

**Directorate Research Services
Rajmata VijayrajeScindia Krishi Vishwa Vidyalaya,
Gwalior, 474002, M.P.**

IPRO/DRS/2024-25/2783

Dated 31.12.2024

E-TENDER NOTICE

Offers are invited for the supply and installation of the Complete Speed Breeding Unit at "RAK College of Agriculture, Sehore" from manufacturers/ authorized dealers/ distributors through e-tendering. Tender forms along with specifications and other details can be purchased online from the website www.mptenders.gov.in during 01-01-2025, 04.00 PM to 22-01- 2025, upto 5:00 PM. Information is also available on www.rvskvv.net. Last date for filling of e-Tender on-line 22.01.2025 up to 5:00 PM, hardcopy of the complete set of e-tender technical documents on or before 23.01.2025 by 03:00 PM at Office of Directorate of Research Services, RVSKVV, Gwalior. Opening of Technical Bid: 29.01.2025, at 3.00 pm and Financial Bid: 30.01.2025, at 3.00 PM at Directorate, Research Services, RVSKVV, Gwalior.

(Tender I.D. No.: 2024_RVSKV_392106_1)


Director Research Services
RVSKVV, Gwalior

**DIRECTORATE OF RESEARCH SERVICES
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA**

GWALIOR- 474002, M.P.

IPRO/DRS/2283/2024-25/

Dated 31-12-2024

e-TENDER NOTICE

Online tender(s) under two bid system (i) Technical bids (ii) Financial bids are invited by the Director Research Services, RVSKVV, Gwalior, from reputed Manufacturers/ Authorized Dealers/Distributors in the line for supply and installation of scientific equipment(s)/item(s)/structures for the item **Complete Speed Breeding Unit** in project "Speed Breeding Rapid Generation Advancement and Variety Development in Chickpea" as described below:

Sl. No.	Name of item	Unit/ Reg. Station	Amount of EMD (Rs)	Tender publication fees (Rs)
1.	Complete Speed Breeding Unit	RAK College of Agriculture, Sehore (M.P.)	1,20,000	12,500

CRITICAL DATES

S. No.	Item	Date	Time (hrs)
1.	Publishing Date	01.01.2025	16:00
2.	Document Purchase Start Date	01.01.2025	16:00
3.	Last date for submission of technical e-Bid (Online)	22.01.2025	17:00
4.	Opening of the Technical e Bid at Office of Directorate Research Services, RVSKVV, Gwalior	23.01.2025	15:00
5.	Evaluation of Technical e Bids at Office of Directorate, Research Services, RVSKVV, Gwalior	29.01.2025	15:00
6.	Opening of Financial/Price e Bid at Office of Directorate Research Services, RVSKVV, Gwalior	30.01.2025	15:00

Tender form can be downloaded from the website www.mptenders.gov.in and can also be seen on university website www.rvskvv.net. Tender documents with specifications can be purchased from this site by paying ₹12500 + Portal charge.

Also submit the hardcopy of the complete set of e-tender technical documents on or before 23.01.2025 by 15:00 hrs.


**Director Research Services
RVSKVV, Gwalior**

**DIRECTORATE OF RESEARCH SERVICES
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA**

GWALIOR, 474002, M.P.

I PRO/DRS/2024-25/2283

Dated 31-12-2024

e-TENDER INVITING NOTICE

Online tender(s) under two bid system (i) Technical bids (ii) Financial bids are invited by the Director Research Services, RVSKVV, Gwalior from reputed Manufacturers/ Authorized Dealers/Distributors in the line for supply and installation of scientific equipment(s)/item(s)/structures for the item **Complete Speed Breeding Unit** in project "Speed Breeding Rapid Generation Advancement and Variety Development in Chickpea" on or before **22.01.2025** up to 05:00 PM *via e tender*. **The hardcopy of the same has to be submitted to the undersigned on or before 23.01.2025 up to 03:00 PM. For the list of items, tender forms, terms & conditions and detailed information please visit RVSKVV website www.rvskvv.net and for purchase of tenders www.mptenders.gov.in from 01.01.2024.**

Any related corrigendum, if required, will be published on RVSKVV website (www.rvskvv.net) and www.mptenders.gov.in only.

NAME OF ITEM: 01. Complete Speed Breeding Unit

Date:


**Director Research Services
RVSKVV, Gwalior**

DIRECTORATE OF RESEARCH SERVICES
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA GWALIOR-
474002, M.P.

