

# Teaknet Bulletin

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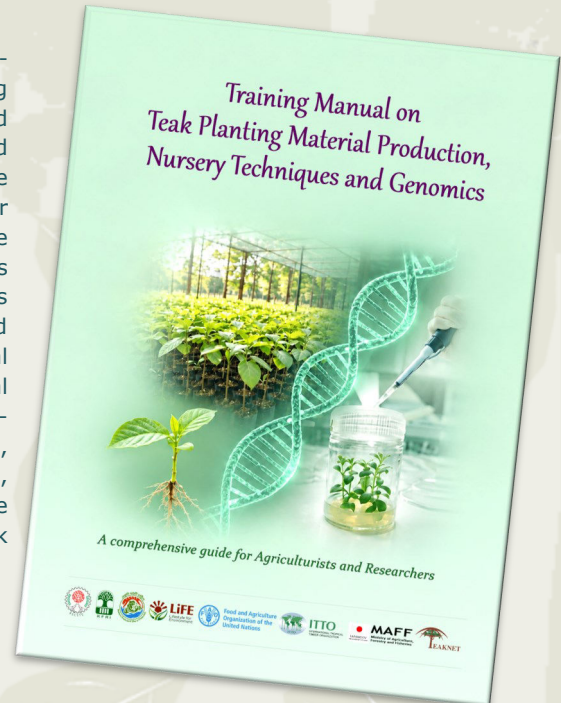
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## A Training Manual on Teak Planting Material Production, Nursery Techniques and Genomics

A Training Manual on Advanced Teak Planting Material Production and Genomics was published as a practical reference and hands-on guide for nursery managers, tissue culture lab technicians and researchers. It brings together standardized protocols and practical guidance on conventional propagation, tissue culture, nursery practices, DNA-based techniques, and genomics for the production of quality teak planting material.

You can download it [here](#)



## Editorial

The future of teak depends on the strength of our scientific knowledge and our collective commitment to sustainable management. As the global teak sector responds to emerging challenges in plantation productivity, genetic improvement, resource conservation, and sustainable timber utilization, bridging scientific advances with practical applications has become increasingly important. TEAKNET remains committed to bringing together researchers, growers, nursery managers, forestry professionals, industry representatives, and policymakers to address these priorities through international cooperation and knowledge exchange. Reflecting this commitment, the international training programme on Teak Planting Material Production, Nursery Techniques and Genomics, conducted at KSCSTE-Kerala Forest Research Institute (KFRI) in September 2026, provided valuable exposure to conventional propagation, genetic improvement, tissue culture, and genomic tools. The publication of the Training Manual on Teak Planting Material Production, Nursery Techniques and Genomics further strengthens these efforts by providing practical guidance for the production of quality teak planting material. In this issue, we present highlights of the training programme, information on upcoming regional and international forestry events, and updates on initiatives to support smallholders and community-based teak farming systems, improve timber quality, and promote sustainable wood utilization. We also feature the latest prices of plantation teak imported into India for the benefit of our readers. We invite TEAKNET members and stakeholders to share their experiences, research findings, news, and articles to enrich the TEAKNET Bulletin. Through your continued participation and collaboration, we can strengthen this global network and advance a shared vision of a productive, sustainable, and economically vibrant teak sector.

S. Sandeep  
TEAKNET Coordinator

# Report on International Training Programme on Teak Planting Material Production, Nursery Techniques and Genomics

22-25 September 2025  
KSCSTE– Kerala Forest Research Institute, Peechi, Kerala, India

International Training programme on  
Teak Planting Material Production,  
Nursery Techniques  
and Genomics

22- 25 September 2026  
KSCSTE-KFRI, Peechi, Thrissur, Kerala



## Introduction

An International Training Programme on Teak Planting Material Production and Genomics was conducted from 22 to 25 September 2026 at the KSCSTE–Kerala Forest Research Institute (KFRI), Peechi, Thrissur, Kerala, India. The programme was designed to provide participants with advanced knowledge and practical exposure to teak silviculture, conventional propagation, genetic improvement, plant tissue culture, genomics and bioinformatic tools relevant to the production and management of quality teak planting material.

