

## Khejri in Danger

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**K**hejri (The State Tree of Rajasthan) is one of the most common tree species of Rajasthan. In the Rajasthan it found in Alwar, Sikar, Jhunjhunu, Churu, Jaipur, Bharatpur, Karoli, and Dholpur, some part of Udaipur, Banswara and Dungarpur. It plays a vital role in preserving the ecosystem of arid and semi-arid areas, mainly in the Thar Desert.



**Botanical Name:** *Prosopis cineraria*

**Family:** Fabaceae

The tree is frost and drought resistant and tolerant extreme temperature ranging from 40-45<sup>0</sup>C in summer to less than 10<sup>0</sup>C in winter. The tree can withstand the hottest winds, the desert season and stay alive where other plants cannot survive. Khejri also found in India (In the dry regions of Delhi, Gujarat, Punjab, and MP).

In the Rajasthan khejri also known as kharja, Jant or janti. Khejri is tree of desert and it's rarely seen in hilly areas.

### Prevalent Lines for Khejri

- State Tree of Rajasthan
- Wonder Tree
- Kalpavriksha of Rajasthan
- King of Desert
- Golden tree of Indian desert

**Threat to conservation:** Despite being the most documented tree in the desert with all its importance and services to the community through food, fodder, wood and medicine, the tree is struggling for existence. These studies have pointed out some major threats to ecosystem of the desert and some specific to the khejri tree.

1. **Droughts:** It is the most serious problem in the Rajasthan. khejri get more pronounced by excessive lopping especially during times of drought. Excess evaporation occurs in Thar Desert of Rajasthan, so tree starts to dry up from the top ultimately leading to its death.
2. **Urbanisation:** Due to urbanisation changing the land use pattern of the desert has been affecting the biodiversity and creating pressure on the native flora and fauna. There has been a rapid increase in urban areas as hectares of land are being converted every year to expand cities and build new industries, causing direct loss to the already slow growing khejri tree.



Khejri tree also getting replaced by the plantation of Neem, Gulmohar, Karanj, Piplal, Sheesham.

- Lumbering:** khejri tree are cutting for trade or business. It's done by lumbered and this process is promoted by rural people for fuel use and urban people for land use.

**Insect Pest of khejri and their control:** Due to increase in temperature of rhizosphere of plant, the roots become weak so the resistance power decrease of plant so that insect get easily attack on the root.

**Khejri root borer:** Scientific name of khejri root borer is *Celosterna scabrater*. Belongs to order Coleoptera. It is most serious insect of khejri tree now a days. The bristles of this insect penetrate into the bark of the weak root of khejri and while eating the roots, make a cross slanting tunnel in them and enter inside the roots. Keeps eating the roots insides. When these curls get bigger, they start eating the main roots and make tunnels in them.

Then gradually, due to hollowing of the roots, the vascular system of the roots of the tree start breaking. Gradually, these braids eat and destroy the vascular system of the roots, due to which the movement of food and water in the plant dries up completely.

Sometimes these insects make tunnel in the main trunk of the tree and go up to a great height and hollow the entire tree along with the root. After digging the root of the tree, it has been found that the roots of the root borer can live comfortably in the ground and roots up to a depth of 3 to 5 meters.

Root borer female lays eggs in the ground from which small larvae come under favourable condition and latter attack the roots of khejri in braided form. These braids later turn in to adult females and then lay eggs in the ground and roots of khejri trees, from which larvae come out and turn into braids in due course of time. This sequence continues continuously.

**Control of Root borer:** Root borer is the most damaging factor of khejri.

For prevention to root borer apply **Endosulfan 35EC** on healthy tree during rainy days. Dissolve 4-7mg /lit. of water and spray it so that the adult beetles of the root borer are killed.

**Copper oxychloride 40-50gm** with **Chlorpyriphos 20EC** and 20gm of **Carbendazim** in the roots of the tree to kill insects, beetles, etc. present in the roots

During the rainy season, destroy the adult beetles of roots borer by attracting them towards light by lighting a light loop or burning fire in the fields. Immediately uproot and burn dry and infected trees so that the insect insect wicks and fungus present in them are destroyed by burning.

**Fungus (Mildew):** Another reason for the drying of khejri trees is the infection of fungi on the roots of khejri. Major species of fungi that attack the roots of khejri are-Ganoderma, Fusarium, Rhizoctonia etc. Ganoderma fungus is also called Vishkhopra or Bhamphora in the native language. In the end of September November, umbrella- shaped blisters appear between the roots and stem of khejri, which are due to infection of Ganoderma fungus.

These bells are soft in the beginning but later become hard and chocolate coloured. Due to the infection of this fungus, similar functions of the



vascular system of the plants start to fail and in the month of August-September, the leaves of the tree start turning yellow and latter gradually the whole tree dries up.

**Control of fungi:** Drenching the roots of khejri tree by dissolving 20gm of **Bovostin** and 40 gm **Blightox** in 20lit. of water. Repeat this process 2-3 times after every 15 days.

**Termite:** Termite attack plays an important role in drying khejri plant. Termite is an egg laying machine; it's given one egg per second. Termite mainly damage external part of tree.



**Control of Termite:** to prevent the infection of termite, apply a solution of **Chlorpyrifos** and lime on the stem of khejri to a height of one or two feet.

For control of underground termites, dig a trench near the trunk and root of tree and mix **Chlorpyrifos** or **Phorate** or **Endosulfan** 4% powder with soil and fill it in the trench so that the termite or its stems die or do not regenerate.

### Sacrifices to conserve khejri tree: Our Motivation

**Chipko Movement:** In 1730 AD Amrita Devi of khejarli village (Jodhpur) and her three young daughters laid down their lives to protect the sacred trees which the ruler of Marwar Maharaja Abhay Singh has order to be cut down for building his new places. This inspired other members of the community and a total of 363 people sacrificed their lives in coming days trying to save the trees by hugging them while the king's men chopped their bodies with axes. The MARTYRS belonged to Bishnoi community and the trees which they were protecting were khejri.

- ❖ The first Amrita Devi Bishnoi National Award for wild life conservation was conferred on 11 sep. 2001, posthumously on Ganga Ram Bishnoi of Chirai village in Jodhpur.
- ❖ National Forest Martyrs Day 11 september
- ❖ Wildlife protection act, 1972
- ❖ CAZRI took out a report which stated that the number of khejri trees per hectare in the 12 dry districts of Rajasthan had dropped to less than 35%.

### References

1. Bhandari, M. M. "Famine Foods in the Rajasthan Desert." *Economic Botany* 28, no. 1 (1974): 73–81.
2. Saraswati Bishnoi (2018) "Khejri: A Wonder Tree of the Thar" Professor Saraswati Bishnoi is a botanist and professor at the University of Bikaner in Rajasthan.