E-Tender Document

CRITICAL DATES

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DEPOSITING THE BIDS:

The bids will be submitted through on-line mode of www.mptenders.gov.in. Details are as follows:

On-line Submission:

(i) **Cover-I:** Will contain the Technical Bids with the following documents:

- Detailed technical write-up highlighting the model Name/Number features offered and / or technical literature/manuals.
- Certificate for acceptance of terms and conditions of tender enquiry on firms' letterhead.
- Original Equipment Manufacturer (OEM) certificate or authorized dealership/distributorship certificate as applicable.
- Manufacturing Registration No.
- Company Printed Price List (If available)
- Last 3 (three) years Income Tax Return.
- Audited Balance Sheet for Last 3 (Three) years.
- TIN number/PAN Number/Certificate/GST number
- Business Registration Certificate.
- Scanned Copy of EMD as shown against each item.
- Compliance Certificate. Certificate of clause-by-clause compliance of specifications as mentioned in tender.

***One set of the same has to be submitted in hardcopy also.**

GENERAL TERMS AND CONDITIONS:

1. *Only the manufactures and/or their authorized dealer/distributors/sole agents/ need to submit their tender.
2. No person or firm shall submit more than one Tender for the same item. No offer should have more than one model quoted; in case of more than one alternate offer only the first option will be considered.
3. It is mandatory to provide all the relevant information in *Annexure -I*.
4. Broad-based specifications of equipment/items/systems/works *etc.* are given in *Annexure- II* of purchased tender. The tenderer should also take note of the remarks, if any, given their in.
5. a. Last date for submission of e-Tender is 22.01.2025 up to 17:00 hrs on www.mptenders.gov.in. Last date for submission of hardcopy of tender document is 23.01.2025 upto 15:00 hrs.
b. Belated tender due to postal or any other delay will be rejected.
c. If offers for more than one item are clubbed together, tender will be rejected.
d. The tender offers should have a validity of 180 days or more from the due date. The tenders will be valid for 6 months from the date of opening and may be asked for extension by taking written concern of the firms if needed.
e. Price bid will be opened online at www.mptenders.gov.in on 30.01.2025 from 15:00 hrs to 17:00 hrs. If date of opening of price bid will be changed due to any circumstances. That will be informed to bidders.
f. R.V.S. Krishi Vishwa Vidyalaya (RVSKVV) reserves the right to extend the opening due date and or the date of opening the tenders.
g. All the leaflets in the offer should be marked with signature and seal of authorized person.
6. a. The rates quoted should in Indian Rupees (₹) for a **single complete unit** with F.O.R. delivery at RAK, CoA, Sehore. The rates quoted should be inclusive of packing and forwarding charges/loading/unloading/handling charges/freight/full risk coverage/insurance, *etc.* In case of imported goods all the expenses towards custom duty, clearing charges and transportation with insurance will be borne by the firm/tenderer and they must quote the rates inclusive of all F.O.R., RAK, CoA, Sehore in INR.
b. Excise duty/Sales Tax/GST/Custom duty (with and without concession certificate) and other levies, if any should be shown separately and the **total price** of each item should be worked out incorporating the all.

- c. Any other charges, such as technical service charges, cost of training, installation charges, TA/DA of tenderer's staff *etc. if any*, should be shown separately for each item and each sub-item and the total price of each item should be worked out incorporating the same in final quoted price.
7. All losses during transit will have to be made good by the tenderers at his cost within a period of 15 days.
8. The tenderers must provide guarantee/warranty on **manufacturers' letterhead** of satisfactory functioning of the equipment/system and free service including free replacement of parts for a period of at least **3 years** from the successful and satisfactory installation of the equipment/system. Original to be deposited by the successful bidder at the time of supply.
9. **Performance Guarantee:** The Successful bidder/supplier will be required to furnish a Performance Guarantee in the form of FDR from a public sector bank or a private sector bank authorized to conduct government business for a sum equal to **10%** of the Supply Order value within 30 days of signing of the Supply Order. Performance Bank Guarantee will be valid up to 3 years beyond the date of guarantee/warranty.
10. Offer must be accompanied by **Earnest Money** as stated against each item must be submitted on- line. Without the deposition of earnest money, the offers will be rejected.
11. The standard terms and conditions of payment is in full only after the installation is affected to the satisfaction of RVSKVV authorities in INR only.
12. Please quote maximum discounted price, as no further negotiations will be made.
13. Complimentary items/gifts offered will not be given any preference and will not be considered for calculating the cost of the item.
14. *The offers must mention make, model all the specifications of the item clearly. The company must enclose printed literature/catalogue/manufacturer's web-site showing detailed technical specifications required. A folder showing many instruments without detailed technical specification, or tailor-made literature mentioning "yes" or "as per your specifications" for the specifications asked for, will not be considered. Specifications given in the offer must match to the website and/or printed technical literature otherwise the offers shall be rejected.
15. Technical specifications of the equipment / items have been very clearly formulated by the users/experts of the field as per the requirement of the work to be conducted. It will be sole discretion of the bidder whether to quote or not for equipment with particular specifications.