The training brought together expertise from KSCSTE–KFRI and international expertise from YSG Biotech, Malaysia. The programme combined technical lectures with laboratory-based practical sessions and a field visit, thereby providing an integrated learning experience covering both conventional and advanced approaches to teak propagation and genetic resource management. The programme schedule included four days of activities, with the first three days devoted primarily to classroom and laboratory sessions and the fourth day to a field visit to KYGROS Agritech & Tropical Biosciences, Pala, Kottayam, Kerala.

## Objectives of the Training Programme

The training programme was structured to strengthen participants' knowledge and practical understanding of:

- ⇒ Silvicultural practices and conventional propagation methods in teak.
- ⇒ Nursery techniques for the production of quality teak planting material.
- ⇒ Seed grading, germination and stump planting.
- ⇒ Root trainer technologies for teak planting material production.
- ⇒ Selection of plus trees and approaches to genetic improvement.
- ⇒ Plant tissue culture technology for quality planting material production.
- ⇒ Application of genetic engineering and genome-editing tools in teak improvement.
- ⇒ Genomic tools relevant to teak conservation and sustainable management.
- ⇒ DNA extraction and molecular laboratory techniques.
- ⇒ PCR, gel electrophoresis and SSR genotyping.
- ⇒ Basic bioinformatic analysis and SSR allele scoring.
- ⇒ Use of bioinformatic tools such as BIOEDIT, CLUSTALX, MEGA and BLAST.
- ⇒ Exposure to practical applications through laboratory sessions and a field visit.

These components were arranged progressively, beginning with conventional teak propagation, moving into genetic improvement and tissue culture, and subsequently covering genomic tools and bioinformatics.

The training programme commenced on 22 September 2026 with formal inauguration by Dr. Kannan C. S. Warriar, Director, KSCSTE-KFRI. Following the inauguration, Dr. S. Sandeep, TEAKNET Coordinator, provided an introduction about TEAKNET. This session served as an important introductory component of the programme, placing the technical training within the broader context of TEAKNET's activities and its role in supporting sustainable teak resources and knowledge exchange.



Inaugural speech by Dr. Kannan CS Warriar (right) and introduction to TEAKNET by Dr. S. Sandeep (left)



Participants during the inaugural session

## Day 1 – Introduction to Teak and Conventional Propagation

The first day focused on the fundamentals of teak silviculture and conventional propagation, with particular emphasis on nursery-based production of planting material. The technical session was delivered by Dr. K. C. Chacko, Former Senior Principal Scientist, KSCSTE-KFRI. The session addressed silvicultural practices and conventional propagation in teak.

The session established the foundation for subsequent practical components by introducing conventional approaches to teak propagation and management. The theoretical session was followed by a practical session in the afternoon, providing participants with an opportunity to gain hands-on experience on conventional propagation by introducing participants to practical nursery operations associated with teak planting material production.



Practical session by Dr. KC Chacko



The final technical session of Day 1 was conducted by Dr. P. K. C. Pillai, Former Principal Scientist, KSCSTE-KFRI. He delivered a session on seed grading and germination, covering the selection, grading, and handling of quality teak seeds for successful nursery establishment. He demonstrated pre-sowing treatments and appropriate sowing methods to achieve uniform and healthy germination. The session also highlighted the importance of maintaining seed quality and adopting proper nursery practices to improve germination rates and ensure the production of vigorous and healthy teak planting material.



Dr. P. K. C. Pillai demonstrating the operation of a seed pre-treatment machine for scarification.

The first day sessions covered the topics on Seed Grading and Germination, Stump Planting and Root Trainer Technologies. The inclusion of these topics provided participants with exposure to important conventional methods used in teak planting material production.

## Day 2 – Genetic Improvement of Teak

The second day shifted the focus from conventional propagation to genetic improvement and advanced propagation technologies. The programme brought together expertise in plus-tree selection, plant tissue culture, genetic engineering and genome editing.

The first technical session was delivered by Dr. T. K. Hrideek, Principal Scientist, KSCSTE-KFRI. The session focused on plus tree selection and genetic improvement in teak. This topic introduced participants to the importance of identifying superior trees and the role of selection in teak genetic improvement programmes. Dr. Hrideek also elaborated on the different stages and criteria involved in the selection of plus trees, highlighting the important characteristics to be considered for identifying superior teak plus trees. He explained the techniques for inducing and developing epicormic shoots from teak stumps in a mist chamber and demonstrated how these shoots can be utilized as a source of quality clonal planting material. The session further introduced participants to the production of tissue culture plants from selected teak material, providing an overview of the propagation process and its application in producing genetically superior and uniform planting material.



