavaya Raju S. Ethnobotanical medicine for common human ailments in Nalgonda and Warangal districts of Telangana, Andhra Pradesh, India. *Ann Plant Sci.* 2013; 2(7): 220-229.
20. Sundaresan S and Senthil Kumar B. A survey of traditional medicinal plants from the Vellure District, Tamilnadu, India. *Int J Ayurvedic Herbal Med.* 2013; 3(5): 1347-1355.
21. Survase SA, Raut SD. Ethnomedicinal study of some tree medicinal plants in Marathwada, Maharashtra. *J Ecobiotechnol.* 2011; 3(2): 17-21.
22. ViqarUddin A, Anwar B, Ur Rahman A. Identification and C-13-NMR spectrum of stachydrine from *Cadaba fruticosa*. *Phytochem.* 1975; 14: 292-293.
23. Watt JM and Breyer-Brandwijk MG. *Medicinal and Poisonous Plants of Southern and Eastern Africa*, 2nd ed. E&S Livingston, Ltd., London. 1962; pp-160.
24. Yousif G, Iskander GM and Eisa EB. Alkaloids of *Cadaba farinosa* and *Cadaba rotundifolia*. *Fitoterapia.* 1984; 55: 117-118.