16. *Firm must provide a compliance statement vis-à-vis specifications in a following "tabular form" clearly stating the compliance, supported by technical literature with clear reference. This statement must be signed, with the company seal, by the Tenderer for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the offer.

Name of Equipment:		
Technical Specification	Compliance (Y/N)	Deviation, If any

17. *Offer must be accompanied with a comprehensive list of users on manufacturers' letterhead, wherever possible bidders may also provide certificates for satisfactory working of the equipment from users of universities and institutions of repute.

18. a. If so desired by RVSKVV, the bidders shall have to enter in to an agreement.

b. Any wrong information about item, any forged document and any deviation, variation of non-compliance of the terms and conditions by the tenderers shall be considered as a breach of contract and RVSKVV reserves the right to forfeit the amount of earnest money and/or security deposit in full and take action as per legal arrangement.

19. Should there arise any dispute, the Hon'ble Vice Chancellor, RVSKVV, Gwalior shall be the sole Arbitrator whose decision in the matter shall be final and binding. Each and every judiciary transaction shall be subjected to Gwalior only.

20. *Tender will not be considered if the firm does not supply a copy of the TIN/ GST& PAN/ Registration of the firm allotted to it for relevant items. PAN of the owner or any other persons will not be accepted.

21. This tender is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the tender, should it become necessary at any stage.

22. RVSKVV reserves the right to accept or reject any or all offers in full or in part without assigning any reason (s) thereof. It also reserves the right to place and order wholly or in part with one or more than one firm as it may be convenient to RVSKVV, Gwalior.

23. The tenderer shall have to give an undertaking that the terms and conditions as mentioned above of this tender are acceptable to the tenderers in form of downloaded Tender documents duly stamped and signed.
24. If firm wishes, they can send their representatives, duly authorized in writing, to attend the Technical Evaluation and clarification regarding bids which is scheduled at 15:00 hrs on 20.01.2025.
25. In case, if single manufacturer of the any item and having propriety rights. Items may be purchased with the permission of concerned higher authority.
Bidder should be submitted EMD (Provide EMD Details) in the form of DD/ MSME firms are exempted from EMD Submission.
26. The annual turnover of the agency should not be less than 5 crores during last five financial years. For the annual turnover audited balance sheet along with annual report and IT return of the agency should be submitted as supporting documents.
27. Bidder should have ISO certificate
28. Firm should have 3 minimum years' experience of running minimum four similar project in any govt. dept./semi govt/ autonomous institution. (Attached documentary proof of work order and completion certificate)
29. Bidder should have experience of establishing any Hi-tech unit Setup at least 1 work order value not less than 25 Lakh. (Attached documentary proof of work order), issued from Govt. or Non-Govt. Organization should be attached with tender documents in support of experience which clearly indicates firms name and work executed along with price list and payment proof.
30. The party/firm/company should be provided comprehensive work plan proposed with sealed Designs/Drawings using CAD (Computer aided Design)
31. Valid Authorization certificate from the manufacturer/ company/ distributor /dealer applicable in the current year/valid for published tender for items.
32. Joint Venture is not allowed for participate this tender.
33. Bidder must secure minimum 70 score in the score sheet provided in Annexure II to qualify in the technical bid.

34. The financial bids of only qualified firm in technical bid will be opened. The financial bid will be evaluated on the basis of total cost of the project quoted by the firm.

Dated:



**Director Research Services
RVSKVV, Gwalior**

Annexure-I

DIRECTORATE OF RESEARCH SERVICES
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA
GWALIOR 474002, M.P.

