

# Eucalyptus & Poplar Clonal Growth Chambers & Planting Accessories

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with our Green Houses"



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**For over 20 years, a leading company in the production of Smart Farming systems**



## Production Flow Chart

STEP 1: SELECTION OF SUPERIOR CLONAL MOTHER TREES



STEP 2: COLLECTION OF CUTTINGS  
(FROM COPPICED SHOOTS OR HEDGES)



STEP 3: PREPARATION OF CUTTINGS

- TRIM TO 8-10 CM LENGTH
- ENSURE 2-3 HEALTHY LEAVES
- TREAT BASE WITH ROOTING HORMONE (IBA/NAA)



STEP 4: PLANTING IN ROOTING MEDIUM

- USE TRAYS WITH COCOPEAT OR VERMICULITE
- MAINTAIN HIGH HUMIDITY (MIST CHAMBER OR FOG SYSTEM)
- TEMP: 25-30°C, RH: 85-95%



STEP 5: ROOTING PHASE (2-4 WEEKS)

- MONITOR FOR CALLUSING AND ROOT FORMATION
- REMOVE DEAD/DISEASED CUTTINGS



STEP 6: HARDENING PHASE I (PRIMARY HARDENING)

- SHIFT ROOTED CUTTINGS TO SHADED AREA
- GRADUALLY REDUCE HUMIDITY
- APPLY LIGHT FERTILIZER



STEP 7: HARDENING PHASE II (SECONDARY HARDENING)

- TRANSFER TO POLYBAGS OR LARGER TRAYS
- GROW UNDER SHADE NET FOR 3-4 WEEKS
- ACCLIMATIZE TO OUTDOOR CONDITIONS



STEP 8: FIELD READINESS & DISPATCH

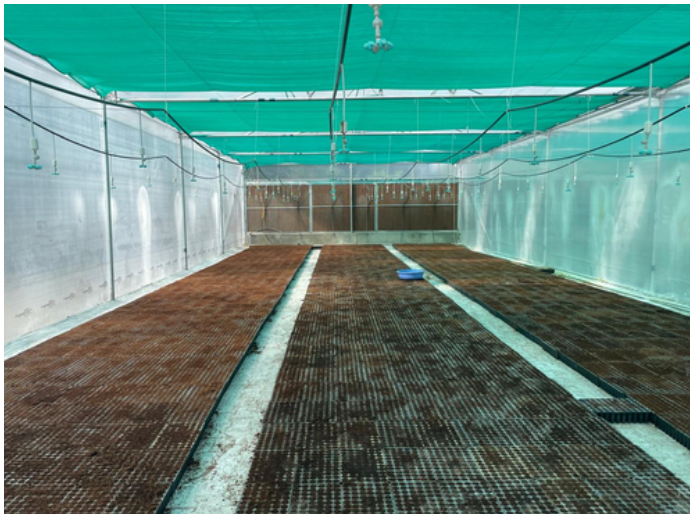
- SELECT ONLY HEALTHY, WELL-ROOTED CLONES
- MAINTAIN RECORDS OF CLONE ID, BATCH, DATE
- DISPATCH TO PLANTING SITE OR FOREST BLOCKS



## Clonal Growth Chamber



BLUSTAL growth chamber in eucalyptus clonal production is a controlled environment unit designed to facilitate successful rooting of stem cuttings. It provides optimal temperature, humidity, and light conditions that enhance root induction and promote uniform plant development. Customise sizes are available as per production capacity required.










# Clonal Growth Chamber

## 🌱 Key Facilities of BLUSTAL Eucalyptus Clonal Growth Chamber

### 1. Structure

- Polycarbonate/polyfilm cladding or glass walls (for insulation and light diffusion)
- Modular mist chamber or fogging unit inside
- Double-door entry (airlock) to reduce contamination
- Benches or racks to hold trays (preferably tiered for space use)

### 2. Environmental Control Systems

Parameter	Ideal Range	Control System
 <b>Temperature</b>	25–30°C (Day), 20–25°C (Night)	HVAC or split AC units
 <b>Humidity</b>	85%–95% RH	Ultrasonic foggers/misters
 <b>Light</b>	1500–3000 lux	LED grow lights (12–16 hr/day)
 <b>Air Circulation</b>	Moderate airflow	Fans + exhaust
 <b>Automation</b>	Timed misting + lighting	PLC/Timer-controlled panel

