



DRUG REVIEW AND PHARMACOGNOSTICAL STUDY OF FOLKLORE DRUG COMBRETUM EXTENSUM (Roxb.)

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Abstract

The drug *Combretum extensum* (Roxb) is widely available herb in Dakshina Kannada and it is commonly used as anti-helminthic by the local people. It is locally known as *Kojambe soppu*. Mainly the leaf is used for the therapeutic purpose, because of this *Combretum extensum* (Roxb) is taken into consideration and detail description about the plant and its Pharmacognostical study is been carried out for its proper identification.

Key word- *Combretum extensum* (Roxb), Folklore plant, *Kojambe soppu*, Pharmacognostical study

Introduction

India has a tradition of using medicinal plants for common ailments. Plant possesses an immense therapeutic potential and a large number of such plants are unexplored to-date. Depends on natural product and plant origin products leads to over exploitation and extinction of plants, this leads to the know about the plant which is not much popular but have good therapeutic action and used as folklore drug.

Combretum extensum is the used by local people of Dakshin Karnataka locally known as *Kojambe soppu*, used as anti-helminthic. So here detail morphology and pharmacognosy study of this plant is been conducted.

DRUG REVIEW

BOTANICAL NAME: *Combretum extensum* Roxb

FAMILY: Combretaceae

LOCAL NAME: Kojambe soppu (kannada)

TAXONOMICAL POSITION: ¹

Kingdom – Plantae Division – Plant

kingdom Sub Division – Angiosperms

Class – Dicotyledonae Sub class –

	Polypetalae Series –	Calyciflorae
Order	–	Myrtales
Family	–	<i>Combretaceae</i>
Genus	–	Combretum
Species	–	extensum

COMBRETACEAE: FAMILY CHARACTER. DISTRIBUTION: ^{1,2}

The *Combretaceae* is a small family including 17 genera about 500 species mainly tropical or subtropical. Greater number of species belong to the genera mainly terminalia and combretum.

VEGETATIVE CHARACTERS: ^{1, 3, 4}

HABIT: Mainly trees or shrubs, sometimes subscandent.

ROOTS: Tap root

STEM: Erect hard and woody or sometimes weak and subscandent, with bicollateral bundles

LEAVES: The leaves are simple, alternate, sub opposite, coriaceous or membranous, petiolate, petiole often glandular at the top, exstipulate.

FLORAL CHARACTER: ^{3, 4}

INFLORESCENCE: Racemose paniculate or spicate.

FLOWER: Bisexual or unisexual by reduction, 4-5 merous, regular with a tendency to zygomorphy. The floral axil is carried above the ovary forming a tube epigynous.

CALYX: Sepals 4-5, calyx-tube adnate to the ovary and produce beyond it, valvate aestivation superior.

COROLLA: Petals 4-5, small, alternating with the sepals and episealous, often wanting.

ANDROECIUM:

The stamen bent inwards in the bud 4,5,8 or 10, rarely indefinite, generally twice as many as the petals in two series, the lower opposite the sepals, the upper alternating with them, the upper series sometimes reduced or absent.

GYNOECIUM:

Monocarpillary, ovary inferior, 1-celled, generally angled, the angles equal in number and alternating with the calyx segments, ovules 2-5, rarely more, anatropous, pendulous from the top of the ovary on long, often united funicles, style one, long, filiform, bearing a pointed, rarely a capitate stigma. The receptacle tube bears a disc, which is sometimes hairy.

FRUIT: Generally, 2-5 angled, one seeded, leathery or drupe like, the angles often forming broad membranous wings.

SEEDS: Non endospermic cotyledons irregularly folded or spirally rolled.

GENUS CHARACTERS ^{5, 6}

Shrubs usually straggling or climbing. **Leaves** entire, opposite, petiolate, sometimes alternate or ternate. **Flowers** polygamodioecious, spicate, the spikes often paniced, bracteoles small. Calyx tube constricted above the ovary, limb campanulate or funnel shaped, lobes 4-5. **Petals** as many as calyx lobes and inserted between them, sometimes **Stamens** twice as many as the calyx lobes in 2 series, filament slender, anther small didymous, **Ovary** inferior, 1-celled, ovules 2-5

pendulous, style subulate, stigma simple. **Fruit** dry, usually indehiscent, with 5 ridges or wings chartaceous. **Seed** usually solitary, testa membranous, protruded into the angles of the wings, cotyledons plicate rarely convolute, radical superior.

SYNONYMS OF *COMBRETUM EXTENSUM* (ROXB): ⁷

- *Combretum latifolium* Blume
- *Combretum cyclophyllum* Steud
- *Combretum formosum* Griff
- *Combretum horsfieldii* Miq

DISTRIBUTION AND HABITAT: ^{3, 5, 8}

Growing wild in southern part of India, fairly common in the forest of the west coast, in southern part of Karnataka, Tamil Nadu, Kerala and in North Andaman Islands.

EXTENT OF AVAILABILITY IN MOODBIDRI:

Found generously growing in the parts of Dakshin Karnataka and found in the area of Moodbidri.

BOTANICAL DESCRIPTION: ^{4, 6, 9}

HABIT: It is a large scandent herb.

LEAVES: Leaves upto 9-13×5-6.5 cm. Opposite, ovate or elliptic, apex acute or obtuse, base acute, often punctate and puberulous beneath, domatia (tuft of hairs) at nerve axils beneath, nerve 6-7 pairs, prominent beneath, petiole 1.5-2 cm long.

FLOWERS: Flowers 1.5 cm long, white, in axillary dense spikes or panicles, peduncle 11-22 cm long.

CALYX: Calyx funnel like, tube constricted above the ovary, lobes 4, 3-4 mm long, triangular, acute.