Dr. T.K. Hrideek during the Session

Dr. Doreen Goh, Managing Director, YSG Biotech, Sabah, Malaysia, delivered a comprehensive session on plant tissue culture and micropropagation of teak, covering the fundamental principles of plant tissue



culture and explaining why teak is particularly suitable for tissue culture-based propagation. She presented the micropropagation protocol, along with essential laboratory and nursery procedures involved in the production and establishment of tissue-culture teak plants.

The session also addressed the commercial challenges associated with tissue-culture teak production and possible approaches to overcome them. Dr. Doreen discussed the importance of field validation of tissue-cultured teak, highlighting its role in assessing plant performance under field conditions.

She further explained the broader applications of tissue culture technology in forestry, particularly its potential for large-scale production of quality planting material. The session concluded with key take-home lessons, emphasizing the importance of maintaining appropriate laboratory and nursery practices, ensuring quality control throughout the micropropagation process, and undertaking proper field evaluation before large-scale deployment of tissue-cultured teak planting material.

The subsequent session, was delivered by Dr. Donald James, Scientist, KSCSTE-KFRI. The session addressed genetic improvement in teak using genetic engineering and genome-editing tools. This component expanded the scope of the programme from conventional genetic improvement approaches to contemporary molecular and biotechnology-based tools.

The afternoon session was dedicated to practical training in plant tissue culture for quality planting material (QPM) production. The session provided participants with hands-on exposure to the basic techniques and procedures involved in tissue culture-based propagation of teak. Dr. Donald demonstrated key laboratory practices and explained the different stages involved in the establishment and multiplication of plant material under controlled conditions.

The extended practical component provided participants with an opportunity to engage directly with tissue culture techniques, laboratory procedures, and plant material handling relevant to the production of quality planting material. Participants were able to observe the practical application of the concepts covered during the theoretical sessions and gain a better understanding of the care, precision, and aseptic practices required for successful tissue culture propagation. The hands-on session helped bridge the gap between theory and practice and strengthened participants' understanding of tissue culture as a tool for the large-scale production of quality teak planting material.



Practical Training in Plant Tissue Culture

### **Day 3 – Genomic Tools for Conservation and Sustainable Management of Teak**

The third day focused on the application of genomic and molecular tools for teak conservation and sustainable management. The day combined a technical lecture with a series of laboratory exercises covering DNA extraction, PCR, SSR genotyping and bioinformatics.

Dr. Suma Arun Dev, Senior Principal Scientist, KSCSTE-KFRI, delivered the opening lecture in the morning session on genomic tools in teak for conservation and sustainable management. The session provided the conceptual foundation for the molecular and genomic practical exercises that followed.

Following the theoretical lecture, Dr. Suma Arun Dev conducted a laboratory session on genomic DNA extraction. The practical session introduced participants to the preparation of DNA for subsequent molecular analyses and genomic applications.

A further laboratory session was provided hands on training in

- Polymerase Chain Reaction (PCR);
- Gel electrophoresis; and
- SSR genotyping.

These techniques represent important molecular approaches for generating and analysing genetic information in teak.

The afternoon laboratory session, introduced participants to basic bioinformatic analysis and SSR allele scoring. The programme specifically identified the use of BIOEDIT, CLUSTALX, MEGA and BLAST, among other tools. This component complemented the laboratory-based molecular techniques by introducing participants to computational approaches for processing and analysing genetic data.



### Valedictory Function and Certificate Distribution

The technical component of the three-day classroom and laboratory training concluded with a valedictory function and certificate distribution on 24 September 2026. Mr. Kenichi Shono, Forestry Officer, FAO, addressed the participants through video conference during the valedictory function. In his remarks, he highlighted the significance of the training programme and its contribution to strengthening technical knowledge and capacity in teak planting material production and genomics.