### 3. Rooting Support Infrastructure

- Fogging/Mist systems:
  - High-pressure fog nozzles
  - Timed mist cycles (e.g. 5 sec every 15 mins)
- Rooting trays:
  - 60–98 cavity trays with cocopeat plugs
  - Designed for drainage and aeration

### 4. Watering & Drainage

- RO/clean water source
- Fertilizer injector (venturi system) if nutrients are added
- Drainage slope and outlet to remove excess misting water





## 5. Monitoring & Safety

- Digital sensors for:
  - Temp, RH, CO<sub>2</sub> (optional)
  - Soil moisture (optional)
- Alarms for power/mist failure
- Backup generator or UPS for critical systems



## 6. Sanitation & Hygiene

- Footbath trays with disinfectant
- Regular sterilization protocol (e.g. hydrogen peroxide fogging)
- Pest mesh or sticky traps inside chamber

## 7. Recordkeeping & Management

- Batch labeling system
- Rooting success % tracking
- QR/barcode tracking (optional)

## ✓ Optional Upgrades

- Remote monitoring via IoT
- Automated fertigation
- Solar backup or hybrid power system



Component	Purpose
Mist/Fog system	Rooting stimulation
Light/Temp control	Photosynthesis + metabolic activity
High RH	Prevents desiccation
Drainage + Sanitation	Hygiene and root health
Automation	Precision and consistency

## Why It's Essential

- In the early stages of clonal propagation, cuttings lack roots and are highly sensitive to desiccation and environmental stress.
- A growth chamber ensures high rooting percentage, faster callusing, and lower mortality rates.



## HARDENING CHAMBER



BLUSTAL hardening chamber is a critical unit in eucalyptus clonal production used to gradually acclimatize rooted cuttings (clones) to ambient environmental conditions after successful rooting in the mist chamber. This process strengthens plant tissues, promotes root development, and prepares the clones for field conditions.

### Why Hardening is Important

- Rooted cuttings from the mist chamber are delicate and accustomed to high humidity and controlled conditions.
- If directly exposed to outdoor environments, they may suffer shock, wilting, or mortality.
- The hardening chamber provides a transition phase, increasing survival and field performance.

### Key Components of the Hardening Chamber

#### ComponentDescription

Structure: Shade house or net house with partial weather protection (UV-stabilized shade nets or insect-proof netting)

Shade Nets : Typically 35%–50% shade to filter intense sunlight

Benching or Flooring : Raised benches or ground beds with good drainage

Foggers/Sprayers :Optional light misting or overhead spray system to avoid water stress

Ventilation :Open sides or fans for air circulation and temperature regulation

Drainage: Well-sloped floor or gravel layer to avoid waterlogging



## ROOT TRAINERS

BRT-12300



VOL - 300  
Ø 58mm □ 140mm

BRT-12250



VOL - 250  
Ø 68mm □ 100mm

BRT-12150



VOL - 150  
Ø 50mm □ 100mm

BRT-20150



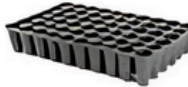
VOL - 150  
Ø 50mm □ 100mm

BRT-4093



VOL - 93  
Ø 40mm □ 95mm

BRT-6060



VOL - 60  
Ø 35mm □ 85mm

BRT-1500



VOL - 500  
Ø 70mm □ 220mm

BRT-1300



VOL - 300  
Ø 68mm □ 145mm

BRT-1150



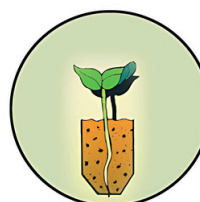
VOL - 150  
Ø 50mm □ 100mm

BRT-1100

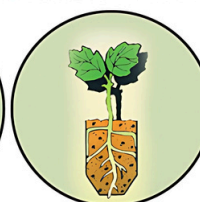


VOL - 100  
Ø 40mm □ 95mm

## The Secret of Roottrainers



The main root grows straight down the grooved cell towards the large drainage opening at the bottom



The root tip makes contact with the air and dies off



The plant then compensates by producing new root growth, with no root balls







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