Andhra Pradesh
Horticultural University

ANDHRA PRADESH HORTICULTURAL UNIVERSITY
VENKATARAMANNAGUDEM, TADEPALLIGUDEM
WEST GODAVARI DISTRICT.

BID DOCUMENT
FOR
SUPPLY AND ERECTION OF INTEGRATED PACK HOUSE WITH PRE-COOLED AND COLD STORAGE UNITS FOR HANDLING FRUITS AND VEGETABLES ON TURN-KEY BASIS
AT
RAJENDRA NAGAR AND
V.R.GUDEM, NEAR TADEPALLIGUDEM

ANDHRA PRADESH HORTICULTURAL UNIVERSITY
ADMINISTRATIVE OFFICE, VENKATARAMANNAGUDEM,
TADEPALLIGUDEM Telephone :08818-222192

Tender Notice No:	5/ APHU / 09
Date of Commencement of DOWN LOADING OF THE BID DOCUMENT	: 23.05.2009 from 4.00PM
Last date for receipt of bids.	: 28.05.2009 3.00PM
TIME AND DATE OF Presentation of Detailed Project Report and opening of Price bid	: 30 .05.2009 at 11.00 AM at Teachers' Home, Boiguda Sec'Bad
ADDRESS FOR COMMUNICATION	The Estate officer i/c APHU, Rajendra Nagar Hyderabad Ph.No: 040 – 24015315 & Tech., P.A. to Estate Officer, APHU, Rajendranagar, Hyderabad – 500 030

The tender document containing terms and conditions for the execution of this project along with specifications and EMD to be paid is appended.

TERMS AND CONDITIONS

I) The location of the plants are 1) Rajendranagar, Hyderabad & 2) Venkataramannagudem, Near Tadepalligudem, West Godavari District (A.P)

II) The required land and power connection will be provided by the A.P. Horticultural University and the bidder has to carry out all the work from foundations of the building to supply and erection of machinery and electrical equipment, successful trial run and maintaining the plant for 12 months including all maintenance and running cost, duly rectifying all defects during the above period, at the cost of bidder. During the construction electrical consumptions charges and water for construction is the look out of the agency/ bidder.

III) The bidders are also required to furnish their experience certificate along with details of previously erected plants with that of same specifications.

IV) The designs for civil engineering structures should be done by the agency to withstand the earth quake forces of the relevant zones and got approved by the competent authority of APHU.

V) The civil Engineering construction work and erection of machinery must be carried out as per the standard specifications under the supervision of Executive Engineer, APHU, Rajendranagar and has to be got certified by him , duly handing over all warranty certificates for the machinery and electrical equipments.

VI) The defect liability period for the plant will be 24 Months, an amount equal to 7.5% will be withheld from the running bills and released after defect liability period.

VII) Price Bid for each plant must be specified separately and inclusive of :

1) Supply, erection of all machinery on Turn Key basis.
2) Construction of Building/ Shed as per the standard specification to suit the technical specification mentioned here under.
3) Maintenance and running cost of the plant for one year from the date of successful trail run including rectifying all defects.
4) All taxes and duties to be paid to the Government and furnish all the bills for the equipment.

VI) The bids should be submitted with in time specified at the office of Estate officer along with EMD for an amount of Rs.1,00,000/- (Rupees One Lakh only) in the form of crossed D.D. drawn in favor of The Comptroller, APHU, Venkataramannagudem,

Tadepalligudem payable at Andhra Bank/ any nationalized bank, Tadepalligudem. All offers without earnest money deposit will be rejected.

VIII) The specifications and other conditions prescribed in Annexure – A of this Tender shall also be treated as part of these tender document for all purposes.

IX) A lightning arrestor of suitable size and capacity with all accessories should be supplied and erected over the building.

X) Terms of Payment:

1) Upon completion of foundation of the building	10% of the project cost.
2) Upon completion of the civil structure	20% of the project cost.
3) Upon supply & erection of the total equipment	40% of the project cost.
4) After successfully trial run of the unit	22.5 % of the project cost.
5) After completion of two year defect liability period.	7.5 % of the project cost.*

***7.5% will be released 6 Months after completion of the work against Bank Guarantee submission for the balance period.**

Infrastructure to be provided under the Project @ each place at Rajendranagar and V.R.Gudem (Total 2 Units)

S.No	Major Provisions	No. of Items		
I	**Pack house pre fabricated structure (18 mtsx19 mts)**	1		**Tender offer must be on Turn Key basis for the integrated pack house for fruits and vegetables (I a to e)**
a	Cold Storage Rooms 4.5mx4.5m -2 nos (3MT)	2		
b	Pre-Cooling Chamber 4.5mx4.5m (2 MT)	1		
c	Ripening Chamber 4.5mx4.5m (2MT)	1		
d	Packaging & Grading Hall for Fruit and Vegetable Handling 18.0 mx10.0m (1MT/Hr)	1		
e	Office ,lab, Change, room store etc. 18.0mx4.5m	1		

