# DIRECTORATE OF RESEARCH DR. RAJENDRA PRASAD CENTRAL AGRICULTURAL UNIVERSITY PUSA (SAMASTIPUR)-848 125, BIHAR

# NOTICE INVITING TENDER

For setting up of [A] Aeroponics Facility (qty. one) [B] Controlled Poly house (qty. one) [C] High-Tech Net House (qty. six)[D]Net House (qty. ten) at RPCAU, Pusa.

Sealed tenders/quotations are invited in two bid systems – (1) Technical Bid and (2) Financial Bid from manufacturers/ suppliers/ or their authorized dealers with sufficient work experience. The details can be downloaded from our website www.rpcau.ac.in The tenders/quotations should reach to the Director Research, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar–848 125 on or before 02/07/2021 through registered post/ speed post only. If the last date is a holiday, next working day will be the last date.

Director Research

Memo No. 172 /DoR/ RPCAU, Pusa

dated 10-06-2021

Copy forwarded to Officer In-Charge, Publication division, RPCAU, Pusa with a request to publish the above tenders/ quotation notice (size 8×8 cm approx) once in Patna and Delhi Edition of Hindustan Times, English Daily at the earliest on DAVP rates. The bill in duplicate along with the tear sheet of the advertisement may kindly be sent to the undersigned for payment.

Director Research

CC: O/I, ARIS Cell, RPCAU, Pusa (along with the soft copy and hard copy) with a request to place the quotation notice and bidding documents on the University website.

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# Notice Inviting Tender Bid

Tender Bid is invited from company/Firms/Agencies for setting up of Aeroponics Facility (qty. one), Controlled Polyhouse (qty. one), High-Tech Net House (qty. six) and Net House (qty. ten) at RPCAU, Pusa.

# Scope of work:

"The NIT is in three part viz. Terms & Conditions, Technical Bid and Financial Bid. Please go through this document and ensure compliance. The non-compliance of any one condition may make your offer invalid".

# A. Terms and Conditions

- 1. Sealed tenders are invited by the Director Research, RPCAU, Pusa (Samastipur), Bihar for the setting upof Aeroponics Facility (qty. one), Controlled Polyhouse (qty. one), High-Tech Net House (qty. six) and Net House (qty. ten) at RPCAU, Pusa.
- 2. The tender will be filled in two bid system i.e. 'Technical Bid' & 'Financial Bid'.

  These bids should be kept in separate sealed envelopes super scribing
  - "Technical Bid for the setting up of AeroponicsFacility (qty. one) & "Financial Bid for setting up of AeroponicsFacility (qty. one) separately.
  - "Technical Bid for the setting up of Controlled Polyhouse (qty. one) & "Financial Bid for setting up of Controlled Polyhouse (qty. one) separately.
  - "Technical Bid for the setting upof High-Tech Net House (qty. Six) & "Financial Bid for setting up of High-Tech Net House (qty. six) separately.
  - "Technical Bid for the setting up of Net House (qty. ten) & "Financial Bid for setting up of High-Tech Net House (qty. ten) separately.

Both the envelops will then be put into one envelop and will be sealed by super scribing "Tender for the setting up of AeroponicsFacility/Tender for thesetting up of Controlled Polyhouse/Tender forsetting up of High-Tech Net House/ Tender for the setting up of Net House. NIT No. 172—dated 10-06-2021

- 3. The technical bid must contain specifications and catalogue, having clear photograph, of eachfacility which are being constructed with all required equipment.
- 4. Rates quoted should be F.O.R. RPCAU, Pusa, Samastipur, Bihar, inclusive of all taxes and charges. The rates must include packaging, forwarding, transit, constructions installation, and insurance charges. The same should be insured against pilferage, theft, loss or breakage during transit by the supplier before dispatch is made. The responsibility in this respect will be of the supplying company/firms/agency and not of the University.
- 5. Supply of the equipment/goods is acceptable on bill basis only.
- 6. Payment shall be made within 30 days from the date of completion of the work in proper and satisfactory working conditions i.e. after successful setting up/installation/constructions and working demonstration.

