RAJENDRA AGRICULTURAL UNIVERSITY BIHAR, PUSA
(SAMASTIPUR) - 848 125

NOTICE INVITING QUOTATION

Sealed quotations are invited in two bid system - technical bid and financial bid from ISO 9001:2000 certified manufacturers / firms of outstanding repute through Registered post / Speed post / Courier for construction of different types of Green houses / Poly House (Fan and Pad Cooling System/ Naturally Ventilated type/ Poly carbonated sheet/ Bamboo poly house) and Shed net with fogger, sprinkler, fertigation system and drip system on or before **9th March, 2010.** Those firms who had submitted their quotation earlier against our advertisement / NIQ dated 11.01.2010 published in newspaper Hindustan Times should also submit their quotations afresh. The details about specification and terms / conditions etc. can be obtained from our website : **www.pusavarsity.org.in .**

Associate Director Research

Sl. No.	Name of the particular and specification	Quantity
1.	**Green house (Fan and pad cooling system) :** **specification :** **Size ;** 500 Sqm. approx . (250 Sqm each) **Shape:** Saw tooth shaped, made by latest ZEP- Technology. For ; Temperature 1 ^{0}C ; Humidity ± 4% Water pad cooling system. Axial flow fan 48"- 2 nos. with CH2 HD (outer fixtures and 200 liters polymer SL 3 - 240 system water tank to distribute and collect water from pad. Cell pads complete thick width with system lowers by 8^0 C ± 2 at outside maximum 62%RH (subject to ambient 35°C or above) or low . **Side height - 3.5 m.** **Centre height - 5.5 m**. and pillars grouting with concrete. **Shell:** Cladding with low density film 200-microns, UV stabilized structure mainly of GI iron B- grade pipes 32 mm and 25mm ± I mm, door size I.92m x 0.9m (6' 33" x 3) Lockable. Special GI profile. Structure will be raised on CC block (1' x 1'x 2'). Electrical wiring of entire poly house, with drip fogger , sprinkler and complete automatic fertigation system etc. **Miscellaneous:** Ladder, plumbing polymer pipes etc. **Covering :** Attaching the plastic on roof and side wall with 200 micron UV stabilized poly film with IR and anti fog properties. Provision of rolling 50 % shed net inside the green house. **Doors:** Door-72" wide x 84" tall double door complete with 50 mesh net glazing , top and bottom track ,Jambs, flashing and installation hardware to be positioned at one end wall. **Ventilation:** Sides ventilation in two sides , roll up plastic curtains open able to 3 m in height from up to 1 m from bottom level with 50 % nylon mesh insect net. **Drip:** Drip irrigation systems integral type with sand filter/Disc. Filter sub main , laterals (16 mm), sprayers 6-8 mm/ hr. and etc with automatic and self flushing. Spacing between laterals 0.8 m and 0.4 m in between emitters. **Fogging systems:** Fogger systems heavy duty motor with nozzles 3 mm / hr. filter, pipe, tank etc. to raise R.H. provided humidity created is not expelled from the green house. **Controls:** Controller for humidity and drip irrigation. a. 003046-00491 humidity controller micro climate. b. 003046-497 Piltz timer attached with fogger and other accessories. **Electrical fittings:** Conduit and wiring as required for connecting light, fan .motor and pumping to main electrical supplies. **Trellis systems :** Trellis systems providing and fixing of UV stabilized trellis with dutch V type systems . **Civil work:** Insert GI pipes of 50 NB Class B or equivalent section to have foundation depth of 600 to 750 mm grouted with C C mixture of 1: 2 : 4. Telescopic insertion of columns Length of insertion is 1 to 1.2 m. Wall at plinth- 2' x 9" concrete wall erected all sides with plaster. **Floor:** Natural (as it is) soil.	02 Nos Complete set.

