



Document for

**Fabrication of Insect Proof Net House in Indo-Israel Centre
of Excellence for Citrus and Pomegranate under the Indo-
Israel Agricultural Project situated at Sidhpur, Block
Dharampur District Mandi (H.P)under MIDH**



Implementing Agency

**DEPARTMENT OF HORTICULTURE
HIMACHAL PRADESH**

Centre of Excellence for Citrus and Pomegranate (COE) under MIDH

1. Introduction:

Himachal Pradesh (HP), State Horticulture Mission is partnering with the INDO-ISRAEL Agricultural Project (IIAP) establishing a Centre of Excellence for Citrus & Pomegranate.

INDO-ISRAEL Centres of Excellence (CoE) in HP aims to be an advanced/intensive agriculture farm for knowledge transfer of Israeli Agro-Technology tailored to the local conditions. CoE aims to benefit farmers with a focus on selected key crops. The CoE will be established on two different sites, where site 1 will be dedicated to the nursery management & training facility, site 2 will be dedicated to the demonstration block.

The CoE will be comprised of Nursery management, Best practices Cultivation techniques, Irrigation & fertigation. Sustainability- IIAP aims to develop into a self-sufficient platform in the aspect of HR, accumulated knowledge & operating capabilities. The CoE acts as a meeting point for Academy, Government and farmers to cooperate towards fruitful achievements.

The **establishment of Centre of Excellence** for Citrus & Pomegranate will go a long way in improving the economy of the farmers. The proposed Centre of Excellence will be focused on producing high quality planting material, trainings, demonstration of Israeli Agro-technology including the introduction of new varieties.

It is necessary to have this Centre of Excellence for Citrus & Pomegranate to display and popularize advanced horticultural technology for further commercialization amongst the farmers of the State with the help of Israel's expertise to the relevant field.

2. Project Objectives:

- I. Nursery management: Production of high quality and large quantity of planting material to benefit the farmers.
- II. Demonstration:
 - New varieties:
New Indian varieties will be identified and demonstrated.

Israeli varieties that exist in India in another places, will be demonstrated, the new Israeli varieties will be discussed between all the stakeholders later on and finalized to import.

- Irrigation: will be demonstrated on the daily basis plant requirement. In addition, a small farm holder demonstration also will be implemented to benefit the small farmers.
- Fertigation: specialty fertilizers (water soluble) fertilizers will be demonstrated.
- Plant protection: demonstration of plant protection management (to identify the challenge & solution as well) will be implemented.
- Precision Agriculture: effective irrigation & other components based on the satellite imaging will be demonstrated.

- III. Developing protocols/guidelines& tailored to the local conditions in the CoE& farmer’s field as well
- IV. Generating knowledge for best agricultural practices.
- V. Knowledge transfer: Progressive farmers to identify the farmers that will adopt the technology& set example for rest.
- VI. Training: CoE to execute farmer’s training programs in large numbers based on the different aspects & areas of activities that will be demonstrated in the CoE.

3. Scope of work

The fabrication firms/ agencies/ service providers are required to do the work of Insect Proof Net House construction and fabrication as per the recommended specifications including micro irrigation systems i.e. drip and fogger assembly as per specifications mentioned. The Departmental officers of the respective areas will visit the proposed site before the construction and will recommend the design and orientation of the Insect Proof Net House.

Brief Description of work	Delivery location
Insect Proof Net House 14000 sqm. of different sizes and Screen House 1000 sq. m Total 15000 sq. m	Centre of Excellence for Citrus and Pomegranate Sidhpur, Dev. Block Dharampur, District Mandi H.P.

The above dimensions are indicative and may vary as per actual field location.

