

# CYTO SCREENING OF LEAVES OF HOLOPTELEA INTEGRIFOLIA Roxb.

H K I Singh Parmar

1. Ujjain Institute of Pharmaceutical Sciences, Dewas rod chandeshra, Ujjain, M.P.

## Abstract

As per the traditional herbal medicine books many medicinal plants are available in India, the ayurveda is a traditional for the oldest Indian medication the book contain a lot of drug description and they are use for cure and treat a dieses or alter the physiology and biological changes into the human body to remove the pain and stress form the body. The *Holoptelea integrifolia* is known as chillure in common language, the plat are geographical changes of the karanja (*Millettia pinnata*) In this article the cytological characteristics of *Holoptelea integrifolia* have been presented.

## INTRODUCTION

A medium sized to large glabrous deciduous tree, 15-25 m in height with whitish or yellowish grey bark exfoliating in irregular flakes and with an offensive smell when freshly cut<sup>1</sup>. The bark and leaves are bitter, astringent, anthelmintic, diabetes, helminthiasis, skin disease, intestinal disorder, leprosy, rheumatism. The seeds and stem bark are used externally to treat ringworms<sup>2,3</sup>. Sacred groves can be used as indicators for potential natural vegetation<sup>4</sup> and are vital for well being of the society. Sacred groves or sacred trees serve as a home for birds and mammals, and hence, they indirectly help in the conservation of living organisms<sup>5</sup> sacred groves are the religious practice of conserving biodiversity with strong beliefs, customs and taboos and are treasure house of rare and endemic species. Everything within these groves is under the protection of the reigning deity of the grove and the removal of any material, even dead wood or twig is a taboo<sup>6</sup> Sacred groves are the repositories of rare endemic, threatened species and are the remnants of the primary forest left untouched by the local inhabitants. They are protected even to date due to the cultural and religious beliefs and taboos along with the deities that reside in them. As a result of this, sacred groves are still conserved and contain a diverse gene pool of ethno botanically important species. The sacred groves found in different regions of India possess rich diversity of medicinal plants and provide suitable habitat for their sustainable, natural regeneration<sup>7-9</sup>. Protection of a large number of medicinal plants in sacred forests of different parts of India is some of the well documented by earlier studies<sup>10-12</sup>. It is also observed that more than 35,000 plant species are being used around the world for medicinal purposes<sup>13</sup>. A few tours were planned so as to study the flora of sacred groves. Twenty nine SGs have been reported from Banaskantha district of Gujarat. The sacred groves found in India can basically be classified under three categories (based on analysis of studies on sacred groves): Traditional Sacred Groves – It is the place where the village deity resides, who is represented by an elementary symbol, Temple Groves – Here a grove is created around a temple and conserved and Groves around the burial or cremation grounds<sup>14</sup>. The sizes of the groves range between one acre to two square kms<sup>15</sup>.

## TAXONOMY & NOMENCLATURE

**Species name:** *Holoptelea integrifolia* Planch.

**Family:** Ulmaceae

**Synonym** *Ulmus integrifolia*

**Vernacular/Common name** Indian Elm (English), Kanju, chirol (India)

## BOTANICAL DESCRIPTION

It is a large deciduous tree with strong ascending or spreading branches marked with tubercles. Under favourable conditions the tree grows up to a height of 30- 35 m and 3 m girth with a clear bole of 10 m or more and a broad crown. Bark is grey, fairly smooth, pustular, exfoliating in somewhat corky scales. Leaves alternate, elliptic-ovate, 5-13 cm long, acuminate, entire, sub-coriaceous, nerves 5-8 pairs, rarely cordate or oblique. The bark when cut and the leaves and twigs when crushed emit an unpleasant odour. Flowers are polygamous, greenish-yellow, in short racemes, or fascicles. No of stamens are 8 in male flowers, 5 in bisexual flowers; anthers are hairy. Ovary is unilocular and stalked.