SUPPLEMENT / CHECK-LIST TO BE PROVIDED WITH TECHNICAL BID

ITEM No. _____ NAME _____

S.No.	Information required	Proposed
1.	Make of main item	
2.	Model of main item	
3.	Name of manufacturer of Main Item	
4.	Country of origin of main item	
5.	Name, Make and model of sub item I (if any)	
6.	Name, Make and model of sub-item II (if any)	
7.	Name, Make and model of sub-item III (if any)	
8.	Delivery within (days)	
9.	Rate of Excise duty (%) with surcharge, if applicable (item-wise if different ED is applicable)	
10.	Rate of GST (%) livable. If no, state basis and terms of the exemption.	
11.	Is Service Tax extra? If yes, rate of Service Tax livable (%)	
12.	Any other Taxes / Duties / Octroi / Entry taxes etc. in %	
13.	Order to be placed on	
14.	Guarantee/Warrantee (3 years)	
15.	Validity (at least 180 days)	
16.	F.O.R.: RAK CoA, Schore	
17.	List of current users (Attach, if any)	
18.	Certification of satisfactory working of the equipment (Attach, if any)	
19.	Compliance of equipment with current directives of ISI / CE / EEC / US / EU or equivalent standards	
20.	Whether manufacturer / authorized distributor/sole agent? (Attach original certificate)	
21.	Technical literature (Attach, if any)	
22.	Earnest money deposited (EMD) on line and proof has been enclosed	



23.	Situations of Authorized service centers/ service personals <i>etc.</i> (Provide complete address)	
24.	Relevant documents such as ITCC, ST registration shop Act, establishment certificate, factory registration <i>etc.</i> (enlist and attach)	
25.	TIN and PAN allotted (Attach a copy)	
26.	GST number	
27.	Any other relevant information	

DECLARATION

The terms and conditions as mentioned in the tender are acceptable to us.

Authorized Signatory

(Seal of the Firm)



Annexure II**SCORE SHEET FOR TECHNICAL EVALUATION OF BIDDER****Important Note: Proof is to be uploaded to qualify for the marks**

S. N.	Criteria	Max. Marks	Marks Obtained	Remarks
1	Firm should have a minimum of 3 years' experience of running minimum two similar projects in any govt. dept./semi govt/ autonomous institution. (Attached documentary proof of work order and completion certificate) (Attached documentary proof of work order and completion certificate) (3X5 marks).	15		
2	Firms applying for the proposed work should have experience of establishing at least 5 similar natures of work of hi-Tech project (5X3, marks for Each).	15		
3	The annual turnover of the agency should not be less than 5 crores during the last five financial years. For the annual turnover audited balance sheet along with the annual report and IT return of the agency should be submitted as supporting documents. Profit and loss account and balance Sheet certified by the Chartered Accountant indicating the Turnover per annum for the said period should be enclosed. Only that balance sheet and profit and loss account statement that are used for filing IT returns should be Uploaded (5X3 marks/year).	15		
4	ISO Certificates (6 Marks) (2 marks per certificate)	6		
5	(a) Work Order of 4 Nos of "Hi-tech unit Setup" having at least one order value of Rs. 25.0L (or more) (To be appended with purchase order (4 x 3, marks for Each).	12		
6	Having own fabrication facility (Proof, contact details of office, factory address to be given). Certificate under shops and establishment Act/ certificate of incorporation of the firm as limited company needs to be uploaded (9 marks).	9		
7	Detailed technical CAD drawings of the Project & PERT for proposed project.	8		
8	Human Resource: Full time employed technical manpower (Proof of employment (appointment letter, & proof of qualification (degree certificate) to be given for each position) (2 marks per	10		

	position maximum 10 marks).			
9.	PPT presentation regarding Speed Breeding Unit Facility	10		
	Total Marks	100		

*** Bidder must secure a minimum of 70 marks to qualify in the technical bid Evaluation**

***Financial score (Sf)**

Financial bids will have a 30% weightage factor in the final evaluation of the total bid score. The points will be allotted on the basis of the following:

$Sf = 100 \times (Fm/F)$, in which SF is the financial score, Fm is the lowest price and F is the price of respective bidder.

Total Score (St)

The weightage given to the Technical and Financial proposals are:

Technical = 0.70 and Financial = 0.30

The bids shall be evaluated on the basis of Total score obtained by the company by adding the weighted technical score and financial score.

Combined total score (S) = (St X 0.7) + (SfX0.3)

The tender shall be awarded to the bidder with highest score.


(Director Research Services)

Firm Details

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Financial Bid Proforma

Speed Breeding Rapid Generation Advancement and Variety Development in Chickpea Speed Breeding.
Location: R.A.K. College of Agriculture, Sehore (M.P)

Work	Total Amount (Rs.) Including GST	Remark
Complete Speed Breeding unit (As specified in technical bid including Civil work, Speed breeding RGA, Chamber 1, Chamber 2, Growing light for chamber 1, Manual Grid Mechanism, Pre-entry room & doors, side Ventilation, benching system, Fogging system, Drainage system, Genset & Solar panel, Electric wiring, Warranty, Comprehensive annual warranty etc.)		