4. Technical Specification of Insect Proof Net House Structures

I. Mother Block / Progeny Orchards/Budwood Orchards For Citrus and Pomegranate

Sr.No.	Item	Specification
1.	Structure	Insect Net House-Tubular Structure
	Size	1250 sq.m x 4 no. units (2no. for each Citrus & Pomegranate) Total= 5000 sq. m
	Design/shape	Hut/ Dome, able to fix SS mesh in future
	Structure	Made of Hot dip galvanized GI tubular or equivalent section
	Withstand to wind velocity	Structure should withstand wind velocity up-to 104 Km/hour, and 120 km/ hour in high wind velocity zone
	Entry- Room	Entry-room of size 4 m x 3 m attached to net house
	Door	Polycarbonate/polythene sheet door with 1.0 m widths and 2 m height and another door of 1.0 m x 2 m box section frame are embedded inside for the strength.
	Foundation member	GI Pipes 2.6mm thickness compatible with columns, length 1.2m
	Main Column	Size 76 OD, Thickness 2.6 mm,
	Arc/ Trusses	GI pipes-size 48/43 OD/thickness 2mm, Rafter/members 33/32mm OD/2mm thickness,
	Purlins	GI pipes-size 48/43 OD thickness 2mm, length-4m members – 33/32mm OD/2mm thickness,
	Corner/Hockey/ other members	Size 60 OD, Thickness 2.6 mm,
	Four Way Pipe Couplers	Size 42 OD, Thickness 2 mm, Wt. per length 0.15 kg, length-0.15 m
	Five Way Pipe Couplers	Size 42 OD, Wt. per length 2.30 kg, Thickness 2 mm, length-0.15 m
	Nut Bolts	Size 3/8"
Grid Size	8 x 4 m with 2 m hockey on 4 side	
Gable length	4.0 m	
Centre Height	Hut/dome type structure center height 4.5 to 5m, side height 3m with 48mm truss, 33mm truss member and 42mm purlin	

2.	Covering material	Insect Net manufactured from 100% virgin HDPE UV stabilized monofilament with 140-145 GSM, 0.22 yarn dia, 40 x 40 knitting grid with threeyear life warrantee. To be fixed on roof & all four sides.
3.	Profile	C type GI profile to fix net to the structure by means of self-tapping screws. Weight of GI profile is 200-220 gm/meter. Self-Drilling Screw be fixed on profile every 40 cm along the full length of the profile
4.	Spring Insert	A coated spring is preferable compared to cold galvanized spring as a coated spring transfer less heat to the plastic and thus enhances the life of the plastic If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. Wire material should be high carbon spring steel with spring action.
5.	Shade Net	Mono-Mono Shade Net 50%, minimum as top is dome top.
6.	Drip irrigation/ fogging System	Drip irrigation and fogging system as per area of the structure and plantation along with automated Micro Irrigation System.
7.	Head Unit Water storage :/	PVC 2000 Lt. (Placed on raised platform) Filter : disc filter with flushing Pump: As per design Rating Kirloskar/CRI/ Shakti/ Crompton) Pipe & Fitting: All necessary PVC pipes 40-75 mm, valve/fixtures as required. Accessories: Control valves on each group
8.	Civil work/ foundation	Embedding vertical poll/pipe of structure Cement concrete 1:2:4 block of size 35 x 35 x 80-90cm, subject to revision as per requirement of site.
9.	Skirt Wall	9" brick wall up to 1.0 m with 10cm PCC base duly plastered and painted.

II. Technical Specification Insect Proof Net House For

Citrus Nursery Production (Primary Stage)

HIGH TECH PRIMARY NURSERY

Sr. No.	Items	Specifications
1.	Product	Hi-tech Screen House (Primary Nursery)
2.	Size	1000sqm
3.	Structure Type	Gothic Structure
4.	Bay / span size	4.2 x 10.0 M
5.	Center height	4.5 M
6.	Side Height	3.0 M
7.	Structure	Complete structure made of hot dip galvanized steel tubular pipes, ± 2 mm
8.	Column	3.0 mm thick 60x60mm
	Trusses	2.6 mm thick, 48x48mm
	Runners	2.6 mm thick, 32x32/ 38x38mm
	Truss member/ other supports	2.6 mm thick, 32x32/ 38x38mm
9.	Entrance room and door (2 Nos)	Size 2.5 x 2 m (L x W) provided and covered with Poly carbonate UV stabilized sheet. Door of size 1m wide and 2m height, swing/ sliding type
10.	Roof covering	With 8 mm thick triple layer U.V. stabilized poly carbonate sheet to be fixed with aluminum special PC fixture section and steel screws. All joints of the sheet sealed with silicon sealant to avoid leakages.
11.	Ridge vent / Roof Vent	Butterfly type: The roof vent should be located at ridge (roof top) along the structure length and operated by a motorized rack and pinion system. The vents have an opening span of 60-75cm each side. The vents will be covered by 40 mesh insect proof nets. The opening of the vents is controlled by the climate control system.
12.	Side covering	With double glazing stainless steel (SS 304) wire mesh (outer side 60 mash and inner side 80 mesh) to be fixed with 2mm aluminum plain profile
13.	Roof Net Screen	Raised net screen with motorized collapsible arrangement UV stabilized shade net 50% (Green colour)
14.	Thermal Screen	50% Aluminate inside poly house at gutter height with motorized spreading / folding system with speed control device
15.	Micro fogging system	Nozzles : Micro foggers 4 way hanging type Water Discharge : 28 LPH each nozzles Spacing : 2.5 x 3.0m Lateral pipe : 16 mm LDPE black

