



GOVERNMENT OF TELANGANA
DEPARTMENT OF HORTICULTURE

OPEN TENDER NOTICE

For

Invites Tenders from reputed firms / companies (who have already supplied to the existing Centre of Excellence in India) for procurement of Semi-Automatic Grafting Machine / Robot, Professional Japanese type Healing Chamber System, Grafting Tubes & Polymer Grafting Clips. Description, specifications and tender application details are available in website www.horticulture.tg.nic.in. The application is to be submitted **from 20.03.2026 to 30.03.2026 by 04:00 P.M.** Opening of applications will be on **30.03.2026 at 05:00 P.M** at O/o Directorate of Horticulture, Public Gardens, Nampally, Hyderabad – 500004, Telangana.

Website: <https://horticulture.tg.nic.in>

Contact: 8977714507, 8977714511, 8977714487

E-MAIL: farms-horti@telangana.gov.in

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TENDER SCHEDULE DETAILS

Tender calling date	19.03.2026
Tender application fee (Non-refundable)	Rs.25,000/- by way of Demand Draft drawn in favour of Secretary, SHN, payable at Hyderabad.
Earnest Money Deposit (EMD) (Refundable)	Rs.2,50,000/- by way of Demand Draft drawn in favour of Secretary, SHN, payable at Hyderabad.
Tender Application Start Date	20.03.2026 , from 11:00AM
Tender Application Closing Date	30.03.2026 , by 4:00 PM
Opening of Tenders	30.03.2026 , at 5:00 PM in the O/o. Director of Horticulture, Hyderabad, Telangana,
Contact person	Joint Director of Horticulture (Farms & CoEs, O/o. DoH, TG, Hyd.) 8977714507
Reference No	HD/CoEs/MLG/06/2024-25, dt: 18.03.2026
Website	<u>https://horticulture.tg.nic.in</u>

(APPLICATION FORM)

Date :

To
The Director of Horticulture / Secretary, SHN,
Public Gardens, Nampally,
Telangana, Hyderabad.
E-mail: farms-horti@telangana.gov.in

Dear Madam,

Sub: Tender for Semi-Automatic Grafting Machine / Robot, Professional Japanese type Healing Chamber System, Grafting Tubes & Polymer Grafting Clips at CoE, Jeedimetla, Medchal Malkajgiri District and at CoE, Mulugu, Siddipet District – Reg.

Name and details of Applicant and its representative authorized to file:	
Full Name	
Designation	
Name of Organization	
GST No.	
PAN No.	
Address	
Phone No.	
Fax	
Mobile	
Email	
Website	

Current nature of work:

(Not exceeding four lines)

Last 3 (three) year's Turnover of the Applicant

FY 2022-23 :

FY 2023-24 :

FY 2024-25 :

Net Worth of the Applicant

(Computed from the latest Audited Balance Sheet)

2024-25:

Application fee (to be enclosed)

in Rs.

in words.

Drawee Bank

Demand Draft No.

Date:

Note: Clearly indicate item of works

EMD (to be enclosed)

in Rs.

in words.

Drawee Bank

Demand Draft No.

Date:

Note: Clearly indicate item of works

Note:

- a) Applicants shall attach copies experience certificates, GST/ Pan Card /IT returns / Audited Balance Sheets etc., which ever applicable.
- b) The participants are requested to submit the application in separate sealed cover.

I/We declare that the information stated herein above is accurate.

Signature:

Full Name:

Organization:

Address:

Office Seal:

Date:

TERMS AND CONDITIONS

- 1) The Application for the Open tenders should reach in between **20.03.2026 to 30.03.2026 by 04:00 P.M. in the Farms & CoEs section, O/o Director of Horticulture, Hyderabad, Telangana.**
- 2) Application fee **Rs.25,000/- (Non-refundable)** has to be paid in the form of **DD** in favour of **Secretary, Society for Horticulture Nurseries (SHN).**
- 3) EMD of **Rs.2,50,000/- (Refundable)** has to be paid in the form of **DD** in favour of **Secretary, Society for Horticulture Nurseries (SHN).**
- 4) Tenders without E.M.D shall be summarily rejected.
- 5) The EMD of the successful bidder shall be retained and refunded only after satisfactory completion of work.
- 6) The E.M.D of unsuccessful bidder shall be refunded after finalization of the tender by the successful bidder / bidders.
- 7) Applications duly signed shall only be considered. Incomplete tender applications shall be summarily rejected.
- 8) The tenderer should sign on each paper and affix the seal.
- 9) Tender application of any individual is not transferable.
- 10) Successful firm shall not assign or transfer his contract or any part of it to any other agency.
- 11) Firms / Individuals / Agencies having a minimum (3) years experience are eligible for participation.
- 12) Invitation of tenders shall not confer any right to the tenderers to insist for work orders.
- 13) After opening of the bid offer, if it is found that the highest rate quoted is not satisfactory and not acceptable, the Department shall have the right to call for negotiations and fix up the rates of all above mentioned items, within the terms and conditions of tender.
- 14) It would be deemed that the bidder have made a complete and careful study of this tender document. Any violation of the above terms and conditions will be seriously dealt with.
- 15) The Department is not responsible for the loss /theft damages due to any calamities.
- 16) The Department of Horticulture shall have the right to terminate the tender by giving (30) days notice in violation of any prescribed conditions and non-performance.
- 17) All the successful bidders should supply the material within time frame given in the work order.