### FRUIT AND SEED DESCRIPTION



**Fruit:** Fruit is an oval or suborbicular samara, with membranous reticulately veined wings, 2.5 cm in diameter on a long slender stalk, single seeded. 25000 to 29000 fruits weigh one kg. Each samara contains one seed.

**Seed:** The seed may in practice be equal to the flat samara or the de-winged samara. It may also refer to the morphological seed after extraction, which is very small, whitish and kidney-shaped.

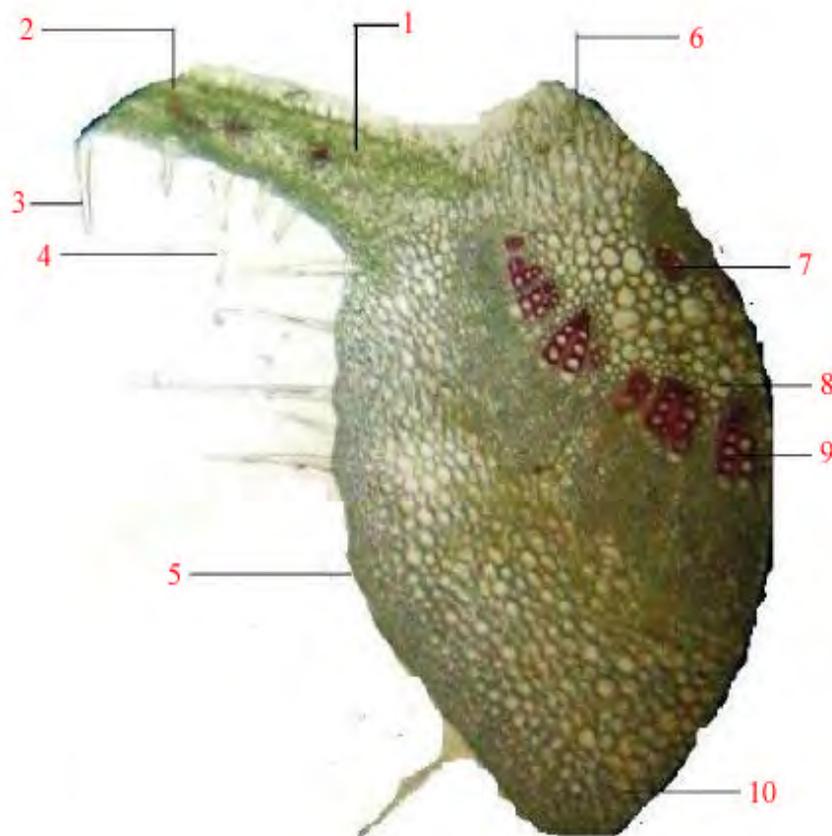


### Flowering and fruiting habit

The old leaves chiefly fall in January-February, the new leaves appear in April-May. The flowers appear on the leafless tree from February to March and fruits mature April to May. The fruits fall soon after ripening that is followed by leaf fall of other species, which protect the seeds from direct sunlight. Direct sunlight may cause the death of the seed.

### MICROSCOPICAL DESCRIPTION

Microscopical features revealed that upper and lower epidermis of thin walled polygonal cells with wavy margin. Uniseriate covering and multicellular trichomes are present on both surfaces. After epidermis chlorenchyma present. It is differentiated in to upper Palisade and lower spongy tissue. Transverse section of the leaf across the midrib shows xylem towards lower epidermal cells, which are highly lignified. Phloem towards lower epidermis. Powder microscopic examination of the leaves revealed the presence of covering trichome, stomata, xylem vessel and epidermal cell.



1. Upper Epidermis
2. Palisade cell
3. Trichome
4. Multicellular Trichome
5. Lower Epidermis
6. Collenchyma
7. Meta xylem
8. Phloem
9. Xylem
10. Collenchyma

## RESULT

The plant cytology are studied of the leaf has shown a remarkable variation in the plant due to geographically. The many picture of microscopy *Holoptelea integrifolia* was done the visible suspects as follows Trichome, Multicellular Trichome, Lower Epidermis, Collenchyma, Meta xylem, Phloem, Xylem, Collenchyma and oil gland.