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- 7. The payment will be made through RTGS/ NEFT. The firm must mention their account details i.e. name of account holder, account number, name of the bank with address, branch code, IFSCode etc.
- 8. Tender documents must be submitted consisting of NIT/ Tender form/ documents (technical and financial, terms and conditions of supply, special conditions if any. Schedule of quantities filled, completed and signed by tenderer).
- 9. Authorized dealers/ distributor/ retailer must submit authorization certificate from manufacturer to sale a particular item.
- 10. Manufacturers/company/firms will submit manufacturing license if they are participating in tender process.
- 11. Tender should be addressed to the Director Research, RPCAU, Pusa, Samastipur, Bihar 848125.
- 12. The Earnest Money Deposit (EMD) for equipment facility in the form of D.D. from Nationalized Bank should bedrawn in favor of Director Research, RPCAU, Pusa payableat Punjab National Bank, RPCAU, Pusa. Any tender without proper EMD shall not be considered and will be rejected solely on this ground.

Sl. No	Facility deliber 1960 a southerns to less surrante di le	EMD (Rs.)
1	AeroponicsFacility	30%
2	Net House	30%
3	Controlled Polyhouse	30%
4	High-Tech Net House	30% 100 100 100

- 13. The tender so submitted shall be governed by the GFR 2005. In terms of GFR 2005, tenderers may face legal action, if they amend tender, impair or derogates from the tender in any respect within the period of validity of this tender.
- 14. The company/firm/agency/manufacturerwill have to attach a certificate to the effect that the equipment to be supplied will be of the same specification conforming to standards of the items specified.
  - 15. The taxes which are not quoted in tender by the company/firm/agency/manufacturer will not be paid by the University under any circumstances.
- 16. The terms and conditions given by the company/firm/agency/manufacturer will not be binding upon the University. Rejection of conditional tenders shall be at the sole discretion of the competent authority of the University.
  - 17. The date/ completion period of the construction work must be clearly mentioned in the technical bid/ financial bid document as applicable.
  - 18. In cases of any dispute arising out in process of tender finalization, the matter shall be referred to the sole arbitrator who in such case will be the Vice Chancellor of RPCAU, Pusa and whose verdict shall be final and binding on both the parties.
  - 19. The tenderer may be called for technical discussion by the tender committee duly constituted or nominated by the competent authority of this University.

- 20. The acceptance of tender will rest with the University who does not bind itself to accept the lowest tender and reserves itself as the authority to reject or partially accept, any or all the tenders received without assigning any reason.
- 21. The University reserves the right to place order for the scheduled quantity and or part thereof.
- 22. Tenders are likely to be rejected in case it does not confirm to the specifications, terms and conditions etc. as laid down in tender document.
- 23. The validity of the commercial offer should be minimum 120 (one hundred twenty) days from the last date of the NIT submission.
- 24. The University will not be responsible for any postal delay.
- 25. Separate tenders must reach to the office of the Director Research, RPCAU, Pusa, Samastipur, Bihar-848125on or before **dated 19.06.2021** through **registered post/speed post** only. If the last date is a holiday, next working day should be the last date for receiving tenders.

# Maintenance Backup:

- 1. The Company will have to assure a free of charges maintenance backup for a period of one Year.
- 2. The company guarantees availability of spares for a period of ten Years from the date of installation/delivery.
- 3. The company will provide servicing for ten Years on mutually agreed terms.

# B. Technical Bid and the present and the present the sound to some the set of the

Please furnish the following information in this part so as to enable the panel of experts to decide about the qualifications of tender and the technical bid as well as necessary documents/ certificates from the appropriate authority as attached in support of statement.

