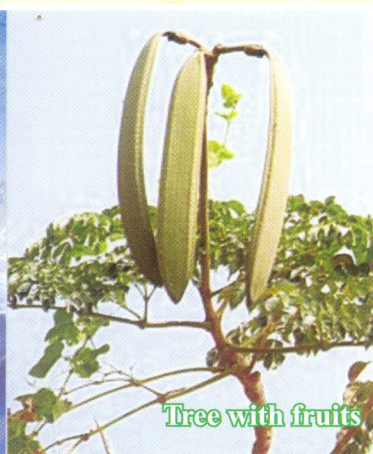


Technical bulletin on *Oroxylum indicum* (Shyonak) a high value threatened medicinal plant species



Seeds of
O. indicum



Tree with fruits

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Introduction : *Oroxylum indicum* occurs in India, Sri Lanka, Myanmar, Malaysia and Malacca. In India it is found throughout the warmer part of the country. In Rajasthan it is found in some forest areas of Udaipur and Banswara and Pratapgarh (Sitamata sanctuary) districts. Recently this was assessed critically endangered species in Rajasthan in a camp workshop organized by Rajasthan Forest Department and FRLHT Bangalore. Further for its conservation in Rajasthan, Bhanwarkoat forest area in Banswara forest division has been selected for establishment of MPCA of this species by FRLHT.

Oroxylum indicum vernacularly known as Shyonak, Sonpatha, Tetu, Arlu, Farri etc., is a small to medium sized growing up to 10 mtr. tall deciduous tree with light grayish brown, soft, spongy bark; large pinnate, bi pinnate or tri pinnate ovate to elliptic leaves; lurid, purple, fleshy foetid flowers and large, flat, sword shaped capsules full of many flat and papery thin seeds with broad silvery wings. Fruits are about 100 cm. long and 10 cm wide. **This tree can easily be recognized in the field by its 2 to 3 branched large leaves, strikingly large purplish flowers and huge sword like flat woody fruits.**

Most parts of *Oroxylum indicum* trees are used in Ayurvedic system of medicines. **The roots are one of the ingredients of the well-known Ayurvedic formulation "DASA MOOLA"** which is used as anti inflammatory, appetizing, digestive, carminative, antipyretic, tonic, and anthelmintic. Also used for treatments of inflammation, sprain, hiccup, asthma, bronchitis, indigestion, diarrhea, dysentery, gout, vomiting, leucoderma, wounds, rheumatoid, arthritis, and fever. Leaves are reportedly used for the treatment of ulcers and headache. Tender fruits are useful in treating cough, bronchitis, indigestion, and leucoderma. Mature fruits are used in the treatment of intestinal worms, bronchitis, and bleeding piles. The seeds are purgative.

Due to threat status and its importance, it becomes necessary to multiply this species in suitable forest areas of south Rajasthan. For large scale multiplication proper propagation technique of this species at nursery level is required. Under the circumstances it is considered pertinent to study the propagation of this species at nursery level by seeds.

Order : Lamiales
Family : Bignoniaceae
Genus : *Oroxylum*
Species : *Oroxylum indicum*



Material and Methodology of germination of case study

Location of study : Forest Research Farm, Banki, Udaipur, Rajasthan

1. To study the propagation of *Oroxylum indicum* at nursery level by seeds, fresh mature seeds were collected from medium aged trees of *Oroxylum indicum* from Udaipur (Kotra region) and Som ghata area during month of April 2008 and stored at room temperature in pet jar
2. From these seeds 120 seeds with 4 replication were taken for each treatment.
 - A. Treatment T1 (24 hour soaking in normal water at room temperature) 120 seeds with 4 replication
 - B. Treatment T0 (Control / without any treatment) 120 seeds with 4 replication
3. Seeds were sown in root trainer cells of capacity 150 cc filled with mixture of soil, sand and vermi compost in the ratio of 1:1:1 and were kept on stands in Agri net house.
4. Regular watering and other operations as per requirement were done in these root trainer cells.

