

Diploma in Pharmacy 1st Year

Pharmacognosy Practical

To perform the gross anatomical study (transverse section) of *Nux vomica*

Aim:

To perform the gross anatomical study (transverse section) of *Nux vomica*.

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Kaur Navjit , “Practical Manual of Pharmacognosy” Published by Nirali Prakashan , Pg.No 102 – 106

Biological Source :

Nux vomica consists of the dried ripe seeds of *Strychnos nux vomica* Linn, belonging to family Loganiaceae; containing not less than 1.2% strychnine.

Materials and Apparatus Required

Nux vomica, sharp razor, brush, dropper, needles, watch glass, microscopic slides, cover-slips, safranin, water, glycerine, and compound microscope.

Theory

Nux vomica is a popular natural medicine for a variety of symptoms and ailments. It derives from the same-named evergreen tree found in China, East India, Thailand, and Australia. Because of their toxicity, the raw seeds are dubbed "poison nut."

To ensure that they are safe to eat, they must be treated first.

Supplements containing *Nux vomica* are available in pill or powder form.

Morphological Characters

- 1) The epidermis is made up of lignified covering trichomes that are thickly wavy, bent, and twisted.
- 2) The trichome's base has a thick walled base with slit-like pits.
- 3) The upper half of the trichome has wavy walls and is roughly at right angles to the base.
- 4) Endosperm is made up of isodiametric cells with thick walls made of hemicellulose that swells with water and includes plasmodesma.
- 5) Endosperm and embryo contain alcurone granules and fixed oil.
- 6) **Hairy Epidermis:** Single-layered epidermis with lignified trichomes consisting of a pitted bulbous base and a narrowly elongated projection that is somewhat curved beyond the base.
- 7) All epidermal cells' trichomes run parallel in one direction, giving the seed's testa a silky appearance.
- 8) **Collapsed Parenchyma:** they are yellowish brown contents in two layered collapsed parenchymatous cells.
- 9) **Endosperm:** They form the majority of the seed. The endosperm's outermost layers seem palisade-like beneath the collapsed parenchyma. whereas the inner layers contain polyhedral cells.

Aleurone grains and oil droplets are also found in endosperm cells.

Procedure

1. 2-3cm long pieces of seed should be taken.
2. The seed should be placed between thumb and first finger of left hand.
3. The razor should be held in right hand with edge of blade facing inward and the handle at right angle to it.
4. The top portion of the seed should be dipped in water
5. Then the seed should be cut in transverse sections as soon as possible in a watch glass containing water.
6. The thinnest part of the seed should be selected with the help of a delicate brush.
7. Thin section of the seed should be transferred into clean watch glass with water.
8. Few drops of safranin stain should be applied in the watch glass with water.
9. The seed should be left for 3-5 minutes.
10. Stain should be removed and cleaned with water if required
11. The thinnest part should be placed in the center of the slide
12. A drop of glycerine should be applied over the seed.
13. It should be covered with a coverslip with the help of needle.
14. The seed should be observed under a compound microscope after staining and mounting.

Result :

The gross anatomical study of *Nux vomica* was performed and determined.