MONOGRAPH OF KURCHI BARK

HOLARRHENA ANTIDYSENTERICA (LINN.) WALL

INTRODUCTION

Botanical Name: *Holarrhena antidysenterica*

Family Name: Apocynaceae

Common Name: Bitter Oleander, Connessi Bark, Kurchi Bark, Dysentery Rose Bay, Tellicherry Bark

Part Used: Bark, Root, Seeds

HISTORY :

The Connessi tree is popular for its numerous medicinal properties considered to be most popular valuable medicinal product of India. The seed and bark of tree has been used in British Materia Medica for a long time. The tree forms a part of several indigenous system of medicine, where it has been used in the treatment of dysentery and diarrhoea. Several Indian tribes have used the plant in different diseases like anaemia, epilepsy and cholera. In Ayurvedic and Unani system of medicine it is used in anthelmintic, in diarrhoea and skin diseases.

GEOGRAPHICAL SOURCE:

Indigenous to tropical Himalayas at 3500 ft. and found throughout forests of India at higher altitude

COLLECTION:

The plant is a small tree and besides the bark, seeds known as Indrajav, are also used in medicine. Bark is collected from 8 to 12 years old trees by making suitable transverse and longitudinal incisions. It is found that from July to September, the bark contains maximum percentage of alkaloids and should preferably be collected during the above period.

DESCRIPTION :

MORPHOLOGY :

- Size and shape: Small re-curved pieces of varying sizes and thickness.
- Outer surface : Buff to brownish, rough, wood sometimes attached to inner bark.
- Fracture: Short and granular.
- Taste: Bitter.

MICROSCOPY :

Periderm:

- Cork : They are 5-9 layers, thin walled rectangular cells, some with yellowish matter.
- Phellogen : Two layers of colourless rectangular cells.
- Phelloderm : They are 5-10 layers, thin walled somewhat rectangular cells, at times arranged in radial rows. The parenchymatous cells contain rhomboidal crystals and a few starch grains.

Cortex:

- They are wide, interspersed with groups of lignified, pitted, stone cells of large lumen and of various shapes (rectangular to elongate) and sizes.
- The cortical parenchyma surrounding the stone cells and as well the stone cells themselves contain rhomboidal crystals.
- Starch grains are present in cortical parenchyma.
- One or two groups of non-lignified pericyclic fibres are seen in the cortex.

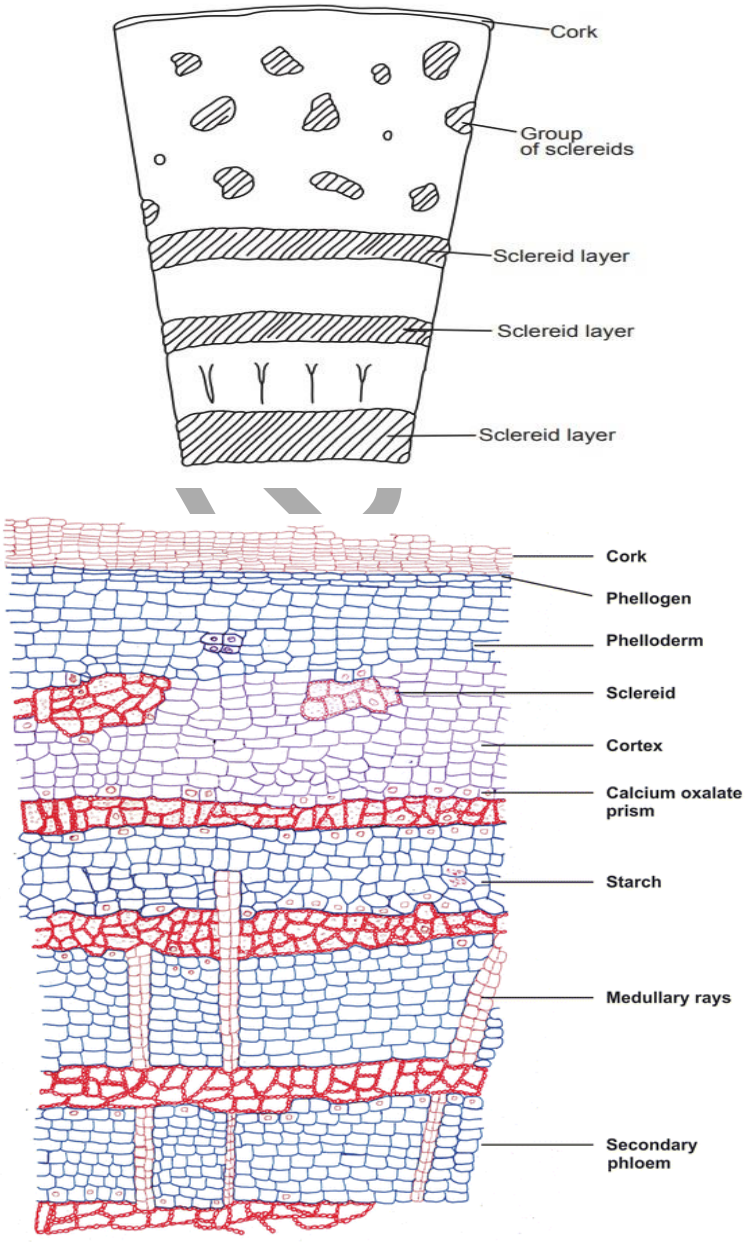
Secondary phloem:

- It consists of phloem parenchyma, medullary rays and groups of stone cells arranged in tangential rows separated by medullary rays.

- The stone cells in the secondary phloem are encircled by a sheath of parenchyma containing rhomboidal crystals of calcium oxalate.

Medullary rays:

- They are 1-3 seriate, wide towards the outside and consist of thin walled radially elongated parenchymatous cells.
- Phloem parenchyma and medullary ray cells contain starch grains. Phloem fibres are absent.



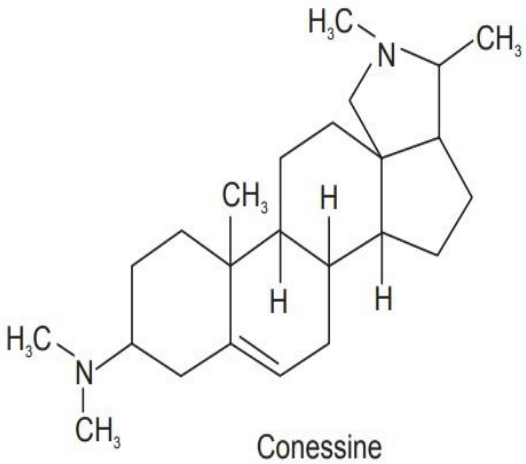
T.S of Kurchi Bark

POWDER ANALYSIS :

- **Stone cells :** In-group, rectangular to elongated, walls striated and have pitted thickening and contain prisms in them.
- **Cork cells :** Thin walled, some colourless and other brown.
- **Calcium oxalate crystal:** Present in the form of scattered all over in the powder.
- **Starch grains :** Few and simple.
- **Wood elements :** These should not appear in the powder rule but some wood elements may be seen
- **Medullary rays :** Phloem parenchyma traverse the medullary rays at right angles through such pieces are not seen many number.

CHEMICAL COMPOSITION :

- Around 30 alkaloids have been isolated from the plant, mostly from the bark. The total alkaloidal constituents of Kurchi bark vary from 1.1% to 4.72%. The main steroidal alkaloid is conessine (20–30%). The other alkaloids include conessine, kurchine, kurchicine, holarrhimine, conarrhimine, conaine, conessimine, isoconessimine , kurchessine, conessine and isoconessimine
- The bark contains the alkaloids, regholarrhenineA, -B, -C, -D, -E and –F
- The bark contains digitenol glycoside holadysone.
- A new steroidal alkaloid, named antidysentericine, has been isolated from the seeds of *Holarrhena antidysenterica* and characterized as 3 beta-dimethylaminocon-5- enin-18-ones
- In addition to alkaloids the bark also contains gum, resin, tannin and lupeol



Conessine

THERAPEUTIC USES :

- The bark is used as an astringent, anthelmintic, antidontalgic, stomachic, febrifuge.
- It is a well known drug for amoebic dysentery and other gastric disorders.
- It is also indicated in diarrhoea, indigestion, flatulence and colic
- Root and bark is used in amoebic dysentery. Bark is astringent, anthelmintic, amoebicidal, diuretic. Used in colic, dyspepsia, piles, diseases of the skin and spleen.
- Seed is antibilious. Used for promoting conception, also for toning up vaginal tissues after delivery

ALLIED DRUGS :

Bark Hollarhena Floribunda obtained from Tropical Africa contains 1.5 to 2.5 steroid alkaloids from which conessine is 50% or more and is a rich source of Conessine. It is used in the same way as Kurchi bark.

MARKETED PRODUCTS :

It is one of the ingredients of the preparations known as

- Diarex PFS,
- Diarex Vet. (Himalaya Drug Company),
- Mahamanjishthadi kwath, Mahamanjisthadyarishta (Dabur) and
- Amree plus granules, Purodil capsules (Aimil Pharmaceuticals).

REFERENCES

- Jamadagni, P. S., Pawar, S. D., Jamadagni, S. B., Chougule, S., Gaidhani, S. N., & Murthy, S. N. (2017). Review of Holarrhena antidysenterica (L.) Wall. ex A. DC.: Pharmacognostic, pharmacological, and toxicological perspective. *Pharmacognosy reviews*, *11*(22), 141.