5. Periodic observations were taken on germination of these seeds for all the treatment given. Germination percentage were recorded for all the treatments given separately and recorded in the table given below:

S.No.	Treatment given before seed sowing	(1) Germination % of seeds sown during the month (2) Time taken in germination		
		April 08	August 08	Oct. 08
1	T ₀ -Without any treatment	(1) 92.91 (2) 5 week	(1) 94.58 (2) 4 week	(1) 80.62 (2) 6 week
2	T ₁ -24 hour soaking in normal water at room temperature	(1) 91.25 (2) 5 week	(1) 99.58 (2) 3 week	(1) 80 (2) 6 week

Conclusion :

- Seeds take 3-6 weeks for complete germination.
- No chemical treatment is required for germination.
- Germination percentage is 99.58 with seeds soaked in normal water for 24 hours. Almost all water soaked seeds germinate.

A study for raising tall plants of *Oroxylum indicum* (Shyonak) in different combination of potting mixture at Banki Research Farm, Udaipur :

Introduction :

Tall seedlings/saplings (+1.2 meters) when planted on any site not only result in higher survival percentage but also need less time to establish and simultaneously create impact of instant greenery. Tall plants are also needed for planting along roadsides, avenue planting in urban areas, developing townships and in forest areas. The demand for tall seedlings is increasing. The nurseries of FD can raise tall plants of various species in large numbers and that too at a reasonable cost.

Efforts are being made to raise tall plants in 12 months with existing facilities of root trainers and agrinet.

Plan of operation :

Different Treatments proposed for raising of plants :

- 100 plants with three replication (100 plants X 3 replication X 4 treatments = 1200 plants) were under trial
- Different treatments (or potting mixture) taken were as under
 1. Sand, Soil, ordinary goat manure (1:1:1) used as control
 2. Sand, Soil, vermi compost (1:1:1)
 3. Sand, Soil, ordinary goat manure (1:1:1) and a fix dose 200 gram of bone meal
 4. Sand, Soil, vermi compost (1:1:1) and a fix dose 200 gram of bone meal

The following procedure was followed for raising tall seedlings :

- Transferring root-trainer seedlings (3-4 month old) to large poly bags of size 30 cm X 45 cm. The large size poly bags were kept in agri net condition to facilitate growth.
- Different combination of potting mixture as explained above were used for raising quality tall plants of *Oroxylum indicum*.
- Timely watering, weeding and hoeing were given.

After six month observation were recorded are as under:

**Forest Research Farm Banki : Tall Plants Growth
Observations taken during March 2010**

S. N.	Treatment	Different Treatments given	Total No. of Plant	Ht. Ave. (Mt.)
1.	T-1	Vermi compost with bone meal.	300	0.7543
2.	T-2	Vermi Compost only	300	0.6829
3.	T-3	Goat Manure with bone meal.	300	0.7190
4.	T-4 Control	Goat manure only	300	0.5052
Total			1200	



T1- Sand, Soil, Vermi compost (1:1:1) +200 gram bone meal

T2- Sand, Soil, Vermi compost (1:1:1)

T3- Sand, Soil, goat manure (1:1:1) +200 gram bone meal

T4 (Control) - Sand, Soil, goat manure (1:1:1)

Result : Potting mixture of Sand, Soil, Vermi compost (1:1:1) +200 gram bone meal gave the best result for *Oroxylum indicum* as compare to other mixtures

These 1200 plants will be distributed for planting in Medicinal Plants Conservation Area (MPCA) of Udaipur and Banswara Forest Division.

Special attention : Divisional Forest Officers of Banswara, Pratapgarh and Udaipur (North, South and Central) are requested to please locate the tree of *Oroxylum indicum* in their forest areas, and take GPS reading of such trees, so that seeds can be collected and plants can be raised at Banki, Udaipur for further planting in these divisions. As on today the number of trees standing in forest is very few. The data so collected about this plant shall be compiled at the level of State Silviculturist, Jaipur for further study and conservation of this species.



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