16	Micro sprinkler system	Sprinkler system with rotor type and automation. Discharge: 70-100 L/H Lateral pipe: LLDPE black as per design requirement, PVC pipe, connectors etc. Complete as per design requirements along with automation.
17	Head Unit	Water storage: PVC 2000 lt. (Placed on cemented platform) Filter: sand + disc filter with flushing Pump: As per design ISI, Star Rating Kirloskar/CRI Crompton/Texmo) Pipe & fitting: All necessary PVC pipes 40-75mm, valve/ fixtures Accessories : Control valves on each group
18	Exhaust Fans	Providing & installation of 5 Nos. 1050mm dia axial fan fixed on side wall as per direction
19	Desert Air Coolers	Industrial air cooler fitted with 600mm dia heavy duty fan and cross flute celdex pads, submersible pump, 220-240V/50 Hz circulate water on pads 6 Nos.
20	Lighting	20 Nos LED flood lights
21	Environmental control unit:	Digital, microprocessor based for temperature and humidity and programmable photoperiod control
22	Electric Fitting	ISI mark and copper wire complete for lights, coolers and fans and other miscellaneous use as per requirement
23	Civil work/ foundation	Embedding vertical poll/pipe of structure Cement concrete 1:2:4 block of size 35 x 35 x 80-90cm, subject to revision as per requirement of site.
24	Skirt Wall	9" brick wall up to 1.0 m with 10cm PCC base duly plastered and painted.
25	Plastering	All exposed wall plastered with CM 1:5
26	Floor	Filling with 75mm thick murrum/ sand and 75mm thick stone aggregate or Laying of weed mat on entire floor and bed made form dry bricks on edge to support poly bags 4 row in each bed

III. Technical Specification Insect Proof Net House For Citrus Nursery Production

SECONDARY STAGE

Sr.No.	Item	Specification
1.	Structure	Insect Proof Net House-Tubular Structure
	Size	2000 sqm = 2 no. Total= 4000 sqm
	Design/shape	Hut/ Dome,
	Structure	Made of Hot dip galvanized GI tubular or equivalent section
	Withstand to wind velocity	Structure should withstand wind velocity up-to 104 Km/hour, and 120 km/ hour in high wind velocity zone
	Entry- Room	Entry-room of size 4 m x 3 m attached to net house
	Door	Polycarbonate/polythene sheet door with 1.0 m widths and 2 m height and another door of 1.0 m x 2 m box section frame are embedded inside for the strength.
	Foundation member	GI Pipes 2.6mm thickness compatible with columns, length 1.2m
	Main Column	Size 76 OD, Thickness 2.6 mm,
	Arc/ Trusses	GI pipes-size 48/43 OD/thickness 2mm, Rafter/members 33/32mm OD/2mm thickness,
	Purlins	GI pipes–size 48/43 OD thickness 2mm, length–4m members – 33/32mm OD/2mm thickness,
	Corner/Hockey/ other members	Size 60 OD, Thickness 2.6 mm,
	Four Way Pipe Couplers	Size 42 OD, Thickness 2 mm, Wt. per length 0.15 kg, length-0.15 m
	Five Way Pipe Couplers	Size 42 OD, Wt. per length 2.30 kg, Thickness 2 mm, length-0.15 m
	Nut Bolts	Size 3/8”
	Grid Size	6 x 4 (m) with 2 m hockey on 4 side
Gable length	4.0 m	
Height	Center height 4 to 4.5m, side height 3m	
2.	Covering material	Insect Net manufactured from 100% virgin HDPE UV stabilized monofilament with 140-145 GSM, 0.22 yarn dia, 40 x 40 knitting grid with three year life warrantee. To be fixed on roof & all four sides.
3.	Profile	C type GI profile to fix shade net to the structure by means of self-tapping screws. Weight of GI profile is 280-300 gm/meter. Self-Drilling Screw be fixed on profile every 40 cm along the full length of the profile