## FUTURE WORK

The plants has volatile oil and the plant bark consist of high amount of volatile oil and volatile oil has potent wound healing activity and it also use for the regulate the body thermal point regulation.

## REFERENCES

- [1] Anonymous: The useful plants of India, Council of Scientific and Industrial Research, New Delhi, Publication and Information Directorate, CSIR, 1992:271,622.
- [2] Prajapati N, Purohit SS, Sharma AK: A hand book of medicinal plants, Agrobios publication, Jodhpur, 2007:273-274.
- [3] Prajapati N, Kumar U: Agro dictionary of medicinal plants, Agrobios publication, Jodhpur, 2003:60,341.
- [4] Schaaf T. Sacred groves in Ghana: Experiences from an integrated study project. In: amakrishnan, P.S., Saxena K.G. and Chandrasekhar U.M.(Editors), Conserving the Sacred for Biodiversity Management. UNESCO and Oxford-IBH Publishing, New Delhi Pages 145-150 (1998)
- [5] Islam A.K.M.N., Islam M. A. and Hogue A.E. Species composition of sacred groves, their diversity and conservation in Bangladesh.. In: Ramakrishnan, P.S., Saxena, K.G. and Chandrasekhar, U.M. (Editors) Conserving the Sacred for Biodiversity Management. UNESCO and Oxford-IBH Publishing, New Delhi Pages, 163-165 (1998)
- [6] Gadgil M. and Vartak V.D., Sacred groves of Western Ghats of India. Ecological , 30, 152-160 (1976)
- [7] Ved D K, Parthima C L, Morton Nancy and Darshan S, Conservations of Indian's medicinal plant diversity through a novel approach of establishing a network of insitu gene banks, In: Uma Shanker R, Ganeshaiiah K N and Bawaks (eds) Forest Genetic Resources: Status Threats and Conservation strategies, (Oxford and IBH New Delhi) (2001)
- [8] Boraiah K.T., Vasudeva R., Shonil A. and Kushalappa C.G., Do informally managed sacred groves have higher richness and regeneration of medicinal plants than state – managed reserve forests?, Curr Sci, 84, 804 (2003)
- [9] Airi S., Rewal R.S., Dhar U. and Purohit A.N., Assessment of availability and habitat preference of Jatamansi – a critically endangered medicinal plant of West Himalaya, Curr Sci, 79, 1467 (2000)
- [10] Vartak V.D., Kumbhojkar M S and Nipuge D S, Sacred groves in tribal areas of Western Ghats: treasure trove of medicinal plants, Bulletin of Medico–Ethno–Botanical Research, 8, 77–78 (1987)
- [11] Bhakat R.K. and Pandit P.K., Role of a sacred grove in conservation of medicinal plants, Indian Forester, 129, 224–232 (2003)
- [12] Bhakat R., and Pandit P.K., An inventory of medicinal plants of some sacred groves of Purulia District West Bengal, Indian Forester, 130, 37–43 (2004)
- [13] Sukumaran S., Raj ADS Medicinal Plants scared groves in Kanyakumari district, Southern Western Ghats, Indian J. Trad, Knowl, 9(2) 294-299 (2010)
- [14] Patel H.R. and Patel R.S. Sacred groves and sacred plants of R. D. F. Poshina range forest of Sabarkantha district North Gujarat, India, Life science leaflets (2012)
- [15] Gupta A., Shukla S., Koradiya D., Bhavsar P., Anil., Ramji Patel and Taviyad R., A cultural and ecological study of sacred groves in Balaram Ambaji and Jessore sanctuary in Banaskantha district of Gujarat. Abstract. National Workshop on Community Strategies on the Management of Natural Resources, Bhopal