

EPHEDRA

Botanical Name :

Common Name :

Part Family :

Plant Use :

Introduction : Ephedra plants are gymnosperm.

Ephedra commonly known as joint pine, jointed fax, Moemon Tea or Brigham tea.

⇒ It is unique extant genus (being the only one in its family and order)

Distribution of Ephedra :

⇒ Ephedra is a genus of gymnosperm shrub known for its distribution in various arid regions of the Northern Hemisphere including Northern China, North America, Southern Europe, North Northern Africa, South west, central Asia & western South America.

⇒ There are 77 species of Ephedra but Ephedra sinica is origin in China, where it was first used therapeutically.

⇒ Eight species from India are E. intermedia, E. gerardiana, distributed in dry parts of Punjab, Haryana, Rajasthan & parts of Kashmir to Sikkim

Botanical Characteristics :

⇒ The ephedra plant body is sporophytic & shows xerophytic character

⇒ They are erect, perennial, evergreen branching woody shrubs & climbing vines of 1.5-4 ft height, typically grow on dry, rocky sandy slopes or arid regions

- ⇒ There is prominent underground tap root system
- ⇒ The stem is nearly leafless, green, photosynthetic, the plant has many slender, cylindrical, yellow-green branches [differentiated into node & internode]
- ⇒ The leaves are usually opposite or whorled, small scaly + in pairs at nodes & fused into a sheath at base after falls after dev. True foliage leaves are absent.
- ⇒ In August, the flower bears poisonous, fleshy red cones resembling berries.
- ⇒ The plants are mostly dioecious - with pollen strobili appearing in whorls & female strobili also in whorl, 5 bracts fuse around a single ovule
- ⇒ The mature yellow to dark brown, double seeded cones are visible in the fall

Cultivation of Ephedra:

- ⇒ Ephedra prefers well drained, sandy, rocky soil which prevents water from pooling around roots that leads to root rot, pH = 6.0 - 6.8. To enhance soil quality, add organic matter like compost or well rotted manure.
- ⇒ Once the soil is ready, place the plant in the hole, making sure the root crown is level with the soil.
- ⇒ The suitable season for planting - spring or early fall
Temp → moderate.
- ⇒ Proper spacing 2-3 feet apart
- ⇒ For the first week after planting there is require of daily watering but once Ephedra is drought-tolerant reduce watering to every 2-3 weeks

⇒ Fertilizing of Ephedra is essential for robust growth, by using N, P, K. If we prefer organic method, then fish emulsion or seaweed extract.

Pruning is essential for health of Ephedra. Aim to prune in late winter or early spring just before new growth begins.

→ Regular pruning helps in promoting lateral branching and enhance plant shape.

Disease Management :

- Pest can affect Ephedra, common culprits - aphid, spider mites or scale insects.
- To control these pest use insecticidal soap or neem oil, or Beneficial insects.
- Environmental stresses like drought or heat can take toll on Ephedra. Recognise signs of stress is crucial look for wilting or leaf drop.
- To mitigate these, mulching can help to retain soil moisture. Adjust watering schedule during extreme heat.
- Leaf discoloration can signal problems.
- For poor flowering or fruiting ensure that there is enough sunlight or proper fert.

Uses :

- As a source of Ephedrine, in pharmaceuticals.
- *E. gerardiana*, *E. intermedia*, *E. sinica* for containing alkaloids → ephedrine or pseudoephedrine.

- ⇒ These alkaloids are effective in medication & herbal remedies in traditional Med Chinese medicine.
- ⇒ These are used to treat respiratory condⁿ. like asthma, hay fever, bronchitis, cold, cough, flu as well as nasal decongestion & as a stimulant.
- ⇒ Ephedra sinica first used as therapeutically it has a strong pine odor & astringent taste, in Chinese Ma Huang - as yellow astringent or yellow hemp. It is to increase mental acuity & improve sexual performance increase circulation, decrease weight through an increase in sympathetic nervous system activity & thermogenesis.