



Review Article

AN UPDATED REVIEW ON *TAMILNADIA ULIGINOSA*

K. Sudhakar*, M. Chinna Eswaraiah, M.M. Eswarudu, K. Prasanna Kumar, K.Nagaraju.

Department of pharmacognosy, Anurag Pharmacy College, Ananthagiri (V), Kodad (M), Nalgonda (Dt),
Andhra Pradesh, India.508206

(Received: 04 September 2012; Accepted: 20 September, 2012; Published: 29 October, 2012)

Corresponding Author's email: sudhakarpharma001@gmail.com

Abstract: *Tamilnadia uliginosa.*, also known as *Randia uliginosa* (Retz.), a member of the family Rubiaceae. *Tamilnadia*- Genus based on name of the state of Tamilnadu in India. The plant is grown in dry deciduous forests, native to Bangladesh, India, Sri Lanka, and Thailand. The different parts of the plant are used for various ailments like Cholera, diarrhea, dysentery, eye complaints, pimples, diuretic, tonic properties, biliousness, aphrodisiac etc. Other than these pharmacological uses, the koyaguda local people named this plant as kumudmara and they used raw fruits as vegetables. The fruits are eaten boiled or roasted, either alone or in curries. The unripe fruit is astringent. It is used in dyeing as a colour intensifier. The leaves are boiled and eaten. They are used as fodder for deer and cattle. Flowers yield an essential oil similar to Gardenia oil.

Key words: *Tamilnadia uliginosa*, Rubiaceae, Biliousness, Diuretic and Colour intensifier

INTRODUCTION

The plants are indispensable to man for his life. Nature has provided a complete store house of remedies to cure all ailments of mankind¹. Plants and natural products have long been recognized as important sources for the therapeutically effective medicines. Herbal medicines have become more popular in recent years because it is believed that these do not have any side or toxic effects as compared to the modern medicines². *Tamilnadia uliginosa.*, also known as *Randia uliginosa* (Retz.), a member of the family Rubiaceae. *Tamilnadia*-Genus based on name of the state of Tamilnadu in India tah-mil-nah-DEE-uh, *uliginosa*- grows in bogs and swamps -- ew-li-gi-NO-suh³. The plant is grown in dry deciduous forests, native to Bangladesh, India, Sri Lanka, Thailand.

Figure: *Tamilnadia uliginosa*TAXONOMIC CLASSIFICATION:^{4,5}Table- 1: Taxonomic Classification of *Tamilnadia uliginosa*

Kingdom	Plantae
Phylum	Magnoliophyta
Class	Magnoliopsida
Order	Rubiales
Family	Rubiaceae
Genus	<i>Tamilnadia</i>
Species	<i>uliginosa</i>
Binomial name	<i>Tamilnadia uliginosa</i>

SYNONYMS:^{6,7}

Gardenia uliginosa Retz., *Catunaregam uliginosa* (Retz.) Manilal & Sivar, *Randia uliginosa*(Retz.) Poir , *Xeromphis uliginosa* (Retz.)Maheshw, *Gardenia pomifera* Wall, *Posoqueria uliginosa* (Retz.) Roxb, *Solena uliginosa* (Retz.) D.Dietr.

VERNACULAR NAMES:^{3, 8}

Table- 2: Vernacular names

LANGUAGE	VERNACULAR NAME
Telugu	Adavimanga, peddamanga, devatamalle
English	Gray emetic nut, Divine jasmine
Hindi	Bharani, katul
Tamil	Wagatta, kalikarai
Kannada	Banbugri, doddakare
Sanskrit	Devatamalla, pindalu
Malayalam	Kara, malankara

BOTANICAL DESCRIPTION: ⁹⁻¹³

It is a very rigid, ramous³, dry deciduous,⁴ small armed tree with quadrangular branches up to 7.5m height and 1.2m in girth,⁵ bear one or two pairs of short thorns,⁶ delights in bogs, swamps, banks of rivers and other moist places. Trunk is well defined, covered with a dark rust-colored scabrous bark. It freely produces root suckers, and is hardly against frost and drought. The rate of growth is moderate, with a mean annual girth increment of 14-28mm.