ELIGIBILITY CRITERIA:

The Bidder should fulfill the following minimum eligibility criteria and must also submit documentary evidence in support of fulfillment of these criteria while submitting the technical bids. Claim without documentary evidence will not be considered. Consortium/ Joint venture shall be allowed for maximum Two agencies for implementation of the project. The eligibility criteria and documentary evidence required are as follows:

Sr. No.	Eligibility Criteria	Documentary Evidence to be attached
1	The Bidder should have a minimum annual turnover of Rs. 2.5 crores (Rs. Two point five crores only) in Agro Industries cold chain for the last five financial years ending March, 31st,2008.	Audited financial statements duly certified by chartered accountant for the last Five financial years ending March, 31st, 2008. Copies of Purchase orders duly certified or CA certificate who has audited the Balance Sheet indicating turn over during the year from

		Agro Industries cold chain.
2	The Bidder should have executed at least one similar project/work more than Rs.2.5 Crores on TURNKEY BASIS or two projects of at least Rs. 1.50 crores each on TURN KEY BASIS in the last Five years.	Certificate from the project client for award of contract and stage of satisfactory project completion (in terms of value) in original or its notarized copy for each project claimed to be submitted.
3	The Bidder should submit a solvency certificate toAPHU from banker for a minimum value of Rs 1.25 crore.	Solvency certificate to APHU from the Nationalised/ Schedule Bank.

The APHU reserves the right to verify the claims made by the Bidder and to carry out the capacity assessment of the bidder and the APHU decision shall be final in this regard.

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TECHNICAL SPECIFICATIONS

PRE ENGINEERED BUILDING:-

Pre engineered buildings to be erected as pack house, shall have civil works, structural steel works, insulated panel works, plumbing, electrical works as detailed bellow

Note: - Drawing enclosed is to be used as reference.

CIVIL WORKS:-

Excavation; VRCC Footings, Plinth beams, Pedastals; Fillings with gravel or quarry dust and floorings are considered civil works. A complete brick wall(burnt clay/fly ash) for Office, Lab, Change rooms, store area and where ever required is also part of civil works. The specifications of civil works shall be as per APSS & IS 456 specifications for such works.

STRUCTURAL WORK:-

Steel Structural columns, Portal frames or trusses may be incorporated for high wind velocities up to 200 Kms /hr and also to withstand the earth quake forces of the relevant zones. The roof purlin and runners shall be placed at a distance of 1.2 Mtr to enable direct fixing of roof profile sheets Galv aluminium of thickness 0.5mm and proper designs must be made for structural stability and got approved by the competent authority. The fixing shall be with self drilling, self tapping screws of HILTI. End walls are also to be covered with roof profile sheets above false ceiling level. Flooring in the work hall area shall be 80mm PCC (1:4:8) Prop. and finished with polished Kadappa stone/shabad stone and brick masonry in .CM (1:6) Prop. (for all external walls).

WALLS & CEILINGS:-

A) Cold store area – All walls & Ceiling is to be insulated with PUF sandwich panels 80 mm thick.

B) Work hall / Processing hall: - false ceiling is to be with 60 mm thick PUF sandwich panels.

C) Office, Lab, Toilets & Store area walls are to be with 230 mm brickwork &cement plaster as per ASPSS & IS 456 specifications. Floor finishes are vitreous tiles, user areas of toilets and lab shall be with Non skid ceramic tiles. Toilets fittings and fixtures are to be of best quality and ISI make. Walls shall be paint finished with plastic emulsion paint. All plumbing and electrical lines are to be concealed in walls –False ceilings shall be provided with 40 mm PUF sandwich panels.

D) The building and services shall conform to national codes of construction and shall be certified and accepted by the University Engineer or Estate officer.

(1) COLD STORE NO 1&2 (Refer to the drawing)

CAPACITY EACH: 3MT fruits & vegetables,
ROOM SIZE: L4.5XW4.5XH3.6 Metres. Allowing space between stacks of crates for Respiration and ventilation.
Refrigerator CAPACITY: 7kW(Allowing for high RH conditions).

ROOM CONDITION: 0 TO 15 Deg. C RH 80 to 95%.

PUF PANEL THICKNESS & FINISH (ALL WALLS & CEILING): 80mm PUF minimum 0.5 mm/PP GI sheets on both sides with galvanization to 180.

INSULATED DOOR: Door of dimension 900 x 2000 mm, flush with panels with automatic door closing mechanism and posi-seal closure should be part of the door fixtures. The door should match the thickness of panel.

FLOOR INSULATION: 40mm X2 bare PUF slab, with tar felt waterproofing and PCC (1:2:4) Prop. finish.