1.	Application/ forwarding letter for the setting up of the facilities with brand name.	Distriction and conditions are a left of the community of the Market of
2.	Name of the applicant/company/firm/agency	24. The University will not be respect
3.	Address with the transfer of t	
4.	Earnest Money Deposit (EMD) with full details of Demand Draft	Nathtionance Backup:  1. The Company will have to assum
5.	Status of the Applicant/ company/ firm/ agency (Whether Manufactures/distributors/ authorized dealers of Reputed firms) certificate must be submitted from appropriate authority).	or one Year. 2. The company gomentees available of metallations delivery. 2. The company will provide service.
6.	Working /Manufacturing license No. with Date, if any	
7.	GST Registration No.	*
8.	PAN No.	
9.	ISO/ ISI Certificates, if any	and the second second
10.	Indicate if you are on GEM Rate Contract or any other rate contract with Government Sector	
11.	Annual Turn Over records, for the last three years	
12.	Details of clients (attach list of users)	
13.	Indicate after service facilities/technical support offered in Bihar (Service station, technical personnel etc.)	
14.	Rate validity period of tender	
15.	Technical specifications of facility (attach catalogue)	

C. Financial Bid

Pricetor Research RPCAU Trace

#### 1. Forwarding letter in respect of setting up of the facility at the University 2. Name of tenderer/ the supplier/company/agency/firm 3. Address Status of the applicant (manufacturer/ 4. supplier/ dealer etc.) Mode of supply 5. Direct/ through dealer/ distributor, if applicable Basic price of setting up of the facility 6. (INR) Applicable taxes with name and rate 7. Discount offer to institution, if any 9. Price inclusive of all taxes on F.O.R. Destination in INR with installation and other charges, if any, both in figure and words

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# **CHECK LIST**

- 1. Earnest money deposit (EMD)
- 2. Covering letter
- 3. TIN/TAN
- 4. GST
- 5. ISO/ISI certificate
- 6. Catalogue
- 7. Annual Financial Statement
- 8. Service Network in Bihar
- 9. Authorization/ Manufacturer license
- 10. Test report (as applicable)

Director Research, RPCAU, Pusa (Samastipur)

### CERTIFICATE OF PROPRIETARY

# TO WHOM IT MAY CONCERN AND ADDRESS AND ADD

Certified that the	(Name of item) is the sole
proprietary item which is manufactured only l	by us in *India/abroad and the items/
product is not manufactured in *India/abroad b	y any other manufacturer under other
brand name.	

Dated

Signature
Designation
Seal of the firm

\*Strike out not applicable

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touble from Rooms (Ante Room). Size 2.1m ag fins 2.45m(Lx W x id) = 1No

Forgoing Morales, lateralpoine with supporting wite, manp with serven filter, water tank

all sides covering with form thick clear professall Sobra Ellin line pal) carbonalis

Coving - oc coving imder each growing cultor for drain at waste water.

# TECHNICAL SPECIFICATIONS

# Item no. 01 Aeroponics Facility

(Supply and Installation at Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar)