Branches are erect rigid, quadrangular, thick set with short, rigid round, diverging branch lets. Short lateral shoots, each of which terminally produces one or two pairs of short thorns. Leaves opposite on young shoots, or fascicled at the end of branch lets, short-petioled, oblong, shining, entire, 2-3 inches long by 1.5 inch broad.

Flowering time at the beginning of hot season or in some measure all the year.⁷ Flowers dimorphic, white and fragrant. The flowers of this species as well as the beauty of the entire shrub, render it deserving of a conspicuous place in the flower garden. Flowers 1-3 upon their proper short pedicles at the extremities of the branch lets, large, white, and fragrant. Calyx above, tubular, obtusely five-toothed, permanent.

The wood is whitish grey or light-brown, close-grained, hard and fairly heavy and without heartwood it is not used for any special purpose, but is one of the possible box-wood substitutes; it is suitable for turning small articles.

Berry ellipsoid or globose or ovoid solitary 5-6cm long, yellowish brown, crowned with persistent calyx; stalk 2 cm long; seeds about 12, compressed, smooth, closely packed in pulp. The fruits are edible⁸ ripen in February -March and are eaten boiled or roasted, either alone or in curries. The unripe fruit is astringent. It is used dyeing as a colour intensifier. The leaves are boiled and eaten. They are used as fodder for deer and cattle. Flowers yield an essential oil similar to Gardenia oil, but the perfume is not commercially prepared.

FLOWERING AND FRUITING : April-June ¹⁴

GEOGRAPHICAL DISTRIBUTION: ^{3, 10, 15-16}

The plant is grown in all dry districts in open forests, native to Bangladesh, India, Sri Lanka, Thailand, and Vietnam. The plant is grown at an altitude of 1000m common in the sub Himalayan tracts from the Yamuna eastwards and in eastern central and southern India. In Andhra Pradesh it is available in all districts.

TRADITIONAL USES: ^{10, 13, 17- 21}

Fruits -- Used as astringent, Cholera, diarrhea, dysentery, eye complaints, headache, pimples and sores.

Roots --- Used as cooling, diuretic, tonic properties, biliousness, boil in children, diarrhea, aphrodisiac and dysentery.

Pulp-- The roasted pulp is used as a remedy in diarrhea and dysentery, especially during pregnancy and pulp is applied on boils.

Unripe fruit --The unripe fruit is employed as fish-poison.

CHEMICAL CONSTITUENTS: ^{10, 22}

Analysis of the fruits showing following values-

Content	Values
Moisture	86.6/81.8
Protein	0.58/0.5
Fat	0.24/0.1
Fiber	2.88/3.4
Mineral matter	0.81/0.5
Vitamin C	62.19/600
Iron	1/1.2
Sodium	5.8/5
Potassium	170/225
Energy	39.98/58

On dry wt .basis destructive distillation of wood gave charcoal- 30.4; tar- 9.6; pyrolygneous acid- 39.7[acid 5.0; ester 3.7; acetone 2.7; methanol-1.4]; pitch and losses 1.7; and gas 18.5%. Analysis of the edible matter gave carbohydrates- 12.5; calcium- 33mg; phosphorous- 13mg; calorific value- 56 cal. /100g.

RECENT DEVELOPMENTS IN THE RESEARCH AREA OF TAMILNADIA ULIGINOSA:

A.B. Prusti, et al ²³, in 2007 Ethnobotanical Exploration of in 2007 they conducted a survey in Malkangiri District of Orissa, this survey describes that koyaguda local people named this plant as kumudmara, they used raw fruits as vegetable.

K. Venkata Ratnam et al ²⁴, in 2008 they conducted a survey in adivasis of Eastern Ghats, Andhra Pradesh. The local name of the plant is adavijama. Stem bark of *Tamilnadia uliginosa* was used for bone fractures ground with white layer of country egg, turmeric and calcium.

M.K.R.Narayanan et al ²⁵, In 2011 they conducted a survey in the Wayanad Wildlife Sanctuary on floristic and ethnobotanical studies; locally they called as Pindichakka and found that tender fruits are used as vegetables.