Signature
Seal

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R.A.K. COLLEGE OF AGRICULTURE, SEHORE

Speed Breeding Rapid Generation Advancement and Variety Development in Chickpea Speed Breeding

Location: RAK College of Agriculture, Sehore, M.P.

Specification for Speed Breeding Chamber and Civil Work

A. CIVIL WORK (for approx. plot area of 30 m x 15 m):

1. Flooring:

- **Material:** Use reinforced concrete (RCC) for durability and ease of maintenance.
- **Thickness:** 150 mm (6 inches) thick RCC slab with a 1:2:4 concrete mix (1 part cement, 2 parts sand, 4 parts aggregate). Ensure proper compaction of subgrade and provide a sand layer of 50 mm for leveling before the concrete.
- **Finish:** Smooth finish with a trowel or provide anti-skid texture, if necessary, especially in areas prone to water spillage.
- **Drainage:** Install a slight slope (1-2%) for effective water drainage towards designated outlets.

2. Boundary Wall:

- **Height:** Total wall height: 8 feet, 6 feet solid boundary wall with 2 feet wire mesh (coil) at the top for ventilation and security.
- **Material:** Bricks or concrete blocks with cement mortar (1:6 ratio).
- **Wall thickness:** 12 inches for structural stability.
- **Wire Mesh:** Galvanized wire mesh (razor blade wire; 600mm). Mesh should be rust-proof for durability.

3. Main Gate (For Vehicles):

- **Size:** 10 feet wide and 8 feet high.
- **Material:** Heavy-duty steel gate with powder coating for rust resistance.
- **Base Support:** Reinforced concrete pillars on both sides of the gate to provide structural support.

4. Pedestrian Side Gate:

- **Size:** 1.2 m (4 feet) wide and 2.1 m (7 feet) high.
- **Material:** Steel gate with powder coating, similar to the main gate for aesthetic uniformity.
- **Locking:** Include a pedestrian lock system and a self-closing hinge.

5. Additional Considerations:

- **Security:** Install lighting fixtures and CCTV around the perimeter and gates.



- (2)
- **Painting:** Paint the boundary wall with waterproof exterior paint to prevent damage from weather.
 - **Wire Mesh Fixing:** Use secure hooks or steel frames to fix the mesh at the top of the boundary wall.

B. SPEED BREEDING RGA (RAPID GENERATION ADVANCE) FACILITY

Chamber 1: Control Chamber: Dome Shape: Size- 24 m x 8m x 6m x 4 m (Length: Width: Centre Height: Side Height)

1. Frame Structure:

- **Material:** Galvanized steel or aluminum alloy frame for lightweight and corrosion resistance.
- **Shape:**
 - Dome-shaped frame with pre-engineered curved trusses for structural stability.
 - Use arches at regular intervals (approx. 2m) to support the polycarbonate sheets.
- **Base Support:** Secure the frame to a reinforced concrete base for stability during high winds or other environmental factors.

2. Polycarbonate Sheets:

- **Material:** 6mm thick, UV-resistant polycarbonate sheets.
 - Ensure that the sheets are double-walled to provide better insulation and thermal regulation.
 - UV-protective coating on the exterior surface to prevent yellowing and degradation.
- **Fixing Method:**
 - Fixing the polycarbonate sheets to the frame using **aluminum profiles** with rubber gaskets to allow for thermal expansion and contraction without compromising the structure.
 - Profiles should be anodized or powder-coated for additional rust and weather resistance.

3. Sealing and Joints:

- **Sealant:** High-quality, weather-resistant **silicone sealant** for all joints between polycarbonate sheets and the aluminum frame.
- **Gaskets:** Install EPDM rubber gaskets along the edges of the sheets to further enhance sealing and allow for movement due to thermal changes.

4. Ventilation:

- **Air Circulation:** Install roof or side vents with a mechanism for automatic or manual operation to allow airflow and prevent overheating inside the dome.
- **Insect Screens:** Use fine mesh screens on vents to prevent insects from entering the chamber while maintaining airflow.

5. Rainwater Management:



- Add guttering along the edges of the structure to collect rainwater and divert it away from the base.

Chamber 2: Insect Proof Net House (8m x 7m)

1. Structure and Frame:

- **Material:** Hot-dip galvanized steel or GI (Galvanized Iron) pipes, corrosion-resistant.
- **Frame Dimensions:**
 - **Vertical Posts:** GI pipes with a diameter of 60 mm and a wall thickness of 2 mm, spaced at 2 m intervals.
 - **Horizontal Braces:** GI pipes of 40 mm diameter and 2 mm thickness, connecting the vertical posts for stability.
 - **Roof Structure:** Triangular or domed design, using GI pipes of 40 mm diameter for load distribution.
 - **Foundation:** Use concrete footings (1.5 ft deep) for each vertical post, anchored securely to withstand wind pressure.
- **Height:** 6 m total height, allowing for sufficient air circulation inside.