POWER SUPPLY: 415/3/50 Hz.

HUMIDIFIER**:** The Humidifier shall be Electrode type Steam humidifier. It should consist of open able PVC cylinder & SS electrodes. The unit should be operable in high humidity as well as dry cooling mode. It shall be provided with steam Hose & mixing nozzles. Humidity should be controlled by electronic RH Controllers**.**

Type: Steam Type

Cleaning: Auto flush back for self cleaning
Electrodes: SS
Power supply: 220/1/50 Hz or 415/3/50Hz
. Central pump not mandatory as the capcities are small.

(2) PRE COOLING CHAMBER :

CAPACITY: 2MT Fruits & Vegetables.
ROOM SIZE: L4.5XW4.5XH3.6 Metres.
REF.CAPACITY: 22Kw.
ROOM CONDITION: 2 to 15 Deg. C, RH 80 to 95%.
PUF PANEL THICKNESS& FINISH (ALL WALLS & CEILING): 80mmPUF minimum 0.5 mm /PP GI sheets both sides with galvanization to 180.
INSULATED DOOR: Door of dimension 900 x 2000 mm, flush with panels with automatic door closing mechanism and posi-seal closure should be part of the door fixtures. The door should match the thickness of panel.
FLOOR INSULATION: 40mmX2 bare PUF slab, with tar felt waterproofing and-80mm PCC (1:2:4) finish.
POWER SUPPLY: 415/3/50Hz.

(3) RIPENING CHAMBER EQUIPMENT (2MT).

ETHYLENE GENERATOR with an option of Ethylene **gas emission system** specification should be incorporated. Adjustable ethylene gas emission levels to enable ripening of various fruits.
CO2 VENTILATION SYSTEM: Motorised with Damper fan units for fresh air and Exhaust air for CO2 flushing out.
Switching system: Timer based.
CAPACITY: 2MT of Fruits (Banana, Papaya, De green of Orange etc.).
ROOM SIZE: L4.5MXW4.5MXH3.6 Meters.
REF.CAPACITY : 10.5Kw.
ROOM CONDITION: 14 to 22 Deg. C RH 80 to 95%.

PUF PANEL THICKNESS & FINISH (ALL WALLS & CEILING): 80mmPUF/minimum 0.5 mm /PP GI sheets both sides with galvanization to 180.
INSULATED DOOR: Door of dimension 900 x 2000 mm, flush with panels with automatic door closing mechanism and posi-seal closure should be part of the door fixtures. The door should match the thickness of panel.
FLOOR INSULATION: 40mmX2 bare PUF slab, with tar felt waterproofing and 80 mm PCC finish.
POWER SUPPLY: 415/3/50Hz.
Panel should be provided for indicating the levels of Ethylene.

Refrigeration system (For Fruit ripening Chamber)
The Refrigeration system shall consist of independent unit for ripening chamber. The air- cooled condensing units shall be of weather proof enclosure and suitable for exposed installation outside cold room/ pre cooling room. The pre cooling unit shall be floor mounted type and the air cooling units in cold store shall be of ceiling suspended arrangement. The units shall be designed for automatic operation with microprocessor based system for the maintenance of the specified temperature and relative humidity.

Condensing units: (Coldrooms/Precooler/Ripening Chamber).

a) Reputed make hermetically sealed or semi sealed reciprocating compressor working on eco friendly HFC/ HCFC.
b) Air cooled condenser with copper tubes and aluminium fins (coated) complete with propeller fans and motors. Condenser shall be liberally sized,considering the ambient temperature of 45 degree C.
c) Liquid receiver of adequate capacity, with filter drier and sight glass.
d) Base frame for mounting the compressor and condenser assembly.
e) H.P./L.P. cut-outs and pressure gauges with gauge board and piping.
f) Material & Construction –MS/CRC Powder coated paint finish.

Evaporator Unit (Ripening chamber)
The unit shall be ceiling mounted type and shall be complete with cooling coil, fan, motor, pan and defrost water tray. The casing and the pan shall be made from stainless steel SS304 sheets. The cooling coil shall be of seamless

copper tubes 16mm OD(5/8")/S.S. tubes with aluminum fins (coated) and pressure tested pneumatically at 20 kg/ square cm.
The fans of air cooling units shall be propeller type with external rotor motors for power saving. Fan shall be protected by finger guard. Variable frequency drive shall be provided for fan speed control to match with produce respiration rate during ripening
Humidification nozzles with solenoid valve and humidity controller shall be provided as separate arrangement in the ripening chamber.