K. N. Reddy et al²⁶, In 2000-2005 they conducted an Ethno pharmacological survey in Chittoor, Cuddapah, East Godavari, Guntur, Khammam, Krishna, Kurnool, Srikakulam, Visakhapatnam, Vijayanagaram and West Godavari districts of the rural people and forest ethnic people (Chenchus, Erukulas, Lambadas, Koyas, Kondareddies, Nukadoras, Yanadis). They found that the stem bark of *Helicteres isora* Linn along with that of *Tamilnadia uliginosa* and a whole plant of *Bacopa monnieri* Wettst (10 gm. each) are used in treatment of Cold and Cough.

Suman D et al²⁷, Studies on the food and feeding habits of Gaur *Bos gaurus* H. Smith (Mammalia: Artiodactyla: Bovidae) in two protected areas of Goa, They conducted a survey in Mahaveer Wildlife Sanctuary and found that leaves are consumed during winter season.

Wongsatit Chuakul et al²⁸, They conducted a survey on medicinal plants in Kutchum District, Yasothon Province, Thailand. The decoction of wood of *Tamilnadia uliginosa* was used in treatment of diabetes mellitus.

LIST OF SPECIES OF IN RANDIA GENUS:²⁹

<i>Randia aciculiflora</i> Borhidi & Saynes	<i>Randia capitata</i> DC	<i>Randia echinocarpa</i> Moc. & Sessé ex DC
<i>Randia acunae</i> Borhidi	<i>Randia carlosiana</i> K.Krause	<i>Randia erythrocarpa</i> Krug & Urb.
<i>Randia altiscandens</i> (Ducke) C.M.Taylor	<i>Randia chiapensis</i> Standl	<i>Randia ferox</i> (Cham. & Schltdl.) DC.
<i>Randia amazonasensis</i> Steyerem	<i>Randia ciliolata</i> C.Wright	<i>Randia genipifolia</i> (Standl. & Steyerem.) Lorence
<i>Randia annae</i> (K.Schum.) ined.	<i>Randia cinerea</i> (Fernald) Standl.	<i>Randia genipoides</i> Dwyer
<i>Randia aristequietae</i> Steyerem.	<i>Randia confusa</i> Borhidi & Diego	<i>Randia gentryi</i> Dwyer
<i>Randia armata</i> (Sw.) DC.	<i>Randia cookii</i> Standl	<i>Randia grayumii</i> Dwyer & Lorence
<i>Randia asperifolia</i> (Sandwith) Sandwith	<i>Randia coronata</i> Borhidi	<i>Randia canescens</i> Greenm.
<i>Randia boliviana</i> Rusby	<i>Randia costata</i> Borhidi	<i>Randia dumetorum</i> (Retz.)
<i>Randia brachysiphon</i> Borhidi & Salas-Mor.	<i>Randia cubana</i> Borhidi	<i>Randia guerrerensis</i> Lorence & Rodr.Acosta
<i>Randia brenesii</i> Standl.	<i>Randia denticulata</i> Borhidi	<i>Randia hebecarpa</i> Benth
<i>Randia brevipes</i> Steyerem.	<i>Randia dioica</i> H.Karst.	<i>Randia hidalgensis</i> Lorence
<i>Randia calycina</i> Cham	<i>Randia diversiloba</i> Standl.	<i>Randia hondensis</i> H.Karst.
<i>Randia calycosa</i> Standl.	<i>Randia duckei</i> Ined.	<i>Randia induta</i> Standl.
<i>Randia itatiaiae</i> Silva Neto & Ávila	<i>Randia killipii</i> Standl.	<i>Randia laetevirens</i> Standl.