4.	Spring Insert	A coated spring is preferable compared to cold galvanized spring as a coated spring transfer less heat to the plastic and thus enhances the life of the plastic If we are using GI spring it is better to use a two inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. Wire material should be high carbon spring steel with spring action.
5.	Overall slope	1-1.5%
6.	Drip Irrigation	Drip Irrigation system with arrow dripper (pot/bag) as per details: Drip Irrigation system design in such a way to have one dripper in each poly bag with four way drip system. Size of poly bag will be 9" x 6" Poly bag will arrange in Net house, in such a way that 4 bags in one bed up to length. Two laterals in each bed will be required and four way drippers will be arranged at proper distance so that each and every poly bag will be irrigated with separate dripper with automation.
7.	Fogger System	16mm CI 2 lateral must be fixed with GI wire on top and 4 way fogger of 28-30 lph flow rate with low leakage prevention device, should be installed at 2.5m x 2.5m spacing particles size 80-100 micron, PVC pipes, water tank of 2000 L along with automated system.
8.	Shade Net	Mono-Mono Shade Net 50%, minimum 110 GSM plastic as top is dome top.
9.	Civil work/ foundation	Embedding vertical poll/pipe of structure Cement concrete 1:2:4 block of size 35 x 35 x 80-90cm, subject to revision as per requirement of site.
10.	Skirt Wall	9" brick wall up to 1.0 m with 10cm PCC base duly plastered and painted.
11.	Nursery Beds & Pathway	6-9" deep, 1.0m wide nursery bed All the sides of beds will be plastered, Filling of 3" aggregate & coarse sand in beds. Proper drainage should be provided. Cemented pathway between nursery beds submit
12.	Head Unit Water storage :/	PVC 2000 Lt. (Placed on raised platform) Filter : disc filter with flushing Pump: As per design Rating Kirloskar/CRI/ Shakti/ Crompton) Pipe & Fitting: All necessary PVC pipes 40-75 mm, valve/fixtures as required. Accessories: Control valves on each group

IV. Technical Specification Insect Proof Net House

For

Pomegranate Nursery Production

Sr.No.	Item	Specification
1.	Structure	Insect Proof Net House-Tubular Structure
	Size	2500 sqm = 2 no. Total= 5000 sqm
	Shape	Dome Shape
	Structure	Made of Hot dip galvanized GI tubular or equivalent section
	Withstand to wind velocity	Structure should withstand wind velocity up-to 104 Km/hour, and 120 km/ hour in high wind velocity zone
	Entry- Room	Entry-room of size 4 m x 3 m attached to net house
	Door	Polycarbonate/polythene sheet door with 1.0 m widths and 2 m height and another door of 1.0 m x 2 m box section frame are embedded inside for the strength.
	Foundation member	GI Pipes 2.6mm thickness compatible with columns, length 1.2m
	Main Column	Size 76 OD, Thickness 2.6 mm,
	Arc/ Trusses	GI pipes-size 48/43 OD/thickness 2mm, Rafter/members 33/32mm OD/2mm thickness,
	Purlins	GI pipes-size 48/43 OD thickness 2mm, length-4m members – 33/32mm OD/2mm thickness,
	Corner/Hockey/ other members	Size 60 OD, Thickness 2.6 mm,
	Four Way Pipe Couplers	Size 42 OD, Thickness 2 mm, Wt. per length 0.15 kg, length-0.15 m
	Five Way Pipe Couplers	Size 42 OD, Wt. per length 2.30 kg, Thickness 2 mm, length-0.15 m
	Nut Bolts	Size 3/8”
Grid Size	6 x 4 (m) with 2 m hockey on 4 side	
Gable length	4.0 m	
Height	Center height 4 to 4.5m, side height 3m	
2.	Covering material	Insect Net manufactured from 100% virgin HDPE UV stabilized monofilament with 140-145 GSM, 0.22 yarn dia, 40 x 40 knitting grid with three year life warrantee. To be fixed on roof & all four sides.
3.	Profile	C type GI profile to fix shade net to the structure by means of self-tapping screws. Weight of GI profile is 280-300 gm/meter. Self-Drilling Screw be fixed on profile every 40 cm along the full length of the profile