2. Netting:

- **Material:** UV-stabilized **HDPE (High-Density Polyethylene) net**.
- **Mesh Size:** 50% shading net or insect-proof net with a mesh size of 40-50 microns depending on the purpose (shade or pest protection).
- **Color:** Green
- **UV Protection:** The net should be UV-treated to ensure durability under prolonged exposure to sunlight.
- **Fastening:** The net should be tightly secured to the frame using **nylon ropes** or plastic fasteners to prevent sagging and damage due to wind.

3. Doors and Ventilation:

- **Entry Door:**
 - One main entry door made from **galvanized steel frame** with the same netting material for covering.
 - **Dimensions:** 2 m x 1 m, providing easy access for personnel and equipment.
 - Door frame with hinges and a latch system to ensure secure closure.
- **Ventilation:**
 - **Roof Ventilation:** Optional side or top vents covered with insect-proof netting for improved air circulation.
 - **Side Openings:** If needed, side roll-up sections can be provided to facilitate controlled ventilation.

4. Anchoring and Stability:

- **Foundation:** Each vertical post should be embedded in a concrete base with dimensions of 30 cm x 30 cm x 45 cm deep to ensure stability and resist wind loads.
- **Cross Bracing:** Horizontal and diagonal cross bracing at all corners to add rigidity to the structure.

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5. Accessories:

- **Fasteners:** Use stainless steel bolts, nuts, and screws to assemble the frame and fasten the netting.
- **Pest Control:** Option to install a double-door airlock entry system for better pest exclusion.

6. Additional Considerations:

- **Wind Load:** The structure should be designed to withstand wind speeds up to 100-120 km/h, depending on the local weather conditions.
- 1 Steel wash basin (18 inches x 16 inches x 16 inches) with fitting accessories like tap and pipeline.

Growing Light for Chamber 1 - PAR LED Light with quantity 65 pcs

Following details to be considered:

- Light should be focused and should not diffuse with uniform distribution
- High Intensity and highly efficient LED to be used.
- 4-color LEDs viz. Hyper-red, Deep Blue, White and Far-red.
- Robust durable & reliable drivers.
- High performance MCPCB design.

Specifications

Special Specification	
Light Output	1600 $\mu\text{mole/s}\cdot\text{m}^2$ measured from 305mm
Efficacy	3.0 $\mu\text{mole/J}$
PPF	650 $\mu\text{mole/s}$
Color Wavelength	B- 450 nm; R-660 nm; FR - 735 nm; W- 5700K
Electrical Specification	
Wattage	250 W (max.)
Operating	Voltage 220 V ac 1 ϕ
Amp rating	1.05 A
Power factor	> 0.9
Frequency	50 Hz
General Specifications	
Dimension	1100mm x 500mm x 50mm
Operating Temperature	-5°C to 50°C
LED Life	52000 Burning Hours

Manual Grid Mechanism for light movement in Chamber 1: Grid mechanism customized modules with manual, swive pulley, special cable drum with S.S. wire rope.

Structure: Frame: All galvanized steel is used and design as per IS875 standards to take withstand of wind speed 120 km. /hour. End wall and side wall framing should be of Aluminum

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corner trims, aluminum ridge bar and Galvanized gutter trim. Brackets & fasteners are required to assemble frame.

Pipe: Pipes sections to be used for different structures should be as below or equivalent:

- a) Columns: 80 mm x 50 mm x 2mm thick hot dip galvanized pipe.
- b) Top Rafter: 40mm x 40mm x 2mm
- c) Trusses: 50mm x 50mm x 2mm thick. with 10mm bar
- d) Gutter: 6m Long, 248mm wide and 1.5mm thick molding hot galvanized steel plate
- e) GIRT: 50 mm x 50mm x 2 mm
- f) Purlins: 40mm x 40mm x 2mm thick

All G.I pipes should be galvanized.

Nuts and other metallic parts: Include all the elements required for joining and water tighten components (such as fittings, clamps, screws, and nuts plated against corrosion).