Specification	Qty
Aeroponics Facility	01
Main Particulars of Area	risid
Total Area :500sqm	
• Dimensions: 26m x 19.2 m (L x W)	
Side Height: 3.5m	
Centre Height: 5.5m	
STRUCTURE:	
All Structure, Rafters, Perlins, Trusses are hot dip galvanized and design as per IS 875 standards to take a wind load up to 100 km/h.	board and a
	Dallar .
Hot dip galvanized Steel Structure: Using galvanized tubular structure section.  1) Pipes sections to be used for different Structural Member  a. Columns: 80 mm x 50 mm x 2mm thick  b. Trusses: Top cord 60 mm x 2mm; Bottom cord: 48mm x 2mm; Bracing  c. 25 NB, A -class GI steel pipe; structural member will be fitted with zinc plated nuts & bolts without welding.  d. Purlins: 32 mm O.D. x 2mm thick.  e. Gutter slope: In 1 side.  2) All G.I pipe sections are galvanized with zinc coating 275g/m2.  3) Nuts and other metallic parts: This includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).  4) Aluminum pipe for ant drip as discussed.	
Fogging Nozzles, lateral pipe with supporting wire, pump with screen filter, water tank 2000 ltretc	
<ul> <li>Growing Channel Size: 24m x 0.4m x 1.2m (L x W x H): 19 Nos.</li> <li>Coving:- cc coving under each growing gullies for drain at waste water.</li> </ul> COVERING:	
Greenhouse all sides covering with 6mm thick clear multiwall Sabic/ Ultra lite polycarbonate sheet with Aluminum Profile, EPDM gasket, Silicon sealant, and accessories  • Sheet thickness: 6mm  • Structure: 2 TS  • Approx. Weight g/m²:1300  • Light Transmission: 81%  • K Valve: 1300  DOUBLE DOOR ROOM:  A. Double Door Room: (Ante Room), Size 2.1m x 2.1m x 2.43m(L x W x H) = 1No	
	Aeroponics Facility  Main Particulars of Area  • Total Area :500sqm  • Dimensions: 26m x 19.2 m (L x W)  • Side Height: 3.5m  • Centre Height: 5.5m  STRUCTURE:  All Structure, Rafters, Perlins, Trusses are hot dip galvanized and design as per IS 875 standards to take a wind load up to 100 km/h.  Specification: -  Hot dip galvanized Steel Structure: Using galvanized tubular structure section.  1) Pipes sections to be used for different Structural Member  a. Columns: 80 mm x 50 mm x 2mm thick  b. Trusses: Top cord 60 mm x 2mm; Bottom cord: 48mm x 2mm; Bracing  c. 25 NB, A -class GI steel pipe; structural member will be fitted with zinc plated nuts & bolts without welding.  d. Purlins: 32 mm O.D. x 2mm thick.  e. Gutter slope: In 1 side.  2) All G.I pipe sections are galvanized with zinc coating 275g/m2.  3) Nuts and other metallic parts: This includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).  4) Aluminum pipe for ant drip as discussed.  Overhead Fogging System: Complete set Fogging Nozzles, lateral pipe with supporting wire, pump with screen filter, water tank 2000 Itret  AEROPONIC GROWING SYSTEM  • Growing Channel Size: 24m x 0.4m x 1.2m (L x W x H): 19 Nos.  • Coving:- ce coving under each growing gullies for drain at waste water.  COVERING:  Greenhouse all sides covering with 6mm thick clear multiwall Sabic/ Ultra lite polycarbonate sheet with Aluminum Profile, EPDM gasket, Silicon sealant, and accessories  • Sheet thickness: 6mm  • Structure: 2 TS  • Approx. Weight g/m²: 1300  • Light Transmission: 81%  • K Valve: 1300

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- B. Doors Sliding: 1.92 m tall& 0.9 m.wide sliding doors complete 6mm thick metallic polycarbonate glazing, top & bottom tracks, jambs, flashings & installation hardware. Qty 02 Nos.
- C. **Air Curtain:** Provision for an air curtain with multi speed at main entry of Double Door Room with auto on /off provision-. Qty- 1No.

## SIDE VENTILATION SYSTEM WITH MANUAL OPENING ARRANGEMENT:

Side Ventilation: 26.4m. Long x 02 Nos. open able to 01 mtr. on two sides with manual rolling gear. 40 mesh nylon insect screen (UV stabilized) to be fixed inside the curtain on sides.

INTERNAL THERMAL SCREEN: pleating type motorized.

#### **EVAPORATIVE FAN & PAD COOLING SYSTEM:**

5ft. height x 19.2m long x 100mm thick evaporative cooling pad, aluminum frame fitting, returning pipe, required pump filter, water tank etc.

#### Slow Speed Axial Flow Fan: Qty.06

Exhaust Fan-1250mm, 3-phase, 380-480v, 2.7kw, 50HZ with Inbuilt VFD.

Fan features- low-noise blade optimized for lower pressures. Fan blade is equipped with a gently serrated trailing edge and a special winglet for noise reduction.

Fan flow rates up to 24,500 m<sup>3</sup>/h and static pressure increase up to 150 Pa.

#### INTELLIGENT CLIMATE CONTROL SYSTEM

It is a HMI (touch screen) control system which can monitor and control Temperature & Humidity of greenhouse climate. It maintains greenhouse climate by optimum controlling of greenhouse equipment's like cooling fan, ventilation and internal shading etc. It also includes switching system for operating greenhouse equipment with suitable relays, contactors and safety devices.

- 7"/10" HMI with buttons, Data logging Feature
- PLC system with inbuilt analog module for sensor connection
- Multi- Set point programming.
- Multistage cooling /heating control
- SMS updates over phone
- Data logging is in excel and graphical format.
- Computer access from any place using internet.