4.	Spring Insert	A coated spring is preferable compared to cold galvanized spring as a coated spring transfer less heat to the plastic and thus enhances the life of the plastic If we are using GI spring it is better to use a two-inch strip of new poly film to be placed over the main plastic in the profile and then lock it with GI profile. This will help in longer life of the plastic as the rusted spring will not directly come in contact with the main plastic. Wire material should be high carbon spring steel with spring action.
5.	Overall slop	1-1.5 %
6.	Drip Irrigation	Drip Irrigation system with arrow dripper (pot/bag) as per details: Drip Irrigation system design in such a way to have one dripper in each poly bag with four-way drip system. Size of poly bag will be 9" x 6" Poly bag will arrange in Net house, in such a way that 4 bags in one bed up to length. Two laterals in each bed will be required and four-way drippers will be arranged at proper distance so that each and every poly bag will be irrigated with separate dripper
7.	Fogger System	16mm CI 2 lateral must be fixed with GI wire on top and 4way fogger of 28-30 lph flow rate with low leakage prevention device, should be installed at 2.5m x 2.5m spacing particles size 80-100 micron, PVC pipes, water tank of 2000 L.
8.	Shade Net	Mono-Mono Shade Net 50%, minimum 110 GSM plastic as top is dome top.
9.	Civil work/ foundation	Embedding vertical poll/pipe of structure Cement concrete 1:2:4 block of size 35 x 35 x 80-90cm, subject to revision as per requirement of site.
10.	Skirt Wall	9" brick wall up to 1.0 m with 10cm PCC base duly plastered and painted.
11.	Head Unit Water storage :/	PVC 2000 Lt. (Placed on raised platform) Filter : disc filter with flushing Pump: As per design Rating Kirloskar/CRI/ Shakti/ Crompton) Pipe & Fitting: All necessary PVC pipes 40-75 mm, valve/fixtures as required. Accessories: Control valves on each group
12.	Nursery Beds & Pathway	6-9" deep, 1.0m wide nursery bed All the sides of beds will be plastered, Filling of 3" aggregate & coarse sand in beds. Proper drainage should be provided. Cemented pathway between nursery bedssubmit.

HIGH TECH MICRO IRRIGATION SYSTEM

Specifications for Installation of Automated Irrigation System

AUTOMATED IRRIGATION UNIT

1. Automation Unit with drip irrigation system for Hi-Tech nursery 1000m², Insect Proof Net House 9000 m², Mother Block/Bud Wood Orchards 5000m², and 35000 sq.m for open field demo fruit crops at COE.
2. It includes irrigation, fertigation, pulse based and EC & PH monitor system etc.
3. Automation unit can be operated by computer system
4. Automatic pump starter facility
5. Having 15 irrigation programs by quantity & time and 10 dosing programs
6. Up-to 32 outputs (Valves Connection) & extendable
7. Weather Station complete in all respect with data storage up to three months with reproducing facility.
8. Automation machine will be designed in such a way that fertigation can be made by both automation and manual operations (Auto-Manual Operation).
9. Solenoid valves and wire (as per field requirement) Solenoid valves will be fixed in the automation room, not in the field.
10. Transparent Plastic tanks of 1000 lt. capacity each for fertigation and acid storage 4 Nos
11. Fertilizer venturi will be three in number. Agitator system in each tank is required
12. Hydraulic valve metal 3" solenoid fertigation valve 3/4", electronic water meter with 1 liter pulse 3", electronic fertigation meter 3/4" (5 in number) & 3/4" disc filter. Filter Flushing.
13. Fertigation system and PC communicating unit and cables
14. All the electrical cables, electrical fittings, electrical panels, earthing etc.
15. Facility to back flush the filter on time/differential basis (Auto)
16. One computer (Laptop/ Desktop) attached to automation unit with PC communicating unit and cables and pre-installed software for control and data acquisition etc.

Automation to be designed in a way, so as to irrigate/ fertigate in case of control of main pump failure

Fertigation Stages Calibration Requirements:

1. Fertigation
2. Water after fertigation
3. Water before fertigation
4. Time based, volumetric or proportional fertigation can be selected for irrigation line.

Protection mechanism required:

1. Complete system halt during low pressure
2. Short circuit detection for solenoids valves
3. Water and fertilizer leakage prevention system
4. High and low flow detection and elimination system.
5. Detection and elimination of endless consecutive flushing cycles
6. Online UPS for smooth operations and protect of fertigation machine.
7. Three phase controller/ triple relay for connecting fertigation machine and pump.
8. Servo stabilizer of 1.0 Kw for smooth operation and protection of fertigation machine

All drip lines will be pressure compensatory.

