

Khair (Senegalia catechu)

Khair or Senegalia catechu is a deciduous tree that belongs to the family Fabaceae. It is one of the most widely distributed tree species in India and is known for its medicinal properties. The tree is also popularly called Cutch tree or Indian Gum Arabic tree. The tree has been used in Ayurvedic and Unani medicines for centuries, and various parts of the tree have significant uses in industries like tanning, dyeing, and gum production.

Tree Characteristics	Description
Common Name	Khair
Scientific name	Senegalia catechu
Maximum height	Up to 15 meters
Diameter of crown	Up to 10 meters
Diameter of tree trunk	Up to 1 meter
Years it takes to grow	15-20 years
Economic benefit to farmers	Used for timber, fuelwood, charcoal, and traditional medicine. Also used in the tanning industry for making high-quality leather.

Physical characteristics

Khair tree can grow up to a maximum height of 15-20 meters and has a dense and spreading crown. The tree has a smooth, grey bark, which peels off in thin flakes. The leaves of the tree are bipinnate, with small leaflets, and the flowers are yellow in color. The tree bears small, oblong, brown-colored pods that contain the seeds.



Uses of Khair tree

The Khair tree has numerous uses, and almost every part of the tree is utilized in some way or the other. Here are some of the main uses of the Khair tree:

Medicinal uses

The bark, wood, and leaves of the Khair tree are used in traditional medicine for treating various ailments. It is particularly known for its astringent and antiseptic properties, and is used in the treatment of diarrhea, dysentery, and other digestive problems.

Dyeing: The heartwood of the Khair tree contains a high amount of tannins, which are used for dyeing fabrics and leather. The dye obtained from the Khair tree is a rich reddish-brown color.

Gum: The Khair tree produces a gum known as “kattha,” which is used in the food industry as a flavoring agent and a natural preservative. It is also used in the manufacture of paan (a popular Indian mouth freshener).

Timber: The wood of the Khair tree is strong and durable, and is used for making furniture, agricultural implements, and other products.

Fuel: The wood of the Khair tree is also used as fuelwood in rural areas.

Environmental uses: The Khair tree is used in soil conservation and erosion control programs, as its deep roots help to stabilize the soil and prevent erosion. It is also a nitrogen-fixing tree, which means it helps to improve soil fertility by fixing atmospheric nitrogen into the soil.

Overall, the Khair tree is an important plant with numerous uses and benefits for people and the environment.



Ecological role

Khair tree plays a significant ecological role in maintaining the ecological balance of the forests. The tree has the ability to fix nitrogen in the soil, which helps in improving the soil quality and fertility. The tree also acts as a host

to various species of insects and birds, which help in pollination and seed dispersal.



Importance to birds, animals, and insects

Khair tree provides an important habitat and food source for various species of birds, animals, and insects. The pods of the tree are consumed by cattle and wildlife, while the leaves serve as fodder for livestock. The tree also provides shelter and nesting sites for birds, and the flowers attract bees and other pollinators.



Soil type and climatic conditions

Khair tree grows well in sandy and loamy soils that are well-drained. The tree prefers a warm and humid climate with an average annual rainfall of 600-800 mm. It can tolerate temperatures ranging from 5-45 degrees Celsius.

States in India where the tree is found naturally

Khair tree is widely distributed throughout India and is found in states like Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan, Gujarat, and Maharashtra.

Different stages of tree growth

The Khair tree grows in three stages. In the first stage, the tree grows rapidly and reaches a height of 3-4 meters. In the second stage, the tree grows at a slower pace, and the wood becomes hard and durable. In the third stage, the tree matures and bears fruits.

Benefits to farmers through agroforestry

Khair tree is an important agroforestry tree species and is grown by farmers for its multiple benefits. The tree provides a source of income for farmers through the sale of wood, gum, and tannin. It also helps in improving soil fertility and reducing soil erosion. Farmers can also use the leaves and pods of the tree as fodder for livestock, which reduces their dependence on external sources of fodder.

Conclusion

Khair tree is a valuable tree species with significant ecological, medicinal, and economic importance. Its role in maintaining the ecological balance of the forests and providing livelihood opportunities to farmers make it a valuable asset for the country's sustainable development.