<i>Randia laevigata</i> Standl.	<i>Randia laevigatoides</i> Borhid	<i>Randia lanuginosa</i> Borhidi & García Gonz.
<i>Randia lasiantha</i> (Standl.) Standl.	<i>Randia longifolia</i> C.Gust.	<i>Randia longiloba</i> Hemsl.
<i>Randia malacocarpa</i> Standl.	<i>Randia martinicensis</i> (Urb.) Standl	<i>Randia matudae</i> Lorence & Dwyer
<i>Randia mayana</i> Lundell	<i>Randia mendozae</i> Ined.	<i>Randia micracantha</i> (Lillo) Bacigalupo
<i>Randia mira</i> Dwyer	<i>Randia mixe</i> Borhidi & E.Martínez	<i>Randia mollifolia</i> Standl.
<i>Randia monantha</i> Benth.	<i>Randia mossica</i> (A. Chev.) A. Chev.	<i>Randia nelsonii</i> Greenm
<i>Randia nicaraguensis</i> Lorence & Dwyer	<i>Randia nitida</i> (Kunth) DC	<i>Randia nodifolia</i> Borhidi & García Gonz.
<i>Randia oaxacana</i> Standl.	<i>Randia obcordata</i> S.Watson	<i>Randia obovata</i> Ruiz & Pav.
<i>Randia ovalifolia</i> Borhidi	<i>Randia parana</i> Ined.	<i>Randia parvifolia</i> Lam.
<i>Randia pascualii</i> Borhidi & Salas-Mor	<i>Randia petenensis</i> Lundell	<i>Randia pittieri</i> (Standl.) Standl.
<i>Randia platysepala</i> Standl.	<i>Randia portoricensis</i> (Urb.) Standl.	<i>Randia pringlei</i> (S.Watson) A.Gray
<i>Randia pterocarpa</i> Lorence & Dwyer	<i>Randia pubiflora</i> Steyerm.	<i>Randia pubistyla</i> C.Gust.
<i>Randia retroflexa</i> Lorence & M.Nee	<i>Randia rotundifolia</i> Ruiz & Pav.	<i>Randia serboi</i> Borhidi & Saynes
<i>Randia sonorensis</i> Wiggins	<i>Randia spinifex</i> (Roem. & Schult.) Standl.	<i>Randia standleyana</i> L.O.Williams
<i>Randia tessmannii</i> Standl	<i>Randia tetracantha</i> (Cav.) DC.	<i>Randia thurberi</i> S.Watson
<i>Randia venezuelensis</i> Steyerm.	<i>Randia wigginsii</i> Standl. ex C.Gust	<i>Randia xalapensis</i> M.Martens & Galeotti

CONCLUSION

Tamilnadia uliginosa is a wonder plant since each and every part of it can be used for its medicinal values. Other parts of the plants such as fruit, root, pulp and unripe fruits which are documented possess important medicinal uses and pharmacological effects. In further studies the other plant parts as well as isolated components need to evaluate in scientific experimental animal models and clinical trials to understand the molecular mechanism of action.

Acknowledgements

We are thankful to the management of Anurag Pharmacy College, Ananthagiri, Kodad, Nalgonda Dist, Andhra Pradesh, India, for

providing all facilities during this study and special thanks to Dr. M.Chinna Eswaraiah, principal of Anurag Pharmacy College for his tiredless help.

REFERENCE

1. CK Kokate, AP Purohit, SB Gokhale. Pharmacognosy vol I &II 46 Edition, Nirali prakashan Publications, Pune, Dec-2010, 1.1
2. SH Ansari, Deepika Bhatt, A Concise Text Book Of Pharmacognosy, 1st Edition, Birla Publications Pvt. Ltd, Delhi, 2007-08, 03.
3. http://www.flickr.com/photos/dinesh_valke/5663214101/-06/08/2011.