Foggers Requirements:

Fogger system 4way anti leak foggers, 28 lph with droplet size 50-100 micron (3-4 kg/cm²) 16 mm LLDPE laterals, PVC pipes, Pumps, screen filters etc. (Complete).

Drip irrigation:

1. The inline drip irrigation system with 2/4/8 lph discharge pressure compensatory (as per requirement) for mother block & open field
2. Drip Irrigation system with arrow dripper (pot/bag) as per details: Drip Irrigation system design in such a way to have one dripper in each poly bag with four-way drip system.
3. Size of poly bag will be 9" x 6" Poly bag will arrange in Net house, in such a way that 4 bags in one bed up to length.
4. Two laterals in each bed will be required and four-way drippers will be arranged at proper distance so that each and every poly bag will be irrigated with separate dripper

Head Unit:

1. Automatic Disc filter with continuous online cleaning based on inlet and outlet pressure difference or time.
2. Sand filter
3. Hydro cyclone filter
4. Pressure Relief Valve with pilot

5. Kinetic Air Release Valve
6. Glycerin filled pressure gauge
7. Fertigation unit-ventury Manifold
8. By Pass Assembly
9. Manifolds & Fittings etc.
10. Pressure switch (4 to 20 ma) along with bushing

Pump: As per design Rating Kirloskar/CRI/ Crompton/Shakti

PVC-Manifold

1. PVC pipe 40-110 mm, 4-6Kg/Cm²
2. PVC –Fittings etc.

Drip Manifold PC

1. Lateral 16 mm, 2.5 Kg/Cm²
2. PVC Tube
3. Aqua net Valve
4. Air Release Valve
5. Flush Valve 63 mm
6. Extension Tube
7. Fittings & accessories necessary
8. Joiner

Automation Room

Size 15' x 20' required with RCC roof slabs & proper air crossing and ventilation, door, electrical fitting (fan, light and other points)

5. General Conditions

- The Service Provider will start the construction work of Insect Proof Net House and will supply the material as per the specifications laid down for that particular type of net house.
- The Service Provider will complete the construction work within the time period specified by the concerned Dy. Director of Horticulture/Subject Matter Specialist (Hort.) or as per bid document.
- The Service Provider will take a trial run of all the structure including micro irrigation systems and then only handover the structure to the Department/COE.
- The Service Provider must mandatorily handover an “operational manual of functioning of the Insect Proof Net House systems” to the Departmental officials and obtain a satisfactory certificate from the Department.
- Insect Proof Net house structural design should be sound enough to withstand wind speed of 130 km/hr.
- The Service provider should submit its structural design and the same should be got verified from the structural engineer or the technical committee as the proposed work is based on functional requirement and field experience.
- The firm should guarantee for free maintenance/damage to the structural material at least for two years.
- The technical and financial bid should be submitted by the bidder in two separate sealed envelopes. The financial bid will be opened of the technically responsive bidders only. The bidder found technically non responsive will not be evaluated for financial bids.

6. Duration of the Contract

The contractor should be able to complete the awarded works within a period of 90 days starting from the date of signing of the contract agreement. The duration of work may be extended under unavoidable circumstances as may be deemed appropriate by the Dy. Director of Horticulture, Mandi.

7. Final Decision Making Authority

Dy. Director of Horticulture, Mandi Himachal Pradesh reserves the right to accept or reject any or all bids (Document for Technical Eligibility) application at any point of time without assigning any reason or incurring any liability to the application. In case of any dispute arising on various grounds, the decision of the Director of Horticulture, H.P. will be final and binding.

8. Technical Document (tender) fees

A complete set of bid document can be downloadable from the website <http://www.hpagnosisnet.gov.in/hpagnosis/Horticulture/> and Rs. 9000/- non-refundable fees shall be paid in the form of Demand Draft in favour of Dy. Director of Horticulture, Mandi district Mandi H P, payable at Mandi on the submission of the Document.