EQUIPMENT TECHNICAL SPECIFICATIONS:

Evaporator Unit (Pre-cooler)

Casing –The unit shall be suitable for operation on eco friendly HFC/HCFC refrigerant, and of floor mounted type.
The casing shall be of 3 mm FRP skins with PUF insulation and precoted/SS sheets. All structural members, pipe connections etc. shall be of SS304 only.
Evaporative Coil- The evaporative coil shall be made of seamless copper tubing, made into tube bundle and immersed in bottom water tank, where water is chilled.
Test Pressure - 20 kg/ square cm. pneumatic (Nitrogen).
Heat Exchanger-specially designed polypropylene heat exchanger offering a high contact surface between the air and chilled water in a counter flow arrangement, drift eliminators in PVC to be provided to arrest water carryover in air stream.
Water Spray System-This shall incorporates PVC pipe headers with low pressure non-clogging nozzles provided at 150 mm Centres. The Unit shall have the water sump tank at bottom with water inlet, outlet, and make up overflow and drain connection.

Fan-The fan shall be axial type with cast aluminium /S.S. impeller in aerofoil design statically & dynamically balanced. The air flow shall be minimum 8000CFM at 50 mm static pressure. Air movement shall be suction type from fruit stack and top discharge out of unit.The casing shall be SS304 only.

The fan motor shall be TEFC squirrel cage type with class 'B' insulation and conforming to IS- 325 / 1978 with IP- 55 protection. The motor shall be of SIEMENS/ NGEF/KIRLOSKAR make.

Humidifier –The unit should be operable in high humidity as well as dry cooling mode. Dry cooling mode shall have required pump interlocks are to be provided to each cold room where mixing nozzles are to be installed. Solenoid valves in each room will operate system in tandem with electronic RH Controllers.

Refrigeration Piping, Fittings & Valves(Installation Standards-General)

The piping shall be of refrigeration quality seamless copper tubes and the valves shall be brassomatic / Henry or equivalent make. The piping shall be include accessories such as filter, drier, sight glass, heat exchanger, suction line accumulator etc. Adequate number of supports shall be included for pipe installation pipe shall be insulated with

preformed sections of pipe insulation material. The suction air discharge lines shall be designed for a maximum pressure drop corresponding to 1.1 deg.C drop in saturated evaporating and condensing temperatures. The liquid line shall be designed for maximum pressure drop corresponding to a drop 0.5 to 1deg. C in saturation temperature. The piping shall be designed with proper shape in the direction of Refrigerant flow and proper oil. Return to the compressor and should be installed with adequate supports to avoid undue vibration. The piping should be thoroughly cleaned as per standard practice prior to installation
Suction line insulation with 50 mm thick EPS covered with 0.6 mm thick aluminium cladding /25 mm thick EPDM insulation / XLPE with proper sealing of joints and factory backed aluminium foil as per standard practice.
(a) Water piping for Pre- cooling AHU complete with with fittings, valves as necessary for supply from a common point near machine room.
(b) Drain piping with rigid PVC pipe from A.C. units to outside the machine rooms complete with 'U' Traps and supports.
Controls and Instrument as follows:
(a) Thermostatic expansion valves DANFOSS/ SPORLAN / MANIKS Make for Pre - cooling, Cold store and Ante – room.
(b) Digital temperature indicator cum controller (0 to 50 deg. C range) for pre - Cooling, Cold Store and Ante - room.
(c) Liquid line solenoid valves DANFOSS / MANIKS / SPORLAN make for pre - cooling, Cold Store and Ante - room.
(d) Digital RH indicator and controller (0 to 100 % range) for pre - cooling, Cold Store and Ante - room.
First charge refrigeration gas and oil etc. as required upto commissioning and handing over of plant.
Painting for equipment, piping etc. as per standard colour codes
Miscellaneous Items
a) Vibration isolators for condensing units etc.
b) Minor structural openings in walls / panels etc for piping, cabling etc. and finishing.
Electrical work for Refrigeration System
Electrical control panel cubical type, dust and vermin proof copper bus bars and suitable for 400 / 440 Volts, 3 phase, 50 C/s A.C. supply and incorporating the following:
a) Incoming MCCB 160 A
b) Earth leakage current ELR and suitable ELCB
c) MCBs and starters for condensing units, air handling unit, ACUs in cold stores, ante room
d) MCBs for control circuit
e) MCBs as spare

f) MCBs for capacitors
The control panel shall have provision for interlocking of various equipment as per standard practice.
Power wiring with ISI approved PVC insulated copper conductors with supports, cable trays etc to be laid on walls / trenches / under the ceiling. as required as per drawings approved by Consultants.