#### SENSORS:

#### Temperature & RH:

Range: Range 0-50 °C and 0-100%.

Type: 4-20 mA

#### A) Temperature controller:

#### I. Fan &Pad Control:

- Control type: PID, Multiple stage control
- Temp. Range: 0.1 to 59.9°C.
- Accuracy: ±1°C.
- Hysteresis: 0.4°C
- Input: 200-240VAC (110 VAC available on demand), phase-single.
- Operating Range: 5°C to 45°C, RH up to 85% normally.
- II. Heaters Control:
  - Control Type: ON/OFF, Multiple stages

- Temp. Range: 0.1 to 59.9°C.
- Range: 0% to 100% open/close
- Hysteresis: 0.4°C

#### III. Vent's control:

- Control Type: ON/OFF
- Temp. Range: 0.1 to 59.9°C.
- Range: 0% to 100% open/close
- Hysteresis: 0.4°C

#### IV. Shading Screen Control:

- Control Type: Cover /uncover based on position calculation
- Temp. Range: 0.1 to 59.9°C.
- Range: 0% to 100% cover/uncover
- Hysteresis: 0.4°C

#### B) Humidity Control

- Control type: ON/OFF
- Range: 30% to 90%.
- Real RH: ±2%. ±1 digit (at 45%).
- Input: 220VAC (110VAC available on demand), phase- single.
- Ambient: 5° to 45°C, RH up to 95%.

## **AUTOMATIC IRRIGATION & FERTIGATION SYSTEM:**

Supply & Installation of Automatic Fertigation Unit

Automatic fertigation unit which runs without electricity, this technology has been tested internationally and fit in very well for automatic fertigation system.

- Pump Capacity: as per required)
- Pressure: 4.3 to 85 PSI
- Ratio: 1:500 to 1:50
- Percentage: 0.2 to 2%

Included Accessories: Set of legs, manual bypass and suction hose with strainer, vacuum breaker, operating manual.

Foundation wall for chamber WIDE BASED 1.5' below earth's surface. 1.5' above earth's surface, 9" wide, Frame base block height 3'x9"x9" each with plinth protection 3'wide 6" thick front side.

Flooring: Anti slippery floor tiles on rest area of Greenhouse and cemented Coving under growing tunnels.

#### Electrical Wiring.

All wires will be of copper and desired load and switches, extra switches also provided as standby, each feature has own electric line with MCB and will be underground in PVC pipe complete set with A grade work.

## Item No. 2 Controlled Polyhouse

(Supply and Installation at Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar)

SL. No	Specification	O'N 0 airemay!	Qty
01	Controlled Polyhouse ' Area 500 sq.m	Openidas Enage 5°C to 45°C, 1811 up to 45% normally.	01
	• Dimension	: 29.6 m x 16.9 m	

• Side height : 3.5 m

• Central height: 5.5 m

• Side corridor: 2.5 m (both side)

• Shape :Gothic shape /Arc

#### STRUCTURE:

Structure Main features:

A) Complete Pre-Machined Structure

All Structures, Rafters, Perlins, Trusses are hot dip galvanized And designed to take a wind load up to 100 km/hr.

Frame Works Structure:

Its assembly style without any welding point. All main parts are hot galvanized with zinc cover 275g/m<sup>2</sup>.

- Columns: Is Hot Dip Galvanized/GI Profile, tubular Structures/
- Corner Columns: Double Column, Hot Dip Galvanized Profiles
- Gutters: Hot Dip Galvanized Steel
- Arches: Hot Dip Galvanized Steel Pipes
- Arch Column Clamp: Galvanized Steel Sheet
- Crop Bar: Galvanized Pipe
- Cross and Reinforcements:
- Corner Reinforcement: Galvanized pipes
- Column-Arch Reinforcement: Galvanized Pipes

Column- Column: Galvanized Pipes

• H-Reinforcement Galvanized pipes

X-Reinforcement Galvanized Pipes

• Crop Bar-Arch Reinforcement Galvanized Pipes

Pipe sections to be used for different Structural Member or equivalent will be as below, given structure size in OD:

- a. Pillar: 80mmx50mmx2mm thickness GI pipe. Distance between pillars on central line: 4m./80mmx50mm x 2mm thickness
- b. Arc: 60mm OD pipes x 2mm thickness.
- c. Ridge: 40mm
- d. Crop Bar: 40mm x 2mm thickness
- e. Trusses Tie: 32mm OD pipes, structural member will be fitted with zinc plated nuts & bolts.
- f. Gutter: 4m. Long, 248mm wide and 1.6mm thick molding hot galvanized steel plate
- g. Roof beam: 40 mm OD 2mm hot GI pipe
- h. Bolts and Nuts: DIN Steel

Nuts and other metallic parts: Includes all the elements required or joining and water tightens components (such as fittings, clamps, screws and nutsplated against corrosion).

**DESIGN LOADS:** Wind Load Resistance: 100 km/hour Cladding:

1. Attaching the Plastic on Roof & all Sides cover up of primary Hardening Chamber

200micron UV Stabilized, IR cooling /Antidrip/Hi diffusion poly film having 85% light transmission, multilayered, anti-drip. This is attached with the structure by the spring & Aluminum profile & GRP clamps which click into it

Pre-Entry Room & Doors:

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- 1. **Ante Room/Vestibule:** The primary hardening chamber will have a specific Pre-Entry Room of size- 3m. × 3m. (L×W×H), made by polycarbonate sheet 6mm and galvanized tubular frame.
- 2. **Sliding Doors:** 1.5 m. wide & 2m. Tall single door complete with polycarbonate sheet glazing, top & bottom tracks, jambs, flashings & installation hardware. qty 2

#### Microclimate Control System

Control system which can monitor and control Temperature, Humidity. It maintains chamber climate by optimum controlling of chamber equipment's like cooling system etc. It also includes switching system for operating chamber equipment with suitable relays, contactors and safety devices.

#### Evaporative cooling system

1.5m tall with lengthwise evaporative Cellulose Complete set Cooling pad complete with all necessary framing material of Aluminum required supporting distribution & returning piping, gutters down spout end caps & drip pan, plumbing kit, pump capacity as per requirement, Drilled PVC Piping cap, pad retainer, all suspension hardware, and metal flashings as required to seal pad to vent opening, 4" thick evaporative cooling pad material.

Pad Construction Material, aluminum profiles, tray sides, top, plastic profiles, water distribution tray, Cooling Media 100 mm thick 7090/500 etc.

At velocities of 1 to 3 M/s to give efficiency from 60 to 95%.

Filtration: 25 to 55mm viscous filter for 30 m efficiency.

Water storage Tank: 2000 lit

Pump: capacity as per required (ISI mono block approved equivalent)

40 Mesh Nylon: for extra protection from dust, fitted behind the pad.

Slow Speed Axial Flow Fan - 50" single speed belt driven exhaust fan 1hp, 440V, 50 cycles, 3 phase). Qty.07

Irrigation system: Complete set

Fogging Nozzles, lateral pipe with supporting wire, pump with screen filter, water tank 2000 ltretc

Internal shading system: Manual operated internal shading with Aluminates 50% net Side Ventilation: Both sides length wise and 3m. wide manually Roll-up plastic curtains, open able to 3m. in height (open from up to down) .40 mesh nylon insect-screen (UV stabilized) to be fixed inside the curtain on sides.

**Foundation wall** for chamber WIDE BASED 1' below earth's surface. 1' above earth's surface, 9" wide, Frame base block height 3'x9"x9" each.

Floor: Natural soil as it is

Pathway: 3' wide front side inside foundation wall.

