

Paulownia:

The Miracle Beautiful Multi Purpose Tree

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Royal Paulownia is native to the Orient. It is also called the Chinese Empress tree, the Princess tree, or the Kiri tree. Paulownia is known for its extremely fast growth, clusters of showy and fragrant lavender flowers, large, elephant-ear-sized leaves, and extraordinary cash value. Paulownia is used to make furniture, gift boxes, bowls, toys, clogs, handicrafts, and musical instruments. The wood is also used for traditional products such as construction lumber, plywood, veneer, and charcoal.

Paulownia is a true hardwood, light in colour and weight. The wood is extremely easy to maintain and finish. It is dimensionally stable, does not crack or warp and it will take on and release the moisture without damage.

In Japan, Paulownia wood is used for a multitude of products because it is attractive, strong, lightweight, quick drying, and has good resonance qualities. Demand is so great that Japan imports large quantities of logs and lumber from China, Taiwan, the United States, Brazil, Argentina, Paraguay, and Thailand. Looking to the potential, especially its phenomenal growth rates and multiple uses, many countries have shown interest in this species. It has revolutionised the agro forestry in China and has been introduced successfully in North and South America. Paulownia species are economically important trees in East Asia, and are also attractive exotic trees in Europe, U.S.A. and South Africa, because of their good wood quality and ornamental characteristics. There is great potential to develop the trees of this genus in India because of its wide adaptability and extremely fast growing nature. Paulownia has many recognized species viz. *P. fortunei*, *P. tomentosa*, *P. kawaka*, *P. towaniana*, *P. elongata*, etc. It is widely grown in temperate areas of

Taiwan, China and Australia. Where *P. fortunei* has been planted successfully in several tropical and sub tropical areas of Australia. *P. fortunei* has been recognised as having immense potential for agro forestry in India. And several plantations have come up in Andhra Pradesh, Tamil Nadu, Gujarat, Karnataka and Maharashtra during the last two years by many plantation companies and individual farmers.

This unique tree has vast potential as an environmentally sound substitute or new desired alternative in forestry & horticulture in India. It has a variety of uses, such as these below.....

- Potential forest crop for wood, in fairly short rotations of 5 to 7 years for domestic uses.
- Reforestation, reclamation, healing of strip mined land, farms, pastures.....
- Fuelwood plantations, charcoal products in developing countries.
- Shade trees in yards & drive-ways.
- Shelterbelts, buffers, wind-breaks avenue plantation.
- For parks, recreation areas, suburbs
- Erosion control, landscaping

- A fast growing but long lived tree for ornamental beautification with its spectacular large, lavender blossoms for gardens and avenues.
- Fodder for sheep, goats, pigs, etc.
- Attracts bluebirds, hummingbirds.
- Pollution, dust and sound control.
- Nectar source for apiaries (bees)
- Small groves of trees for yards.
- Educational, scientific research
- Medicines, hobby, and gardens.

Cultivation Aspects

Site Selection

Site selection is an important factor for establishing a successful Paulownia

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FORESTRY SPECIES:

- ☉ PAULOWNIA (*China teak*)
- ☉ TEAK (*Tectona grandis*)
- ☉ GHAMBAR TEAK (*Gmelina arborea*)
- ☉ NEEM (*Azadirachta indica*)

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plantation. Although Paulownia is a fairly adaptable species, it grows best on gentle, lower slopes. The soil should be well-drained but have a high water-holding capacity, should be at least 25 inches deep, and should have a pH around 5.0 – 8.5.

Site Preparation

Site preparation makes planting easier and creates favourable growing conditions for young seedlings. Site preparation operations will depend on the roughness and vegetation of the planting site.

Old fields typically only require herbicide treatment to control weeds and brush. Cut-over land will often have rocks, stumps, and logging debris. Removal of this material with a tractor or bulldozer may be necessary to make future cultural practices easier. Some Paulownia growers hand-cultivate each planting spot to stimulate better root growth and also to remove all competing vegetation.

Source of Plant Material:

Paulownia can be propagated by seeds, stems or root cuttings. Paulownia being a cross pollinated crop, source of seed collection is very important and natural variation is invariable. Stem or root cuttings is slow and lengthy process and sufficient quantity is not possible from sourced Plus Trees. The production of high quality Paulownia samplings is important in improving the yield and quality of wood. Hence recently in-vitro techniques (Tissue culture) has developed in Paulownia for large-scale multiplication to ensure healthy and uniform growth and round the year availability.

Tree Planting

Most Paulownia plantations are planted with seedlings or root stocks. In either case, the planting material should be ordered early to assure your supply. Most planting stock is available from private nurseries. Tissue culture Plants are showing good growth and disease free, true to variety. In India AG Biotech Laboratories (I) Ltd., based at Hyderabad

sourced best plant material and propagating through Tissue culture technology, and supplying uniform samplings to the growers.

The planting density should be high enough so that a forest-like competitive stand will develop quickly. Competition



14 Month old Paulownia Plantation

will limit rapid growth and improve long quality. Tree spacing of 10 feet square is recommended, but spacing from 7 feet to 12 feet square are common.

Weed Control

Since Paulownia cannot grow under shaded conditions, good weed control in the early years of the plantation is critical. You may control weeds either with a directed herbicide spray or by mowing. Several weedings may be necessary during the first year of plantation.

Irrigation

Like other plants, Paulownia seedlings can die from inadequate moisture. To protect your investment, irrigate the young plantation during dry periods. This can be time consuming and expensive, but it may carry the young trees through difficult dry periods.

Coppicing

A realistic management objective is that each tree produces a single log that is high-quality, straight, and 16 feet long. Cutting off young trees and allowing them to resprout from the root collar is called coppicing. This operation results in straighter, better formed stems. Coppiced stems will grow from 8 to 18 feet in the first year.

Pruning

Pruning is the practice

of removing buds and lateral branches to promote upward growth and better quality stems. Buds are removed before they grow into branches. Do this one or more times each year during the first four years or until the tree has a clear 16 to 20 - foot stem. Then allow the branches to develop naturally.

Pest Control

Paulownia trees experience relatively few pest problems under the growing conditions of the United States. However, trees sometimes are affected by insect, disease, and animal pests. Defoliating insects may cause minor damage, but Paulownia trees are not seriously damaged by insect attacks. Various leaf spots, mildews, twig cankers, and root and stem-decay fungi also attack Paulownia, but such problems are seldom severe. Control of all pests should follow standard procedures for other crops.

Thinning

Once the Paulownia trees have clear 16 to 20 feet stems, no further pruning or coppicing should be done. It is important that the trees grow slowly enough to produce high-quality, profitable logs. Diameter growth is influenced by tree density. If density is high, thinning may be necessary. Choose an appropriate density level and maintain it with periodic thinning. □

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