Insulated Panel Structure(For Cold Storage and Pre-Cooling)

This would cover supply of PUF insulated sandwich panels only with CFC free Polyurethane insulation of 40 ± 2 Kg/m^3 density with internal metal skin of galvanized Steel with plastic coating and external metal skin of galvanized Steel duly painted with corrosion resistance paint. The panel shall be approx. 1180 mm width and shall have required lengths to suit height of the cold store. The joints shall have metal / HIP cam lock or tongue & groove joint arrangement. The scope of work shall cover all other ancillary material such as angles, metal sections, flashing, sealant, vapour barrier, adhesive and all other hardware for fixing the panels with the civil structure and pressure balancing ports as per requirement. The ceiling panels shall be supported on the panel walls and shall have additional support as necessary from the trusses / purlins of the main roof. In case the ceiling panels have joints, it should have supporting member below of the joints. The wall and ceiling insulation thickness shall be with 80 mm PUF.

Door Specifications (For Cold storage and Pre-Cooling):-

Door shall be of Standard dimension of w900xh2000mm and should be fitted on panel opening. Automatic door closing mechanism and positive-seal closure should be part of the door fixtures. The door should match with the thickness of the wall panel. The door panel shall be hinged to door frame and line panel will rise while opening to prevent bottom gasket from scraping on floor.

Floor Insulation(For Cold Storage, Pre-Cooling and Ripening Chamber)

The floor insulation shall be done with bare PUF slabs as per conventional method as follows:

a. Coat of bituminous primer on the clean surface of PCC followed by coat of bitumen @ 2 Kg/m^2.
b. Fixing of 0.5mm Gauge Polythene sheet with 150mm overlapping with 225mm extension on walls.
c. Fixing of first layer of insulation with bitumen and joints sealed with hot bitumen followed by second layer with staggered joints sealed with bitumen.
d. Covering 2 Ply tar felt with overlaps with extension on walls. (Further flooring treatment shall be as per civil works specification.)
e) Finish top layer by 80 mm PCC (1:2:4) and a final finish of epoxy paint.

Fresh air cooling system for work hall

Fresh air shall be introduced in the work hall through an evaporative air cooling unit. The unit casing and water tank shall be of stainless steel, and shall have fresh air filters of 10 micron capacity at air intake. The cooling pads shall be honey comb design cellulose pads of 200 mm thickness and 3.3 Sq. Mtrs area.

The casing, covers, and access doors shall be gasket sealed to prevent mosquito entry or breeding. The fan shall be of 15000 CFM capacity at 40mm static pressure in order to maintain positive pressure in the work hall. The fan construction shall be in G.I.

The air duct shall be made from PE material (Nylon material) and washable. The duct shall be hung from wire rope at ceiling level and shall have 10 air outlets of size 300x 200 mm for uniform air distribution in the work hall.

6 Nos-Exhaust air fans are to be mounted at high level of external walls of work hall each of 1200 CFM capacity.

Water pump shall be suitably sized for water spray over the cooling pads. Provision shall be made in the electrical controls to have independent operation of fan and pump.

Door Air curtains & Strip curtains:

All external doors are to be provided with air curtains. Doors of cold rooms, Precooling room and Ripening chamber are to be fitted with strip curtains.

Electric Fly Killers

6 nos. Fly/insect killers are to be provided in the work hall to eliminate flies.

4) Packaging & Grading line for Fruit and Vegetable Handling(1MT/Hr)

Tecchnical specification

a) Flat belt conveyor with variable speed:

Length	3000 mm
Width	600 mm
Shaft	250 mm
Drive	1.00 kW (1.00HP)
MOC	M.S POWDER COATED.

Chute both side for wastage clearance Provision for Inspection Lights

b) **Washing machine:**

Tank Length: 3000 mm

Width: 1000 mm

Height: Adjustable

Main belt: Link belt with cleats.

Spray Nozzles: Set of 50 nozzles on headers above main belt for spray washing.

Agitator and pump: SS 304 pressure pump with filter for agitation in water and for spraying above main belt.

c) **Washing machine with Hot water treatment:**

Tank Length: 3000 mm

Width: 800 mm

Height: Adjustable

This should be adjustable to 52 degree centigrade for two to four minute speed with heating element and thermostat.

d)Air Drier & Waxing unit :

Length: 5000 mm

Width: 600 mm

Height: Adjustable

Dewatering sponge rollers 100mm foam

Drive :1.5 kW

Body and structure SS 304 frame work

Heating Electric heater

Drive: 0.5 kW

VFD Suitable VFD for speed variation

Wax spray nozzles

Blower for Drying

Intermediate belt conveyor facilitating simultaneous / individual operations with mechanical weight sizer and radial grading machine:

The intermediate conveyor shall have width of 1000 mm and may be also used for manual sizing and grading for certain fruits and vegetables.

e) RADIAL GRADING MACHINE- One No

1. Number of grades: 3
2. Number of cross belts: 3
3. Width of cross belts: 400 mm
4. Total length of machine: 3000 mm
5. Total width of machine: 1230 mm