Dr. Kannan C S Warriar, Director, KSCSTE-KFRI during the Certificate distribution



Mr. Kenichi Shono during the Valedictory Function



Participants of the Training Programme

Continued from page 7

#### Day 4 – Field Visit

The fourth day, 25 September 2026, was dedicated for a field visit to KYGROS Agritech & Tropical Biosciences, Pala, Kottayam, Kerala, India. KYGROS Agritech & Tropical Biosciences is engaged in the production and supply of quality planting materials. They are also been associated with tissue-culture-based teak production. ICFRE–Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore, signed an MoU with the organization for the large-scale production and supply of three teak clones, reflecting its expanding role in the application of micropropagation technology to forestry.

The field component was designed as a complementary practical exposure following the classroom and laboratory sessions. It provided an opportunity for participants to relate the concepts covered during the training to an operational setting involving agricultural and tropical bioscience activities.



Laboratory visit at KYGROS Agritech & Tropical Biosciences, Pala, Kottayam  
(Photo Courtesy: Naresh Baskar, Cauvery Calling - Isha Outreach, Coimbatore, India)

#### Conclusion

The Advanced Training Programme on Teak Planting Material Production and Genomics, held from 22–25 September 2026 at KSCSTE–KFRI, Peechi, was structured as an integrated technical programme covering conventional propagation, nursery management, genetic improvement, plant tissue culture, genetic engineering, genome editing, genomics, molecular techniques and bioinformatics.

The first three days combined expert-led lectures with practical laboratory sessions, while the final day provided field exposure through a visit to KYGROS Agritech & Tropical Biosciences. The programme brought together expertise from KSCSTE–KFRI as well as international expert from YSG Biotech, Malaysia, thereby providing a multidisciplinary platform for advancing knowledge on teak planting material production and genetic resource management.

## Upcoming Events

### 2<sup>nd</sup> Regional Workshop on Microfinancing Support for Smallholders and Community-Based Teak Farming Systems

Yogyakarta, Indonesia  
14-16 October 2026

The Ministry of Forestry, Indonesia, ITTO, Japan and Kasetsart University, Bangkok, Thailand is jointly organising the second Regional Workshop on *"Microfinancing support for smallholders and community-based teak farming systems in the tropics towards high quality timber production"* during 14-16 October 2026 at Hotel Grand Zuri, Yogyakarta in collaboration with the six participating countries in the Asia-Pacific and Togo in West Africa. The Regional Workshop is being organised back-to-back with the 3<sup>rd</sup> PSC meeting of the second phase of an ITTO-BMLEH Project (PP-A/54-331A) aiming to support policies and strategic goals that promote the sustainable management of teak resources and plantation efforts on public and private land.

This workshop focuses on the planning and implementation of research and development activities of good quality timber production along with enhanced value chain processes in the wood industry and promoting carbon-supported plantation development.

The participation is by invitation only



## IUFRO All Division 5 Conference 2027

Estonia  
May 30– June 3 , 2026

TEAKNET, in partnership with the IUFRO Teakwood Working Party (Div. 5.06.02) and the Research Group on Plantation Woods (Div. 5.06.00), is organizing the Side Event titled *"Processing and Efficient Utilisation of Plantation Timbers for Legal Supply Chains and Sustainable Wood Use."*

Researchers, professionals and other interested participants are invited to submit abstracts for consideration under this session. The deadline for abstract submission is 26 October 2026.

Kindly visit the IUFRO Division 5 Conference website and select the above session title when submitting your abstract online:



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## Prices of Plantation Teak Imported to India

Prices for recent shipments of plantation teak logs and sawnwood imported to India

| Teak Logs   | US\$ C&F |
|-------------|----------|
| Brazil      | 558      |
| Colombia    | 505      |
| Costa Rica  | 405      |
| Tanzania    | 515      |
| South Sudan | 720      |
| Guatemala   | 430      |

| Sawnwood    | US\$ C&F |
|-------------|----------|
| Benin       | 688      |
| Brazil      | 695      |
| Costa Rica  | 575      |
| Ghana       | 460      |
| Ivory Coast | 820      |
| Nigeria     | 470      |
| South Sudan | 645      |
| Togo        | 545      |
| Panama      | 540      |

Price range depends mainly on length and cross-sections

*Courtesy: ITTO TTM Report 30:18 16-30*

### Editorial Committee

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