9. Contract Terms and Conditions:

- I. The L1 Bidder has to submit signed copy of contract terms and conditions on Rupees 100/- Non judicial Paper/ Stamp Paper duly attested within 21 days of award of contract. service provider will furnish a warranty on the material/ components/equipment's of Insect Proof Net House constructed for a period of five years from the date of completion of the project.
- II. The bidder will provide the on-site post installation repair and maintenance services for a period of at least two years.
- III. The service provider will replace any component damaged during the warranty period due to any manufacturing defects.
- IV. If any instrument or component gets broken or damaged during the fabrication of the Insect Proof Net House/ Screen House, same will be replaced by the service provider before handing over the structure to the CoE.
- V. The rate quoted should be inclusive of all taxes like GST or any other charges as may be applicable.
- VI. Technical Bids shall be opened/evaluated by the Technical Committee constituted by the head of the department.
- VII. Financial Bid of the technically responsive bidders only shall be opened for further evaluation.
- VIII. The bids received after the due date and time specified for their receipt shall not be considered and will be rejected summarily.
- IX. The technical committee as notified by the Director of Horticulture, H.P. will physically inspect the material before the release of payment.
- X. The bid document will form the part of contract agreement.
- XI. Release of Payment- The payment will be released to the firm after verification by the committee as under:
 - 10% advance payment upon receipt of signed contract agreement and performance security within 15 days.
 - 80% payment will be released within 15 days of completion of the awarded works.
 - 10 % payment will be released within one month of handing over the operationalized Insect Proof Net Houses.

- XII. Performance security: The EMD of the non L1 bidders will be returned immediately after declaration of L1 and EMD of the L1 bidder will be returned within 1 week of signing of contract agreement and submission of performance security of amount equal to 10% of the contract amount in form of FDR or BG duly pledged in favour of Dy. Director of Horticulture, Mandi H.P.
- XIII. Validity of Bids: The bid will be valid for a period of 365 days.

10. Qualifying Criteria for Technical bids:-

- I. The Bidder will have to qualify technically based on the eligibility criteria. The documents to be submitted showing fulfillment of eligibility criteria are given in Annexure-1 & Annexure-2.
- II. The manufacturer should be a Public sector undertaking/ Public/ Private Entrepreneurs/ Agencies/ MSME (proof to be enclosed as per Annexure-3).
- III. The bidder should have executed 10-15 Green House /Poly House/Screen House/ Shade Net House in Govt Institution.
- IV. The bidders should be in the business of Insect Proof Net house/Screen House/Poly house manufacturing / fabrication / supply, installation and maintenance for a minimum of two years period.
- V. The bidders should have minimum fabrication experience of 10,000 sqm Insect Proof Net House / Poly House in Himachal Pradesh or 10.00 Crore average annual turnover for the last 3-4 years. The fabricator should have the technical background. and will give a presentation for about 5-10 min regarding his technical expertise and proper maintenance of Insect Proof Net houses before committee. The bidder should also provide the list of Insect Proof Net houses established in the farmer's field/Institute/ department (10,000sqm) (As proof)
- VI. The bidder has to be profitable and should not have incurred losses in the last 2 consecutive financial years (2018-19 & 2019-20) Certified copies of Trading Account, P&L or Balance Sheet by CA may be attached.
- VII. The firm should not be blacklisted by any Central Govt./ State Govt./ PSU/ Govt. Bodies (Certificate signed by the Authorized signatory).
- VIII. The bidders should have supplied to Government sector/Public Sector Undertaking/Semi-Government Organization/ private sector and meeting major specifications parameters and functioning satisfactory in India for the last 2 years (Attach proof).
- IX. The firm should be prompt in offering After Sales Service, resolving complaints and replacement, if required. (under taking in this regard to be enclosed).
- X. Copy of the PAN No./GST No./ Service tax registration must be submitted/
- XI. The bidder has to submit ITRs for three preceding years.
- XII. The firm should have ISO 900:2015, ISO 1400:2004, OHSAS 18001:2007 certification.

11. Financial Bid: -

- I. The contract shall for the full quantity as described.
- II. All duties, taxes and other levies payable shall be included in the total price.
- III. GST in connection with the sale shall be shown separately.
- IV. The prices quoted should be in Indian Rupees.
- V. Prices must be offered on the prescribed enclosed Performa/Format.
- VI. The manufacturer should quote model-wise rates.

12. Evaluation of bids:-The committee constituted will evaluate and compare the bids determined to be substantially responsive as per the criteria laid down in the bid document.