Sl. No.	Name of the particular and specification	Quantity
2.	**Green house/ Poly house (Naturally Ventilated type):** **Specification:** **Area / Size-** 4000 sqrn. approx. (500 Sqm each) **Shape: Aero – Dynamic ,** Orientation – North east (Gutter orientation) for Tomato**,** Capsicum, Cucumber,Gerbera,Carnation, Rose, Chrysanthemum etc. **Side height - 3.5 m.** **Centre height - 5.5 m**. and pillars grouting with concrete. **Apron height 1.8 m.** and ventilation – 30 to 35 % in 3 side and top, provision of rolling 50% shed net inside the green house. **Structure :** All structures ,Rafters, Perlins , Trusses are hot dip galvanized and design as per IS 875 standards. **Wind load -140 km/hr. Crop load- 25 kg / m2**. and **gutter slope- 1%** to be provided in civil foundation. Hot dip galvanized steel structure or equivalent section . a. Columns- 80 x 50 mm x 2 mm thick. b. Arch – 60 mm OD x 1.5 mm thick . c. Trusses – bottom card 38 mm x 2 mm; Truss members 38 mm x 2 mm ;bracing 25 NB, B- Class GI steel : structural member will be fitted with zinc plate nuts& bolts without welding. d. Profile member : 32 mm O.D. x 2 mm thick, all G.I. pipes are ISI made and galvanized, Gutter materials 20 gauge G.I. sheet. **Covering :** Attaching the plastic on roof and side wall with 200 micron UV stabilized poly film with IR and anti- fog properties. Side wall curtain 1.8 m. height , Polyethylene on all the four side with proper fixing arrangement. **Doors:** Door-72" wide x 84" tall single door complete with 50 mesh net glazing , top an bottom track ,Jambs, flashing and installation hardware to be positioned at one end wall. **Ventilation:** Side ventilation in three sides, roll up plastic curtains open able to 3 m in height from up to 1 m from bottom level. Top ventilation fixed ridge vent 1.5 m with 50 % nylon mesh insect net. Provision of electric exhaust fan within the green house, 5 fans in each 500 sqm. **Drip:** Drip irrigation systems integral type with sand filter/Disc. Filter sub, main , laterals (16 mm), sprayers 6-8 mm/ hr. and etc with automatic and self flushing. Spacing between laterals 0.8 m and 0.4 m in between emitters with timer. and complete automatic fertigation system etc. **Fogging systems:** Fogger systems heavy duty motor with nozzles 3 mm / hr. filter,pipe,tank etc. **Electrical fittings:** Conduit and wiring as required for connecting light, fan .motor and pumping to main electrical supplies. **Civil work:** Insert GI pipes of 50 NB Class -B or equivalent section to have foundation depth of 600 to 750 mm grouted with CC mixture of 1: 2 : 4. Telescopic insertion of columns. Length of insertion is 1 to 1.2 m. wall at plinth- 2' x 9" concrete wall erected all sides with plaster. **floor** - natural soil.	08 Nos Complete set.
3.	**Green house (Poly carbonated sheet) :** **Specification:** **Area – 100 Sqm**.	01 No. Complete set

Sl. No.	Name of the particular and specification	Quantity
	Size – 16.67m. x 06 m (length and width).**Side height** – 2.5 mt. and **Centre height** – 3.5 mt .	
	A. Photosynthetically Active Radiation Lamp with Photo simulators 016166-00700-B, (PAcRA tm). PAcRA W 1.7 TO 2.6/60 PAcRA ^{tm} are specific action.	06 nos.
	B. Normal Tube lights standard 4' with fitting.	06 nos.
	C. Super Structure Module Aluminum anodized covering strip infra Structure Mainly GI B grade pipe 50 mm × 50 mm ± 1mm. All structure design as per IS875.	Complete
	D. Buffer Room: Size 1.92 × 0.91m. (Normally 6'-3" × 3") lockable.	01 no.
	E. Cladding with Polycarbonate sheet multi walled 6mm thick, UV stabilized with geeignet gaskets for sides & roof, set.	Complete
	F. Roof Screen 75% (shading) color green, black.	Complete
	G. Evaporative/Water pad cooling system: Axial flow fan 36", nos. 2 with CH2, HD motor fixtures and a 200 liter polymer SL-3-40 system water tank to distribute and collect water from pad, cell pad thickness: 100 mm, pad's length will be equal to complete length of greenhouse, 1.5 m. height of pad.	01 set
	H. Microprocessor Control unit code no. 02264-00304 Temperature Controller, Humidity Controller, Timer Piltz & Photoperiodic Controller.	01 set
	I. Bio-tech Heat Convector Gerat, Code- 013244-00471 **Heating system 2.4 kw** Complete circulation system to circulate heat, so that the heat can be distributed in the complete area	04 nos.
	J. Misting unit heavy duty code no.003046-00496 motor with nozzles, filter, pressure meter, piper, polymer water tank 1000ltr (Syntax) etc, to raise R.H. up to 90%.	01 unit
	K. Foundation wall for polycarbonate house: Wide based 1' below earth's surface, 1' above earth's surface, as kick-board 9" wide. Frame base block height 2'.	Complete
	L. Floor made of crushed bricks 2", over that, rode up to 2" over that cement plaster with ratio of rode, sand, cement, 4:3:1 tiled with full white anti slippery hard material.	Complete
	M. Electrical Wiring All wires will be of copper and desired load and switches imported make, extra switches as standby. Each feature has own electric line with MCB and will be underground in PVC pipe.	Complete
	N. Miscellaneous -Washbasin, aluminum ladder, plumbing polymer pipes etc. All fittings of ISI or equivalent material and complete automatic fertigation system etc	Complete