#### Electrical Wiring.

All wires will be of copper and desired load and switches, extra switches also provided as standby. each feature has own electric line with MCB and will be underground in PVC pipe complete set with A grade work

Item no. 03 High-Tech Net House (Supply and Installation at Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar)

SI No.	Specification with a statement abid to	Qty
01	High-Tech Net House	06
	Total Area: 1250Sq.m (6 units)	
	• Dimension: 32.55 m x 38.4 (L x W)	
	• Side height: 3 m	
	• Central height: 4.8 m	
	Shape: Arc   Warman and without the district the last bad at a collect such	
	STRUCTURE:	
	• Structure frame: all galvanized steel is used and design as per IS875 standards to take with stand of wind speed 100 km / h. Its assembly style without any welding point. All main parts are hot galvanized with zinc cover 275g/m <sup>2</sup> .	
	<ul> <li>Pipe sections to be used for different Structural Member flange type will be as below</li> <li>Columns: 75 mm x2mm</li> <li>Arch: 50mm x 2mm</li> </ul>	
	• Trusses: Bottom cord 50 mm x 2mm; Truss Members 48mm x 48mm, Bracing 32 mmx2mm, B-class GI steel pipe; structural member will be fitted with zinc plated nuts & bolts without welding.	
	<ul> <li>Perlins: using specially designed profile 32 mm ×2mm thick.</li> <li>Fasteners and other metallic parts: Include all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</li> <li>Cladding:         <ul> <li>All sides and roof covered by 75% UV stabilized agro shading net color green/ black combination &amp;This is attached with the structure by the spring &amp; GRP profile &amp; GRP clamps which click into it.</li> </ul> </li> </ul>	
	Leading Structure Raing on CC Column	
	Irrigation System: Over Head micro-Sprinkler System with 2000 ltr. water tank Auto on/off system for Micro sprinkler system  DripIrrigation System: Complete Set	
	Double door room & sliding doors:	
46	A) Double door room: of size 4m x 2.5m x 2.43m (L ×W×H) covered with 200micron UV stabilized poly film.qty 1	
	B) Sliding doors: double door entry, each door size 1.5m. Wide & 2m. Tall single door complete with 200micron UV stabilized polyfilm glazing, top & bottom tracks, jambs, flashings & installation hardware. Qty 2	
	Civil work: Foundation wallfor chamber WIDE BASED 1' below earth's surface.1' above earth's surface, 9" wide, Frame base block height 3'x9"x9".	
	Floor: Natural soil as it is.	

# Item No. 04 Net House

(Supply and Installation at Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar)

SI. No.	Specification	Qty
1.	Net House	10
	Total Area: 2000 Sq.m (10 units)	

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• **Dimension:** 34.72 m x 57.6m (L x W)

• Side height: 3 m

· Central height: 4.8 m

· Shape: Arc

#### STRUCTURE:

- Structure frame: all galvanized steel is used and design as per IS875 standards to take with stand of wind speed 100 km / h. Its assembly style without any welding point. All main parts are hot galvanized with zinc cover 275g/m<sup>2</sup>.
- Pipe sections to be used for different Structural Member flange type will be as below
- Columns: 75 mm x2mm
- Arch: 50mm x 2mm
- Trusses: Bottom cord 50 mm x 2mm; Truss Members 48mm x 48mm, Bracing 32 mmx2mm, B-class GI steel pipe; structural member will be fitted with zinc plated nuts & bolts without welding.
- Perlins: using specially designed profile 32 mm ×2mm thick.

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

Cladding:

All sides and roof covered by 75% UV stabilized agro shading net color green/ black combination &This is attached with the structure by the spring & GRP profile & GRP clamps which click into it.

Irrigation System: Over Head micro sprinkler System with 2000 ltr. water tank manually operated

**Sliding doors:** door size 1.5m. Wide & 2m. Tall single door complete with 200micron UV stabilized polyfilmglazing, top & bottom tracks, jambs, flashings & installation hardware. Qty 1

Civil work: Structure Raise on CC Column

Floor: Natural soil as it is.

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We stilling doors; double door entry eath door complete with 200mings UV stabilized.

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Civil worth Foundation wailfor chamber WIDE (\$755) It below earth's surface. I shove carth's surface. I show carth's surface, 9", wide, I same base block height 3", \$250", \$60.

es No. list No. Hones

Supply and installation at Dr. Rajendra Prasad Central Agrico

High-Tech Net Hunse

Cotal Areas 1250So or (6 units)

Ford Area: 2000 Squar(16 (mile)