4. <http://culturesheet.org/rubiaceae:tamilnadi a:uliginosa-09/08/2011>
5. <http://www.inaturalist.org/taxa/68673-13/08/2011>.
6. <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?457685-16/08/2011>.
7. <http://culturesheet.org/rubiaceae:tamilnadi a:uliginosa-18/08/2011>.
8. http://envis.frlht.org/plant_details.php?disp_id=1784-20/08/2011.
9. C. Srinivasulu and Indraneil das. The Herpetofauna of Nallamala Hills, Eastern Ghats, India: An Annotated Checklist, With Remarks on Nomenclature, Taxonomy, Habitat Use, Adaptive Types and Biogeography, *Asiatic Herpetological Research*, **2008**; 3(11):110–131.
10. The Wealth of India, A Dictionary of Indian Raw materials and Industrial products, Raw materials, Vol.VIII ph-Re, NISCAIR **2005**, Page no: 363.
11. Christian Puff & Voradol Chamchumroon, Thai Rubiaceae with hooks and thorns, *Thai for. Bull. (Bot.)* 31: **2003**; Page no: 65–74.
12. <http://www.flowersofindia.in/catalog/slide s/Divine%20Jasmine.html-08/08/2011>.
13. G. Watt, A Dictionary of the Economic products of India, (Superintendent of Government Printing, India, Calcutta), 6 Vols, 1889-1893; Index 1896; reprinted (Cosmo publications, Delhi), **1972**.
14. S.S Hebbar, Gurumurthy hedge and G.R. Hegde, Less known wild edible fruits and seeds of Uttara Kannada District of Karnataka, Indian forester, September **2010** page no: 1218-1222.
15. J.S.Gamble, Flora of the presidency of Madras, Vol-2, Rubiaceae to Euphorbiaceae, Page no: 615.
16. CH. Sudhakar Reddy, K. Narasimha Reddy. Tree Wealth of Eastern Ghats of Andhra Pradesh, India: *Check List* **2009**; 5(2): 173–194.
17. K. Madhava chetty, K.Sivaji and K.Tulasi Rao, Flowering plants of Chittoor District Andhra Pradesh, India, Second edition, Students offset printers, Tirupati, 2008, Page no:162.
18. KK Sharma & S Sharma. Medicinal plants of south Aravalli hills, *J Econ Tax Bot, Addl Ser*, **1992**; 10: 209-217.
19. GN Tribedi, RN Kayal & RHN Chaudhuri, Some Medicinal Plants of Mayurbhanj (Orissa), *Bull Bot Surv India*, **1982**; 24: 117-120.
20. M Ahmedulla & MP Nayar, Endemic Plants of the Indian region, (Botanical Survey of India, Calcutta), **1986**.
21. G Watt, The commercial products of India, (John Murray, London), **1908**.
22. A Nazarudeen, Nutritional composition of some lesser-known fruits used by the ethnic communities and folks of Kerala, *Indian journal of traditional knowledge*, **2010**; 9(2) 398-402.
23. A.B. Prusti and K.K.Behera, Ethnobotanical Exploration of Malkangiri District of Orissa, India, *Ethnobotanical Leaflets*, **2007**; 11: 122-140.
24. K.Venkata Ratnam and R.R.Venkata Raju. Traditional Medicine Used by the Adivasis of Eastern Ghats, Andhra Pradesh – For Bone Fractures, *Ethnobotanical Leaflets*, **2008**; 12: 19-22.
25. M.K.R.Narayanan, S.Mithunlal, P.Sujanapal, N.Anil Kumar, M.Sivadasan. Ethno botanically important trees and their uses by Kattunaikka tribe in Wayanad Wildlife Sanctuary, Kerala, India, *Journal of Medicinal Plants Research*, **2011**; 5(4), 604-612.
26. K.N. Reddy, C.S. Reddy and G.Trimurthulu. Ethno botanical Survey on Respiratory Disorders in Eastern Ghats of Andhra Pradesh, India, *Ethnobotanical Leaflets*, **2006**; 10: 139-148.
27. Suman D., Gad and S.K. Shyama. Studies on the food and feeding habits of Gaur *Bos gaurus* H. Smith (Mammalia: Artiodactyla: Bovidae) in two protected areas of Goa, *Journal of Threatened Taxa*, **2009**; 1(2): 128-130.
28. W Chuakul, P Saralamp and A. Boonpleng. Medicinal plants used in the Kutchum District, Yasothon Province, Thailand, *Thai Journal of Phytopharmacy* **2011**; 9(1): 22-49.
29. <http://www.theplantlist.org/browse/A/Rubiaceae/Randia/-14/10/2011>.