- 18) On placement and acceptance of purchase order, if the supplier does not perform his obligation as per the order, such supplier will be black listed and Department of Horticulture reserves all rights to make alternative arrangements to procure them from any short listed source and the difference of cost paid, if any will be recovered from the defaulting supplier through appropriate action.
- 19) In the event of any supplies /material failing to confirm to the specifications of quality parameters, The Director of Horticulture have the right to reject them out rightly and the payment to the stocks liquidated shall be with held.
- 20) The quantity notified is only tentative and may increase or decrease as per the requirement.
- 21) The Director of Horticulture or his/her nominee reserves the right to accept, reject or cancel the tenders at any time without assigning any reasons thereof.
- 22) All disputes and differences that arise are subject to the Jurisdiction of the Courts at Hyderabad only.
- 23) The decision of the Director of Horticulture will be final and bidding to accept, reject and cancel the tender no further correspondence will be entertained.

I have read and understood all the terms and conditions laid down in the Tender document and abide to them.

Signature:

Designation:

Full Name of Firm/Individual/Agency:

Organization:

Address:

Office Seal:

Date:

FINANCIAL BID

- A) Semi-Automatic Vegetable Grafting Machine / Robot,
- B) Professional Japanese type Healing Chamber System,
- C) Grafting Tubes & Polymer Grafting Clips

At

Center of Excellence, Jeedimetla, Medchal Malkajigiri District,
Telangana

and

Center of Excellence, Mulugu, Siddipet District, Telangana

Name of the Firm / Agency: _____

To be quoted by the firm in Rupees

S. No.	Name of the CoE	Proposed Machinery	Quantity (in Nos.)	Rate per Unit	Total amount
1	CoE, Jeedimetla	Semi – Automatic Vegetable Grafting machine / Robot	1 No.		
2		Professional Japanese Type Healing Chamber System	1 No.		
3		Collagen based plant absorbed vegetable grafting tube & Polymer Grafting Clips	4,50,000 Nos.		
5	CoE, Mulugu	Semi – Automatic Vegetable Grafting machine / Robot	1 No.		
6		Professional Japanese Type Healing Chamber System	1 No.		
7		Collagen based plant absorbed vegetable grafting tube & Polymer Grafting Clips	4,50,000 Nos.		

Note:

- 1) The rate quoted should be inclusive of transportation to the site, loading Un loading charges, including of taxes if any GST, Service Tax etc.,. The I.T. Deduction shall be applicable as per rule.
- 2) The Warranty of the components shall be 1 year.
- 3) The technical specifications given must be duly followed during the work

SPECIFICATIONS

SEMI-AUTOMATIC GRAFTING MACHINE / ROBOT

Japanese-Type Design Specification

1. Rationale

Fully automated grafting lines (e.g., systems similar to those used by commercial nurseries such as operations seen in Morning Star, California) involve:

- Complete tray handling automation
- Conveyor integration
- Automatic cutting and clipping

- Extremely high capital cost (\geq USD 2 million)
- Manual grading still required
- Not suitable for tropical/subtropical variability
- Limited capability in cucurbit grafting
- Survival rates not significantly superior to semi-automatic systems

For Indian subcontinent conditions, semi-automatic systems are technically and economically optimal.

2. Core Functional Requirements

The semi-automatic Japanese-type grafting machine must perform:

1. Precise cutting of rootstock seedlings
2. Precise cutting of scion seedlings
3. Cutting grafting clip from continuous roll
4. Opening and positioning clip for seedling insertion
5. Precision 45° cutting of rootstock and scion seedlings.
6. Automatic cutting of ~1.2 cm grafting clips from continuous roll.
7. Sensor-based clip opening and positioning for manual insertion.
8. Synchronized operation for continuous and efficient grafting cycles.

3. Rootstock Cutting Mechanism

- Precise 45° angle cut
- Consistent cut depth and surface smoothness
- Minimal tissue crushing
- Uniform alignment for vascular contact

Precision at this stage determines union success.

4. Scion Cutting Mechanism

- Exact 45° “saimese” style cut
- Mirror alignment with rootstock
- Clean, burr-free surface
- Optimal contact area for callus formation

Uniform cut geometry is critical for rapid vascular reconnection.

5. Automatic Clip Cutting System

Machine must:

- Sense completion of rootstock and scion cuts

- Use pressure sensor activation
- Automatically cut 1.2 cm grafting clip from roll
- Synchronize with seedling preparation stage
- Uniform, smooth cuts with minimal tissue damage.
- Adjustable guides to accommodate varying stem diameters.
- Automatic clip feeding, opening, and reset after each graft.
- Accurate alignment ensuring proper vascular contact and union success.

