

# AG Biotech Laboratories (I) Ltd.



## **Tissue cultured Paulownia Plants**

# AG Biotech Laboratories (I) Ltd.

## Introduction



AG Biotech Laboratories is the realization of the dream of technocrat entrepreneurs to build a biotechnology company by leveraging their scientific temper and environmental consciousness to deliver technologically proven and qualitatively superior products and services in the areas of Plant Tissue Culture and Organic Farming.

# AG Biotech Laboratories (I) Ltd.

## Profile in a nutshell

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- Established in 1992 in as a Private Limited Company which turned Public in 1995
- Located in Hyderabad, India which is fast emerging as a biotechnology hub for R&D and production
- Rich and diversified experience over the last 33 years in producing tissue culture plants and organic farming
- Extensive and sophisticated infrastructure facilities including modern Plant Biotechnology Units, Green Houses, Satellite Hardening Centers, Bio-manure / Bio-fertilizers Production Unit, Botanicals extraction unit,, and a state-of-the-art R&D and Training Centre

# AG Biotech Laboratories (I) Ltd.

## Infrastructure

- **Modern Plant Biotechnology Unit:** A 30,000 Sft CL-10,000 sterile clean area, designed to produce 4.0 million plants of world-class quality, in a year.
- **Satellite Hardening Centers** A total covered area of over 200,000 square feet across major agro-climatic zones of India, for acclimatization of tissue culture plants.



# FLOW CHART – PLANT TISSUE CULTURE

## Selected Clones/Preparation of nutrient media

Apical meristem of donor/mother plant

Sterilization of explant

Inoculation in a nutrient media

Multiple shoots

Repeated multi shoot culture

Shooting media

Rooting media - Plantlets

Ex-agar plants  
(export market)

Acclimatization (green house)

Domestic market



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## Tissue culture products

### Fruit crops

Banana (all cultivars)  
Citrus  
Fig (*Ficus carica*)  
Dragon Fruit  
Strawberry  
Pine apple  
Blue berry  
Black berry

### Forestry plants

*Tectona grandis*  
*Paulownia* sps.  
*Gmelina arborea*  
*Acacia mangium*  
*Albizia odoratissima*

### Oil yielding plants

*Azadirachta indica*  
*Madhuca longifolia*  
*Pongamia pinnata*  
*Santalum album*  
*Aqualaria* sps

### Spices & Medicinal Plants

*Curcuma longa*  
*Gingiber officinalis*  
*Aloe barbadensis*  
*Vanilla planifolia*  
*Stevia rebaudiana*  
*Clinacanthus nutans*

# AG Bioteck Laboratories (I) Ltd.

## quality systems / accreditations

- 9001-2000 certified company
- Laboratory Certified by Department of Biotechnology, Ministry of Science & Technology, Government of India, under NSC-TCP
- First organization from India, received accreditation of export facilities for its tissue culture plants for ex- agar plants from AQIS, Department of Primary Industries and Energy, Government of Australia for high risk plants
- Recognized by Department of Horticulture, Govt. of A.P., Govt of CG.
- Utmost premium on the quality standards and processes from the Laboratory to the Green House to ensure impeccable quality of products



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## Core Competence

### Tissue Culture – Forestry species

Timber yielding trees:

AG Bioteck stands unique in the country, which identifies, develops protocols and produces tissue culture tropical hard wood species, including ***Paulownia***

India's first Paulownia tissue culture plants were raised in Andhra Pradesh and AG Bioteck was part of it.



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## Mother plant selection

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### Tissue culture Process

AG Bioteck is successful in identifying the “Plus Trees” with desirable characters in ***Paulownia*** and developed the tissue culture techniques for mass multiplication *in vitro*

# *In vitro* propagation/tissue culture

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## Hardening in Jiffybags



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## Hardening in Jiffybags



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## Paulownia- Laboratory to Green House for hardening



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## Hardening in polybags



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## Advantage – tissue culture Paulownia

- Tissue culture plants developed from single stem tissues, isolated from known established Plus Trees, with all desirable characters. Hence yield is at expected levels, thinning is not required.



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## Tissue cultured Paulownia field plantation



# AG Bioteck Laboratories (I) Ltd.

## Tissue cultured Paulownia field plantation



# AG Biotech Tissue culture Paulownia plants growing in the farmers field (6 months to 1 year old)



# AG Biotech Tissue culture Paulownia plants growing in Jiffy pots for export



# AG Biotech Tissue culture Paulownia plants growing in the farmers field (6 months old)



# AG Biotech Laboratories (I) Ltd.

## Industry – academia interactive programs

- Evolved into a knowledge hub and an R&D Centre for Scientists, Research scholars, resource personnel from NGOs and Financial Institutions
- Provides research facilities for students of Biotechnology students of many Universities, like Indian Institute of Technology Kharagpur, Biotech Consortium of India Limited, New Delhi, ANGR Agricultural University, Hyderabad, to name a few.
- Regularly conducts training programs in Biotechnology for International participants on behalf of AOTS, a Japan Government sponsored organization.



Thank You