PRE-ENTRY ROOM & DOORS:

A. Ante Room (For Chamber No 1): The chamber should have a specific Pre-Entry Ante Room of size-4m x 2.5m x 3m (LxWxH), made of polycarbonate sheet of 6mm thickness and galvanized tubular frame, where all the other spare items can be stored/dumped out. • 1 Steel wash basin (18 inches x 16 inches x 16 inches) with fitting accessories like tap and pipeline for Chamber 1.

Sliding Doors (For Chamber No 1): 1 m. wide & 2m. Tall single door complete with polycarbonate sheet glazing, top & bottom tracks, jambs, flashings & installation hardware. Quantity: 2

SIDE VENTILATION:

For chamber 1:

- Both sides manually operated ventilation system of Chamber 1 with manual opening & closing, PC Sheet framing with gear mechanism, driving shaft, rack pinion, covered with 40 mesh nylon net from inside to prevent insect entry inside the chamber, generally used during power failure, windows lift to 1 m wide & opening length wise (8 m).

External manual rollable shading: UV stabilized 50% shade net (Agro shade net) on roof with manual rollable arrangement

Evaporative Cooling System control: 1 Complete set.

1) 5 ft. height x 13 ft. evaporative, cooling pad complete with all necessary framing material of Aluminum required supported distribution with returning piping system.

- Gutters, down spout end caps & drip pan, plumbing kit, pump required of 440 volts - 3 phase, 50 cycles, drilled PVC piping cap, pad retainer, all suspension hardware.
- Metal flashings are required to seal pad to vent opening. 4" thick evaporative cooling pad material.

[Handwritten signatures and initials]

- Pad Area: 13 ft. x 5 ft. x 4 inches (w x h x Thickness)
- Construction Material: Aluminum Profiles: Tray Sides, Top etc.; Plastic Profiles: Water distribution tray. Cooling Media: 100mm thickness
- Filtration: 25 to 55mm viscous filter for 30 m3 efficiency.

Miscellaneous: Fasteners and clamps should be galvanized. Rivets should be of aluminum.

- 40 mesh nylon fitted behind the pad for extra protection from dust.
- Slow Speed Axial Flow Fan – 48 inches single speed belt driven exhaust fan, 440V, 50 cycles, 3 phase with Louvers opening /closing assembly

Room Environment Control system for Chamber 1:

- Microclimate control panel for temperature, humidity & CO₂ controller with piltz timer with manual operating option and, volt meter, RYB indicator etc.

Input (Power Supply)	100 to 240 VAC, 50/60 Hz
Output (Power Supply)	7.2 W
Wi-Fi/ Bluetooth Module	
Measuring Temperature range	0 to 50.0 Deg C
Humidity	0 to 100% RH Optional Range
Carbon Dioxide	500 to 5000 ppm
Accuracy Temperature	+/- 1 Deg.C
Humidity	+/- 5%RH
CO ₂	80ppm on full scale
Sensor Type	Polymer sensing for Temperature; Capacity polymer sensing for Relative humidity; NDIR Sensor for CO ₂ measurement
Light Photoperiod Control	Web or mobile app
Communication	Wi-Fi Based Module

Benching System:

- 30 Benches made of hot dip Galvanized top frame angle of 50 mm x 50mm with 5mm thickness and top covered by diamond cut shape (GI mesh) with mesh thickness of 3mm x 2.5mm
- **Size:** 8 feet x 4feet x 2 feet 4 inches (Length x Width x Height)

Fogging system :(For all chambers)

- High pressure fogging Nozzles (stainless steel, 0.2-0.5 mm orifice) to ensure fine mist, Nozzle pressure: Operate at 4-5 bar to generate uniform fog for humidity control. Material: LLDPE (Low-density linear polyethylene) pipes, 16 mm diameter, resistant to UV and chemicals.
- Lateral pipe with supporting wire, water pump (minimum 1 hp) with screen filter, **1000 L PVC tank** (antimicrobial, four-layer Sintex, Apollo or equivalent) complete set.

Drip irrigation for chamber 1:

✓  

- ①
- The integrated drip line of 16 mm (LLDPE) with 4-way PCJ Dripper for grow bags / pots, water pump (minimum 0.5 hp).

Water Tank: 2000 Ltr. overhead water tank (PVC) (Quantity: 2); 5000 Ltr. Underground water tank (PVC) (quantity: 2); 1hp water pump set (Quantity: 2) (PVC tanks: antimicrobial, four-layer Sintex, Apollo or equivalent)

Source of water:

- From main connection with PVC pipe (40-50 mm thickness), length of 30 – 40 m with fitting accessories along with PVC valve etc. complete set.

Drainage System for all chambers:

- PVC underground pipes (40-50 mm thickness), and with required floor drainers made of stainless steel; complete set. Ensure they are resistant to corrosion, chemicals, and UV exposure.