6. Clip Opening Mechanism

After clip cutting:

- Sensor-triggered opening mechanism
- Clip held in ready-open position
- Operator inserts aligned seedlings
- Upon removal of grafted seedling:
- Machine pulls next 1.2 cm clip segment
- Resets automatically and ensures production continuity.

7. Operational Benefits

Semi-automatic systems provide:

- Higher survival rates
- Reduced labour dependency
- Increased throughput
- Lower capital investment
- Better adaptability to variable seedling uniformity
- Manual pre-grading before grafting remains essential.

8. Performance, Safety & Build Standards

- High throughput with consistent graft success rates.
- Adaptable to non-uniform seedlings common in Indian nurseries.
- Ergonomic design with low power consumption.
- Safety guards, emergency stop, and corrosion-resistant construction.

9. Training and Support

- On-site training and user manuals for operators.
- Minimum 1-year warranty and assured spare parts availability.
- To provide hands on training or a skilled supervisor to train the staff for atleast 6 months

SPECIFICATIONS

PROFESSIONAL JAPANESE-TYPE HEALING CHAMBER SYSTEM

1. Chamber Structure & Panel Material

- Panels made exclusively from **ABS plastic sheets** suitable for 90–95% RH continuous operation.
- Non-porous, non-hygroscopic, corrosion-resistant, and antimicrobial surface.
- Smooth internal finish for easy sanitization and prevention of bacterial/fungal growth.
- Designed for 24x7 operation under ultra-high humidity without structural degradation.

2. Insulation & Environmental Stability

- Closed-cell **PUF insulation** with high thermal resistance (high R-value).
- Moisture-resistant, non-absorbent, and condensation-resistant panel design.
- Maintains stable internal temperature despite external fluctuations which is essential for callus formation during the first 3–5 days post-grafting.

3. Environmental Control & Dual-Zone Operation

- Uniform humidity and temperature distribution across all tray levels.
- Dual-zone programmable control for healing protocols:
 - **Zone 1 (Day 0–5):** Very high humidity, moderate temperature.
 - **Zone 2 (Day 5–6 onward):** Gradual humidity reduction and slight temperature increase for hardening.
- Independent settings for solanaceous and cucurbit crops.
- Temperature control accuracy within $\pm 3\%$ of set value using PID-based systems.

4. Airflow & Air Exchange System

- Ultra-low velocity, laminar airflow to prevent seedling stress.
- Uniform air mixing to avoid microclimates and hot/cold spots.
- Controlled fresh air exchange with gradual CO₂ replenishment.
- No sudden humidity drops during air exchange; prevents damping-off and microbial growth.

5. Performance Requirements

- Capability to run complete healing protocols for solanaceous and cucurbit grafts simultaneously.
- Environmental controls: humidity, temperature, and light intensity zones.

SPECIFICATIONS

GRAFTING TUBES & POLYMER GRAFTING CLIPS

1. Product Overview & Purpose

- **Biodegradable collagen grafting tubes** and **polymer grafting clips** for high-throughput manual and semi-automatic vegetable grafting.

2. Collagen Grafting Tubes – Material & Composition

- Fully biodegradable with 2.3, 2.4, 2.5, 3 mm size
- Enriched with micronutrients
- Non-toxic and safe for plant tissue absorption.

3. Functional Performance Requirements

- Seals graft wound and prevents microbial infection.
- Protects graft union for up to **40 days**.
- Prevents early soil-contact contamination.
- Supports rapid callus formation and improved graft survival rates.

4. Polymer Grafting Clips – Specifications

- Durable polymer clips supplied in **continuous roll format**.
- Compatible with semi-automatic grafting machines.
- Automatic feeding and cutting in ~1.2 cm segments.
- Provides firm alignment and support during healing.
- Suitable for tomato, brinjal, hot pepper, capsicum, and cucurbits.
- Must be manually removed after healing and hardening, prior to dispatch.

5. Integration & Expected Outcomes

- Compatible with semi-automatic grafting machines and dual-zone healing chambers.

CHECK LIST

Sl. No.	Particulars	YES/NO
1	EMD	
2	EXPERIENCE CERTIFICATE IN SUPPLY OF IMPORT MACHINES IN GOVERNMENT / PRIVATE INSTITUTES FOR LAST (3) YEARS i.e. 2022-23, 2023-24 & 2024-25. (RELEVANT DOCUMENTS SHOULD BE FURNISHED)	
3	PAN CARD XEROX	
4	IT RETURNS FOR 3 YEARS i.e. FROM 2022-23, 2023-24 & 2024-25. (RELEVANT DOCUMENTS SHOULD BE FURNISHED)	
5	TURN OVER DURING LAST 3 YEARS (RELEVANT DOCUMENTS SHOULD BE FURNISHED)	
6	SIGNATURE ON EACH PAGE OF TENDER DOCUMENT	
7	ORIGINAL TENDER SCHEDULE	
8	AUTHORISED DISTRIBUTOR / DEALERSHIP OF EACH COMPONENT FOR IMPORT MACHINES	