

# Diploma in Pharmacy, 1<sup>st</sup> Year

## Pharmacognosy Practical

### 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 Ephedraceae.

#### **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 membranous 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 cm 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.

## **Result :**

The morphological study of Ephedra was performed.