6 Pitch of chain: 80 mm

7. Chain is galvanized.
8. Machine has special grease system for the chain.
9. Maximum grading size 103 mm
10. Minimum grading size 23 mm
11. Frame is galvanized after that, painted with two coats of paint.
12. Material of rollers : Stainless Steel
13. Diameter of rollers : As per requirement.
14. Speed of the roller bed : As per requirement.
15. Engine : 0.75 kw
16. Rollers are fitted with frequency Control

CROSS BELTS

1. Length standard : 250 cm
2. Belt is double thick PVC
3. Belts have two guide liners
4. Frame and rollers are galvanized
5. Motor: 0.75 KW
6. Belts have double inlay
7. Belts are easy to assemble
8. Shaft: 25 mm

f) Mechanical weight sizer with take out belt conveyer

S.No.	Description	Size & Specification
1.	Quantity	1 No.
2.	Length	2500 mm Elevator – 7500 Sizing length

3.	Width	800mm
4.	Sizer cup type	200mm (8”)
5.	Pulling member	38mm (1.5”) conveyor chain with spigot pin z two raw MOC:AISI 304
6.	Sprocket Head / Tail	20mm (3/4 “) Pitch x 26 T welded hub MOC: AISI 304
7.	Lanes	2Nos.
8.	Accuracy	± 3gms
9.	Weight sizer sites	5 X 2 (Each lane Five cups for weighing)
10.	Capacity	1000 kg/Hour
11.	Drive Unit	Motor: 0.5 HP/1440 RPM/3PH/Flanged mounted Gear box: VF 49 worm reduction gearbox
12.	Finish	All stainless steel parts should be mate buff finish.

g) TAKE OUT BELT / DISTRIBUTION BELT

S.No.	Description	Size & specification
1.	Quantity	5 nos.
2.	Length	12000mm
3.	Width	Suitable to sizer machine
4.	Pulling member	3mmPVC top Food grade polyester cord / Cleat on every 300 mm of 80mm h
5.	Head & Tail Pulley	90mm Dia MOC: AISI 304
6.	Drive	Common drive between two belt
7.	Drive Unit	Motor: 0.5 HP/1440 RPM/3PH/Flanged mounted Gear box: VF 49 worm reduction gearbox
8.	Finish	All stainless steel parts should be mate buff finish.

Annexure – A
(General Conditions)

Submission of Tender and Deposit of earnest money

1. Quoted rate should be written legibly in ink or type written. No alterations should be made to any of the terms and conditions of the tenders by scoring out, altering or overwriting; similarly no alterations are permitted in the rates quoted by them. No alterations will be allowed after this Office receives the tender. Ambiguity must be avoided in filling the tenders. However, any corrections etc., made will have to be duly attested with dated signatures and official seal. The tenders not complying with these conditions will be rejected summarily.

2. Qualified Tenderer is required to deposit an amount of @ 2 1/2% of the quoted amount including the earnest money deposit (EMD) when once the tender is finalized with the university by a crossed Demand Draft/BG on any Nationalised/Scheduled Bank in favor of The Comptroller, APHU,Venkataramannagudem Tadepalligudem.

   a) Request for adjustment of pending bills/deposits, if any, towards earnest money / security deposit will not be entertained.

Note: Cheques, Government securities (stock certificates, bearer bonds, promissory notes, cash certificates etc.,) will not be acceptable.

3. The tenders not conforming to the prescribed terms and conditions of the Horticultural University or conditional Tenders or Tenders which cannot adhere to the prescribed time schedule are liable for rejection.
4. Pre Bid meeting will be held at Teacher's Home, Bhoiguda, Secundrabad .AP.

Validity of rates and other Conditions

1. The defect liability period for the Equipments shall be given for 24 months or more from the date of installation. In the event of any correction or defects or replacement of defective material done during this period, it should be corrected/ replaced at the cost of the bidder/ agency.

2. Bids shall remain valid for a period of 90 days from the date of opening of the bid prescribed. In exceptional circumstances, the University may solicit the bidder's consent for an extension of the period of validity. The request and response shall be made in writing / cable / telex / fax / e-mail.
3. The validity of the tender will extend for a period of three months from the date of placing the initial order and it shall be open to the APHU to place the orders with the suppliers on the same rates, terms and conditions for any additional quantities likely to be recurred during that period.
4. The bidders shall submit the technical bid and price bid in separate covers and kept in a single cover.
5. The inner and outer envelops shall bear the following address:

   The Estate Officer,
   APHU,Rajendranagar,
   Hyderabad.
6. The inner envelopes should also contain the name and address of the bidder.
7. Telex, cable, e-mail or facsimile bids will be rejected.
8. Bidding Documents must be received by the University at the address specified not later than the time and date specified in the invitation (Notification) for bids. In the event of the date specified being declared as a holiday for the University, the bids will be received up to the appointed time on the next working day.
9. The Bidder's representatives who are present shall sign in the register evidencing their attendance.
10. During evaluation of bids subsequent to opening, the University may at its discretion, to ask the bidder for clarification of its bid. The request for clarification and the response shall be in writing and no change in the bid will be entertained.
11. The evaluation of the bid will take into account, the past experience in addition to the bid price. Such price should include all duties and taxes to be paid or payable on components of equipment.
12. The bidder have to present the project on power point presentation to Works Committee on the following.
    a) Prefabricated structural design
    b) Details of material specification
    c) Equipment specification
    d) Operation and maintenance

Acceptance of tenders

1. Price bids will be opened after compeletion of power point presentation in the presence of such tenderers who are qualified in technical bid as may be present. A decision with regard to acceptance of tender will be taken as soon as possible.
2. The successful tenderer (s) will be intimated by letter (s) or other means of communication and the tenderer (s) so informed shall be bound from the time of transmission of such acceptance by the University. Formal acceptance of the tender (s) will be forwarded to successful tenderer (s) in due course but it will serve merely as a confirmation of the initial information and shall not effect the time from which the offer is/are is bound by the contract(s).
3. The University is not bound to accept the lowest quotations. Any or all the quotations may be rejected without assigning any reasons. It reserves the right of acceptance in whole or part of the offer made. The decision of the Andhra Pradesh Horticultural University in the matter shall be final and binding on the tenderers.
4. Successful tenderers shall execute an agreement in accordance with the terms and conditions of APSS.
5. The tenderer should submit user list for the last five years including for turn key basis projects involving fresh fruit and vegetable handling equipment.

TENDER EVALUATION:

The evaluation and comparison of the bids shall be done for the technical as well as financial aspects.

a) Technical Bid Evaluation:

While power point presentation, The Works committee shall have the right to verify the claims of experience made by the bidders, based on the bid evaluation, only technically qualified bidders shall be short listed (power point presentation). The financial bid of only technically qualified Bidders shall be opened.

b) Financial Bid Evaluation:

The total cost of the project (landed cost) quoted by the bidder would be considered for financial bid evaluation.

Works Committee:

1) The Works committee shall do the above evaluation. The committee shall determine the approach and methodologies for the issues, which may arise during the above, referred evaluation process and their decision is final. The decision of the committee to reject or accept shall be final and binding on all the bidders.

2)The successful bidder shall be responsible for training of the working personnel of APHU for the operation and maintenance of the entire plant for at least 14 days. Further for a period of one year from the date of commissioning and trial run, the bidder shall deploy at least one experienced person for advising any doubts regarding operation and maintenance besides troubleshooting when ever required.

3)The bidder may submit separate quotation for comprehensive maintenance contract for one year from the date of expiry of initial one year.

Other contractual obligations

1. The contract shall not be deferred/ modified except by written consent by both the APHU and the Bidder and the HotriculturalUniversity shall not in the absence of the specific written acceptance be bound by any provision of the supplier's quotations, offers etc., which purport to impose conditions, at variance with this contract.
2. The Bidder shall not sublet or delegate this contract or part thereof without the written consent of the Horticultural University. Such consent shall not, however, be withheld unreasonably.
3. The Bidder shall keep confidential all matters concerning this contract and comply with all reasonable security requirements. All drawings, blocks, specifications, manuscripts, samples etc., supplied by the Horticultural University and all copies thereof shall be returned to the University when their use is terminated. In no event, the Bidder shall permit publicity concerning this contract without prior consent of the Horticultural University.
4. No undertaking or commitment given by or made by any officer of the University verbally or in writing does not have any validity unless it is signed again by the authority competent who concluded an agreement earlier.

5. The agreement is to be concluded by the bidder who has signed the tender document only.

Inspection and packing

1. At a reasonable time during production and prior to dispatch of processed material, the Bidder shall afford and secure for the representation of Horticultural University at every reasonable access and facility at the plant or premises for its inspection and making of usual tests on behalf of the Horticultural University, if so desired.
2. a) The Bidder shall furnish the Horticultural University, on request, a report from time to time on the progress of processing of fruits and vegetables. Any delay or anticipated delay will be reported at once together with the full reasons therefore.

   b) The insurance should be done at the cost of Bidder as the rate quoted is all-inclusive for door delivery at the Post Harvest Lab/or at any other place indicated at the time of placing order.

Processed material/ goods should be as per specification

1) The decision of the University, however, shall be final as to the quality of supplies received and binding upon the Bidder . In case, the supplier(s) supplies any other article other than what is ordered, such article supplied, not being approved, shall be liable to be rejected.
2) Should the University require any changes in specifications, the supplier shall use his best endeavor to comply with university's wishes subject to fair fixation of prices and delivery schedule where appropriate.
3) If at any time during the term of this contract, the plans of the university changes for any reason, the university shall have the right to terminate or alter this contract by sending fifteen days notice to the Bidder by registered letter. In respect of such of the material which is complete and ready for dispatch, within thirty (30) days of such notice, the university agrees to accept deliver there of at the contract price and terms.