13. Technical Bid: -Technical bid will be opened in respect of those bidders who have uploaded the bids as per the eligibility as mentioned. Tenders shall be scrutinized and evaluated by the technical committee of experts with reference to parameters and specifications prescribed in the Tender Document. During the bid opening, the tender opening committee will check the salient technical features of the tenderers like detailed description of the material offered by the tenderers, specifications as mentioned and other documents as specified. The technical committee can ask for any clarification/ document/ demonstration during the technical evaluation.

14. Financial bid/Price tender/BOQ: - It shall contain financial bid/BOQ uploaded in.xls or.xlsx format which will be available for bidders on website <https://hptenders.gov.in>. The financial bid/BOQ will not be accepted in physical form. At the time opening of tenders, financial Bid/ BOQ will be opened only of those bidders who qualifies Technical bids.

Sd/-

Dy. Director of Horticulture

Mandi District Mandi H.P.

Ph.: 01905-236095

Email: dd-horti-man@hp.gov.in,

horticulturemandi@gmail.com

Annexure-1**Company Profile**

Sr. No.	Particular	Detail
1	Name of Organization	
2	Nature of the Organization	
a.	In case of Public/Pvt. Ltd(Certified copy of Certificate of incorporation for companies & Memorandum and Articles of Associations	
b.	In case of Proprietorship (Registration certificate, Factory registration, DIC industrial registration)	
c.	In case of society (Certified copy of registration deed with objects of constitution of society)	
d.	In case of Corporation (Authenticated copy of the parent statute)	
3	Head Office Address - with Phone/Fax No., email IDs	
4	Address of regional/zonal offices in H.P.	
5	Name and contact detail of the Authorized Person	
6	Any other details in support of your office	
7	PAN/TIN/CST-GST (attached attested copy)	
8	List of authorized persons of the company and their qualifications	
9	Year of establishment of the company	
10	Any other, relevant information	

Checklist for fulfillment of eligibility criteria

Sr. No.	Criteria	Documents/Detail required	Documentary proof attached(Y/N)
1.	Minimum 10 (Ten) years of experience in the field of Insect Proof Net House/Green House and High Tech Micro irrigation System installation and maintenance.	Certificate of incorporation, Business commencement certificate, works to be demonstrated by Contract/Agreement/ work Order from clients showing experience	
2.	The bidders should have minimum fabrication experience of 10,000 sqm Insect Proof Net Houses in Himachal Pradesh or 10.00 Crore annual turnover for the last 3-4 years.	The bidder should also provide the list of Insect Proof Net House established in farmers' field/ Govt. Institutions. (As proof)	
3.	Minimum Annual Turnover for each year in the last two financial years	i) Chartered Accountant certificate showing Minimum Annual Turnover of the agency in last 2 years clearly indicating the Turnover from construction activity of Greenhouse/net house/poly house.	
4.	The service provider should have its own manufacturing/ fabrication/ assembling facility.	Factory registration, DIC registration, list of machines and equipment available with company. OR UNDERTAKING	

Annexure-3

1. All MSMEs notified as per GFR 2017 Clause no.1.10.4 and as notified below shall be exempted from payment of Tender Document Fee and Bid Security / Earnest Money Deposit. For claiming this exemption, MSE must, along with their offer, provide proof their being registered as MSE (indicating the terminal validity date of their registration) for the item tendered, with any agency mentioned in the notification of Ministry of MSME, indicated below: -
 - (a) District Industries Centers;
 - (b) Khadi & Village Industries Commission;
 - (c) Khadi & Village Industries Board;
 - (d) Coir Board;
 - (e) National Small Industries Corporation;
 - (f) Directorate of Handicraft & Handloom;
 - (g) Udyog Aadhar Memorandum issued by Ministry of MSME or
 - (h) Any other body specified by the Ministry of MSME.
2. For planning the above exemption for start-ups, a valid certificate of start-up recognized by 'Department of Industrial Policy and Promotion (DIPP)' along with Business Eligibility Certificate or any other Document issued by Govt./ recognized institute is required in support of product/ service item being tendered.

Bill of Quantity (BOQ)

Sr. No.	Description of Work	Unit	Area of Insect Proof Net House (15000 sqm)
1.	Rate as per specification	In Figure(Rs)	
		In Words(Rs)	
2.	GST to be shown separately	In Figure(Rs)	
		In Words(Rs)	
3.	Any other taxes/ duties	In Figure(Rs)	
		In Words(Rs)	
Total Cost			