COROLLA: Petals 4, free, 2-3 mm long, oblong or obovate, apex truncate.

ANDROECIUM: Stamen 8, in 2 whorls, filament 6-8mm long, anther 2-celled.

GYNOECIUM: Ovary inferior, 5mm long, stalk-like, tetragonous, 1-locular, ovule 2, pendulous, style erect, stigma simple.

FRUITS: Fruits 3 cm long, ovoid, with 4 membranous wings.

FLOWERING SEASON: January to March

USEFUL PARTS: Leaves

THE PLANT *COMBRETUM EXTENSUM* (ROXB)

Research Through Innovation



LEAF OF *COMBRETUM EXTENSUM* (ROXB)



Tuft of Hairs

PHARMACOGNOSTICAL STUDY

The detailed study of structure of the leaf of *Combretum extensum* (Roxb) is carried out.

Materials and Methods

Collection of Sample: Botanically identified authentic sample of *Combretum extensum* Roxb were collected locally from Moodbidri, Dakshina Kannada District in Karnataka.

Place of Work

Pharmacognostical study was carried out in department of Dravyaguna Vijnana of Alva's Ayurveda

Medical College, Moodbidri. D.K.

Procedure

- Transverse Section of Leaf was seen under microscope
- Clearing agent-Chorol hydrate.
- Stain used-Flouroglaical, HCL (1:1) Iodine and Saffranin
- Observed under light Microscope.

T.S of Midrib

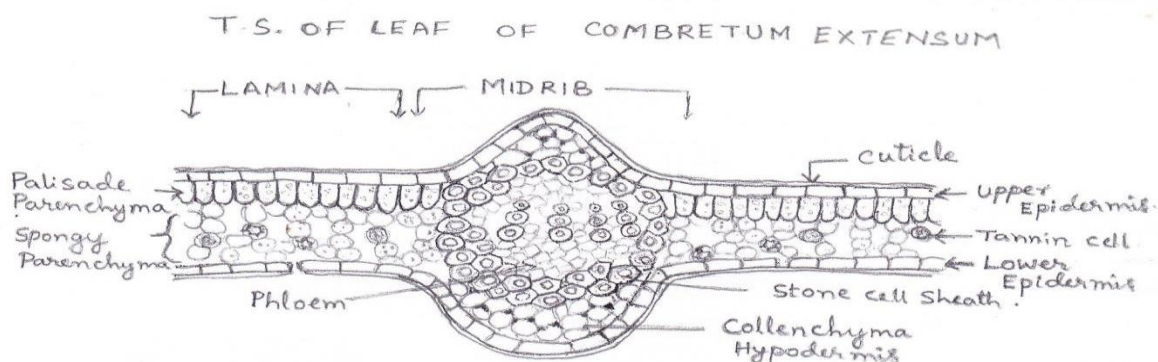
Shows epidermis on both the surfaces with cuticle. It is followed by cholenchyma hypodermis in two patches; there is a ring of stone cells covering vascular bundle in the centre. Vascular bundle is with the patch of phloem facing the lower epidermis and xylem vessels pointing the upper epidermis. There are patches of parenchyma and sclerenchyma in between.

T.S of Lamina

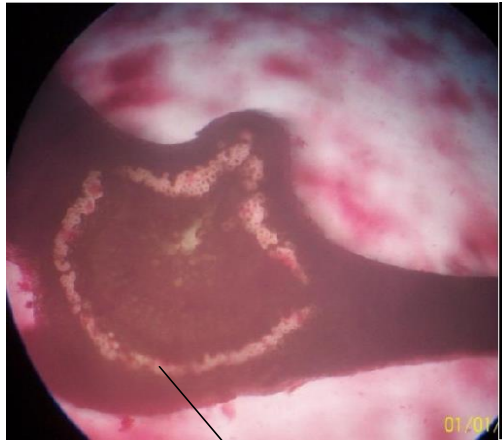
T.S of lamina portion shows the continuation of epidermis on either side of from midrib covered by the cuticle. No trichome on the epidermis. Mesophyll consists of a layer of compactly arranged palisade parenchyma with in the upper epidermis and loosely arranged spongy parenchyma within the lower epidermis. There is air space found between the spongy parenchyma, some cells of spongy parenchyma contain tannin like substance and few other cells are with the calcium oxalate crystals.

Stomata are more in lower epidermis and they are anisocytic.

T.S OF LEAF OF COMBRETUM EXTENSUM (ROXB)

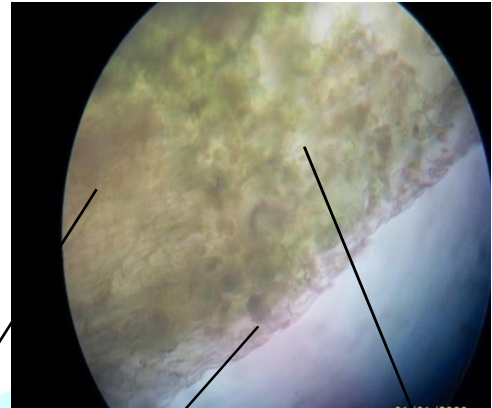


T.S OF MIDRIB OF C.EXTENSUM



Ring of Stone Cells

T.S OF LAMINA OF C. EXTENSUM



Tannin

Calcium oxalate crystals



CONCLUSION

Folklore practitioners have a tremendous source of information regarding the utility of the locally available drug in day-to-day ailments which have to be properly explored and needs systematic documentation to establish their authenticity, medicinal values and applications. This drug *Combretum extensum* (Roxb) is been used as folklore medicine for helminthiasis, the detail morphology and pharmacognostical study was conducted for proper identification of the plant.

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