Growing bag: 24 cm x 24cm x 40 cm, 100% UV protected LDPE poly grow bags: qty : 500 pcs

- Material : UV treated LDPE
- Colour : Inner black and outer white
- Special Feature : Lightweight, UV Resistant

Planting Pots/trays: Thermoplastic yet durable and resistant to cracking or breaking. 4" square pots. Color: Black. Lightweight, UV resistant. qty: 7000 pcs (Pots); 300 pcs (Tray)

Genset: Genset 10 KVA, three phase with installation work, earthing work, required electrical panel and cabling with RCC platform.

- **Capacity:** 10 KVA.
- Electric start with a battery and manual override, Adequate to produce a constant 10 KVA output, with automatic voltage regulation (AVR) for steady power supply.
- Anchor bolts should be installed during RCC platform casting for securing the genset.
- **Automatic Transfer Switch (ATS)** panel for automatic switching between mains and genset power.
- Includes MCBs, MCCBs, and protection relays for overload and short-circuit protection.
- **XLPE insulated copper cables**, 4-core, with appropriate current ratings.
- Cable size: 16 mm² (or as per load requirement) for connection from the genset to the distribution panel.

Solar Panel (15 kW On-grid System):

- **Capacity:** 15 kW (Kilowatt)
- **Solar Panels:**
 - Type: **Monocrystalline or polycrystalline** photovoltaic (PV) panels with high efficiency.
 - Efficiency: $\geq 18-20\%$.

✓





- **Frame:** Corrosion-resistant aluminum frames for mounting the panels.
- **Mounting Structure:** Galvanized iron mounting with tilt angles based on the site's latitude to maximize solar exposure.
- **Inverter:**
 - **Type:** On-grid (grid-tied) inverter with MPPT (Maximum Power Point Tracking) technology.
 - **Capacity:** 15 kW, three-phase output.
 - **Efficiency:** $\geq 97\%$.
 - Integrated monitoring system for real-time performance tracking.
- **Cabling:**
 - **DC solar cables** (4 mm² to 6 mm², depending on length) for connections between the panels and the inverter.
 - **AC cables** (10 mm² or as per design) for connecting the inverter to the main distribution panel.
- **Electrical Protection:**
 - DC and AC isolators, surge protection devices (SPD), and fuses for safeguarding the system.
 - Circuit breakers at the inverter output.
- **Metering:**
 - **Net meter** for monitoring the energy generated and supplied to the grid.
 - Provide a bi-directional meter to track energy consumption and surplus energy fed to the grid.
- **Earthing:**
 - Separate earthing for the PV panels, inverter, and structure with copper earthing electrodes.
 - Maintain earthing resistance below 5 ohms.
- **Mounting:**
 - RCC or metal roof installation with proper water drainage.
 - Tilt angle should be optimized (typically 10-30°) based on geographic location for maximum efficiency.

Electric wiring for entire facility:

- All wires (ISI Mark) should be of copper and desired load and switches, extra switches to be provided as standby, each feature has own electric line, MCB and should be under ground in electric PVC pipes (minimum 0.5 inch) complete set with A grade work, complete set.

Warranty:

- Three-year onsite warranty after takeover of the facility.

Comprehensive Annual Maintenance:

After completion of three years warranty period, the firm needs to provide AMC. A comprehensive AMC proposal for 3 years after warranty period may be quoted. Depending upon budget availability for Comprehensive AMC, the Institute may sign agreement while placing order for construction of the facility.)



(15)

Firm Details

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Financial Bid Proforma

Speed Breeding Rapid Generation Advancement and Variety Development in Chickpea
Speed Breeding.

Location: R.A.K. College of Agriculture, Sehore (M.P)

Work	Total Amount (Rs.) Including GST	Remark
Complete Speed Breeding unit (As specified in technical bid including Civil work, Speed breeding RGA, Chamber 1, Chamber 2, Growing light for chamber 1, Manual Grid Mechanism, Pre-entry room & doors, side Ventilation, benching system, Fogging system, Drainage system, Genset & Solar panel, Electric wiring, Warranty, Comprehensive annual warranty etc.)		

Signature


Seal

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Technical Specification Committee (RVSKVV)



Direction Extension
Services, RVSKVV
Member

(On line)
Dr. P. M. Gaur
Member


Dr. M. Yasin
Member


Dr. S. Katare
Member


Dr. Dinesh Paliwal
Member


Dr. Sushma Tiwari
Member Secretary


Director Research Services, RVSKVV
Chairman