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4.	**Bamboo Poly House:** **Specification:** **Approx area –** 4000 Sqm. (250 Sqm each). **Technical of Bamboo green house** 1. Galvanized iron grouts as foundation. Columns inserted into grouts and clamped with bolt and nuts. 2. Columns of bamboo and all other bamboo chemically treated for long life ; e.g. with copper chrome arsenic (CCA). Bamboo should be drilled with hole before treatment for better chemical penetration in a pressure treatment plant. 3. Bamboo columns to be of strong varieties like *Tulda, Balcooa* etc. 4. Design to give strength by using double columns or double rafters in the truss, all fixing done with bolt and nut. 5. GI / Aluminum profiles and GI springs to be clamped to bamboo purling with self driven screws. Purling to be in straight line using double rafters in the truss. 6. 200 micron UV stabilized polysheet similar to sheets imported from Ginegar Plastics, Israel. 7. Irrigation systems, including motor, tank, filter, PVC mains, sub-mains, valves, LLDPE laterals with inline drip or/and fogger as required for irrigation and humidity control, respectively with timer. Electrical fittings conduit and wiring as required for connecting light, fan ,motor and pumping to main electrical supplies. 8. 8. Civil work- Insert GI pipes of 50 NB class B or equivalent section to have foundation depth of 600 to 750 mm grouted with CC mixture of 1: 2:4. Telescopic insertion of columns. Length of insertion is 1 to 1.2 m. wall at plinth- 2' x 9" concrete wall erected all sides with plaster. 9. Gutter of GI at 3.5 to 4m height. Top height 5.65m to 6.15 m. and complete automatic fertigation system etc. 10. Bay width 8m with centre truss support; column width at 4m intervals.	16 No. Complete set
5.	**Shed net :** **Specification:** **Approx area –** 1000 Sqm. (500 Sqm each). Shed net squire system of 50 % and 75 % nylon green mesh separately with drip, fogger and sprinkler etc. Insert GI pipes of 50 NB Class- B or equivalent section to have foundation depth of 600 to 750 mm grouted with CC mixture of 1: 2:4. Telescopic insertion of columns. Length of insertion is 1 to 1.2 m. at plinth. 2' x 9" concrete wall erected all sides with plaster and wiring as required for connecting fogger and sprinklers etc. to main electrical supplies.	2 Nos. Complete

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Terms and conditions

1. Rates quoted should be FOR Pusa (Samastipur) inclusive of transportation, packing, forwarding and Insurance etc. University will not make any payment of transportation, Insurance or any other charges.
2. Sale-tax / VAT should be indicated separately.
3. Supplier should mention their Sale Tax / Vat No & Income tax No.
4. Excise duty, if any, should clearly be indicated. If included in the cost, the excise duty component should be indicated separately, as the university is exempted from imposition of excise duty for certain goods, for research and teaching purposes.
5. The firms should enclose photocopy of ISO certificate.
6. The quotation should be submitted in a sealed cover separately in two bid system namely (A) Technical bid and (B) Financial bid duly super scribed "Quotation for the construction of Green house" to - Associate Director Research, R.A.U. Bihar, Pusa Samastipur - 848 125.
7. The rates quoted shall be valid for 90 days from the date of opening of quotation.
8. University reserve the right to reject / cancel any or all quotation received without assigning any reason.
9. In case of supply order the date of delivery as specified in the supply order purchase order should strictly be adhered to otherwise, University will have full right not to accept the delivery in part or full.
10. Payment will be made through account payee Bank Draft only after supply and successful installation as well as demonstration of green house/ Poly house/Shed net etc.
11. Technical bid must consist of the flowing :
    A. Catalogue to be enclosed.
    B. VAT No. / TIN No. should be mentioned clearly.
    C. List of user / purchaser with detail address should be enclosed with the quotation.
12. The area of planning may be increased or decreased depending upon the requirement.
13. In case of any dispute, the matter shall be referred to the Vice-Chancellor, R.A.U., Pusa Samastipur Bihar being sole arbitrator, whose decision shall be final and binding on both the parties. Selection of the firm to whom the work shall be assigned will be done on the basis of its expertise and performance of the last 4-5 years. If necessary, a brief presentation may also have to be made before the experts / Committee members as constituted by the Vice-Chancellor R.A.U. Bihar, Pusa (Samastipur).
14. Rate for centralized automatic fertigation system should also be quoted.
15. Rate for Computer based fertigation system should also be quoted.

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