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Diploma in Pharmacy 1st Year
Pharmacognosy
Experiment
To perform the morphological study of Ephedra.

Aim:
To perform the morphological study of Ephedra.

Reference :
Dr. Gupta G.D , Dr. Sharma Shailesh , Kaur Navjit , "Practical Manual of Pharmacognosy" Published by Nirali Prakashan , Pg.No 39 - 42

Synonyms
Ma Huang

Biological Source :
Ephedra consists of the dried aerial parts of Ephedra gerardiana Wall, Ephedra sinica Stapf, Ephedra equisetina Bunge, Ephedra nebrodensis Tineo and other Ephedra species, belonging to family Ephadreaceae.

Morphological Characters
This form of evaluation involves a series of tests using the sense organs. The size and morphology of various species differ from each other on following aspects:

1) **Ephedra gerardiana:** It has a cylindrical woody stem with a grey or greenish colour. The stems have nodes, internodes, scaly leaves, and terminal buds. The internodes are 3-4 cm apart, and the nodes are covered in scaly leaves. They have a bitter flavour. Within a two-leaved involucre, the plant has stamens and pistils on separate flowers, staminate flowers in catkins with a membraneous perianth, and

pistillate flowers terminal on axillary stalks. Fruit is a succulent cone with two carpels each containing a single seed. slender and erect branches, little scale-like leaves articulated and linked at the base forming a sheath.

2) **Ephedra sinica:** The stem is 4-7 mm thick, while the branches are 1-2 mm thick. Branch lengths can be up to 30 cm with internodes of 3-6 cm. The colour of the main stem is dark brown. The opposite, decussate, and subulate leaves are 2-4 mm long. The base of the leaf is reddish-brown, the apex is acute and recurved, and the lamina is white. A pair of sheathing leaves found at the nodes, encircles the stem and is attached at the base.
3) **Ephedra equisetina:** Stems are 1.5-2 mm thick, woodier, and more branched Branch lengths range from 25 to 200 cm, with internodes ranging from 1-2.5 em in length. The exterior surface is smooth and grey to pale green.
4) **Ephedra nebrodensis:** The stems are 15 to 35 cm long, 1-2 mm thick, cylindrical, greenish-yellow in colour, with brownish and prominent nodes and a cracked surface that is fibrous in the cortex but includes brownish powdery matter in the pith. The leaves are astringent and bitter in taste, with a brownish to whitish-brown colour, scaly, connate, opposite, and decussate leaves, acute, pleasing, and slightly aromatic odour.

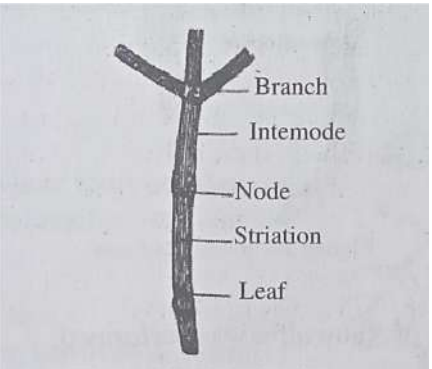


Figure 13: Ephedra Stem

Result :

The morphological study of Ephedra was performed.