Consequence of non-supply and damages

1. All risks of loss, damage or depreciation to Equipment shall be upon the supplier until the material is delivered at the addresses specified and in accordance with the provision of the contract. Till the material is received at the respective destination indicated by the university, the property continues to be at the risk of the Bidder The mere fact that the material is delivered to transporter is no defense to the Bidder and the Bidder will be squarely held responsible for any delayed receipt of the material by the University or for loss or damage of any kind to the material in transit.
2. Assuming that the bidder fails to deliver any or all the material covered by the contract, the Horticultural University reserves the right in addition to other legal remedies, to cancel the contract or any portion thereof and hold the Bidder liable for all damages sustained by the university by virtue of the Bidder failing to perform the contract and consequent cancellation of the contract.
3. In the event of the supplier (Bidder) failing to complete the supply in time or according to the approved specifications, the university reserve the right to make such arrangements as it may think fit for the completion of the supplies on account of and at the sole risk of the bidder.

4. The time allowed for delivery of goods shall be deemed to be the essence of the contract. In case the goods are not delivered within the stipulated period, the university reserves the right to recover the liquidated damages @ a sum equal to 2% of the contract price of the undelivered material per week subject to a maximum of 5% of the value of undelivered material. The University also reserves the right to cancel the purchase order in case supplies are delayed beyond the scheduled date of delivery and to make such arrangements as it may think fit for the completion of supplies on account and at the risk of the suppliers (s). The additional expenses thus incurred together with the consequential losses and also the liquidated damages shall be recovered from the supplier out of his / their security deposit / earnest money deposit and any other amount due to him / them. The balance still, if any, payable by the supplier shall be paid by him/them within 7 days of notice by the Andhra Pradesh Horticultural University

FORFEITURE/REFUND OF THE EARNEST MONEY DEPOSIT (EMD)

1. In case the selected Tenderer(s) does not supply the infrastructure and equipment at the quoted rates within the period of contract and commits any breach of any one or more of these terms and conditions, the Earnest Money Deposit deposited by the Tenderer (s) will be forfeited.
2. Earnest Money of the unsuccessful Tenderer (s) shall be refunded within three months from the date of decision regarding the tenders. No interest is payable by the University on such deposit.

3. The Earnest Money and Security money deposited by successful Tenderer (s) shall be retained by the Horticultural University till three months after the expiry of the contract period
4. On due performance and satisfactory completion of the order in all respects during the contract periods, the Earnest Money Deposit (Security Deposit) will be refunded to the Contractor(s) without interest within a period of 3 months with effect from the date receipt of a request to this effect from the Bidder .
5. The Security deposit at 7 ½% will be recovered from the bills of bidder and will be refunded after expire of defect liability period of Two years.

SETTLEMENT OF DISPUTES

1. Any difference or dispute arising out of or in connection with this tender or acceptance thereof or the contract that may be entered in consequence thereof, shall be decided by arbitration. The Chairman of the Works committee for purchase of the equipment, A.P.H.U. Horticultural University or his nominee shall be the sole arbitrator and the arbitrator’s decision shall be final and binding on the parties. The Tenderer(s) will have no objection to such appointment on any ground whatsoever including that such nominee, in his official capacity dealt with this matter at any stage.

2. The parties hereby agree that in the event of any dispute no cause of action shall arise in their favor to approach any court unless they have restored to and exhausted the remedy of arbitration as envisaged above.

3. The parties also do hereby agree that the contract envisaged by these terms and conditions shall be deemed to have been entered

into at Hyderabad and the courts at Hyderabad alone will have jurisdiction to try and legal proceedings which may arise out of this contract. Neither party shall file any proceedings in any other Court.

ANDHRA PRADESH HORTICULTURAL UNIVERSITY

TADEPALLIGUDEM: VENKATARAMANNAGUDEM: W. GODAVARI DIST – 534 101.

TENDER NOTICE

NIT.No: 05/APHU/EO/TW/A EE/09-10 **Dated:29-04-09**

Competitive Bids are invited from the reputed firms to *Supply and Erection of integrated pack house with pre-cooled and cold storage unit for handling fruits and vegetables on Turn Key Basis at 1) Rajendranagar, Hyderabad and 2) Venkataramannagudem, Near Tadepalligudem, West Godavari District (A.P).* The detailed specifications and drawings along with terms and conditions of supply are displayed in the web site.

www.aphu.edu.in

or contact Estate Officer / Tech. P.A. to Estate Officer, Phone: 040 – 24015315, 040-24015011 Ext. 451.

ESTATE OFFICER