



Agricultural Development Trust's  
Centre of Excellence for Hydroponics at KVK, Baramati  
At/Po- Malegaon Khurd, Tal-Baramati,  
Dist.-Pune 413115 Maharashtra State,  
Phone: (02112) 255527, 255327 Fax-255227



Website: <http://www.kvkbaramati.com>

E-mail: [kvkbmt@yahoo.com](mailto:kvkbmt@yahoo.com)

## Centre of Excellence for Hydroponics, Baramati

*Installation, commissioning with hand holding & technical support for Fan & Pad Type Polyhouse (PART-I Tender) & Installation of Hydroponics systems, Vertical Farming, Aeroponics, DWC, Grow Tower (Vertistack) & Grow light System with, Irrigation, automation system for Vegetables Production (PART-II Tender) at CoE for Veg., under the Hydroponics Project. Baramati, Dist. Pune (Innovative Project Under Protected Cultivation)*

**Tender ID: ADT's/CoEH/ 327/2023**

### NOTICE INVITING TENDER



**Address: Project Incharge**

Centre of Excellence for Vegetables & Hydroponics,  
Krishi Vigyan Kendra, Baramati &  
Agricultural Development Trust  
A/p- Malegaon Khurd, Tal - Baramati,  
Dist- Pune – 413115, Maharashtra, India



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**Tender ID: ADT's/CoEH/327/2023**

**NOTICE INVITING TENDER**

Tenders are invited by the Project In charge, ADTs CoE, for Vegetables & Hydroponics, Krishi Vigyan Kendra, Baramati Dist-Pune (M.S.) from reputed firms/ Companies for installation, commissioning, hand holding and technical support for Erection of Fan & Pad Type Polyhouse (**PART-I Tender**) & Installation of Different types of Hydroponics Systems. Vertical Farming, Aeroponics, DWC, Grow Tower (Vertistack) & Grow light System with Irrigation, automation system (**PART-II Tender**) for Vegetables Production at CoE for Hydroponics., KVK, Baramati, Dist. Pune under Centre for Excellence for Vegetables at ADTs, CoE for Vegetables, Krishi Vigyan Kendra and Baramati Dist-Pune (M.S.) India.

The Center for Excellence for Vegetables is an expression and part of an Indo - Dutch Governmental Action Plan to apply Dutch technology in upgrading Indian performances in horticulture practices. The Center of Excellence on Hydroponics under this Centre is as "showcase" going hand in hand with education and training of staff, growers & Development of PoPs of Vegetables Production.

This is an important lead for qualification of candidate companies or consortia. Further, the Project In charge, ADTs, CoE for Vegetables, Krishi Vigyan Kendra Baramati Dist.-Pune (M.S.) prefers companies or consortia of companies, who are able and willing to bear responsibility for the **Center of Excellence on hydroponics** as a whole including the establishment of structures, training of professionals for successful operations and transfer of the expertise and technology. **The tenderer should separately submit the Technical and financial bids of the both Part- I & Part- II Tender.**

Tenders should be submitted in two bid system (Technical- envelope- I & Financial bid-envelope-II) and shall be accompanied by a bid **security worth 1%** of the project cost separately for Part-I & Part- II Tender. If One Tenderer wish to fill up of the both the tenders at that time, please submit both the tenders separately in two bid systems. **Bid Security worth of 1 %** as demand draft only. Cost of tender fees / form is **Rs.15,000/-** (Nonrefundable) separately for PART- I & PART- II Tenders in the form of Cheque in the name of Project In charge, CoE, KVK, Baramati.

Last date for submission of the tenders is **8.9.2023** at 16.00 Hrs IST. The Technical & Financial bids shall be opened on **11.9.2023** at 11.00 Hrs IST in the presence of desirous tenderer(s). Technical and Financial bid should be submitted strictly as per instructions to tenderers. The financial bid of the technically qualified tenderers will be opened at same day. The sealed bid should be submitted by post or by hand and details can be downloaded from website <http://www.kvkbaramati.com> by the due date and time from 21.8.23, as specified in the 'Critical Dates' view of the 'Work Item details' of the tender. The Date & Time as appearing on the website <http://www.kvkbaramati.com> shall only be considered for the critical date and time of tenders.

Project In charge  
CoE, Krishi Vigyan Kendra and  
ADT, Baramati Dist-Pune (M.S.)



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Tender No: ADT's/CoEH/327 /2023

**Tender Notice**

Tender document for Installation, commissioning, hand holding and technical for Fan & Pad Type Polyhouse, Different Hydroponics Systems, Vertical Farming, Aeroponics, DWC, Grow Tower (Vertistack system) & Grow light System with Irrigation, automation system for Vegetables Production at CoE for Hydroponics., Baramati, Dist. Pune

1	<b>Publishing Date</b>	<b>21<sup>st</sup>August 2023 (Monday)</b>
2	<b>Document DownloadStart Date</b>	<b>22<sup>nd</sup>August 2023 (Tuesday)</b>
3	<b>Bid Submission Start Date</b>	<b>23<sup>rd</sup>August 2023 10.00 hrs. (Wednesday)</b>
4	<b>Bid Submission End Date</b>	<b>8<sup>th</sup> Sept.2023 upto 16.00hrs. (Friday)</b>
5	<b>Date and Timefor opening of Tender.</b>	<b>11<sup>th</sup> Sept. 2023 at 11.00 hrs. (Monday)</b>
6	<b>Place of Tender opening</b>	<b>In the Office of:</b> Project In charge ADTs-Centre of Excellence for Hydroponics, Krishi Vigyan Kendra, Baramati & Agricultural Development Trust A/p- Malegaon Khurd, Tal - Baramati, Dist- Pune – 413115, Maharashtra, India

# Centre of Excellence for Hydroponics, Baramati

## PART - II

*Installation of Hydroponics, Vertical Farming, Aeroponics, DWC, Grow Tower & Grow light System with, Irrigation, automation system for Vegetables Production at CoE for Veg., Baramati, Dist. Pune*

### Bill of Quantity

#### Cost Estimate for Installation of Different Types of Hydroponics Systems

<b>Bill To and ShipTo</b>	<b>Quotation No.:</b>		<b>GST No.:</b>
<b>Project Incharge Centre of Excellence for Vegetables (India's First an Indo-Dutch Project) Malegaon Khurd, Tehsil- Baramati, District- Pune, Pin- 413115</b>	<b>Drawing No.:</b>		<b>CIN No.:</b>
	<b>Quotation Date:</b>		<b>PAN No.:</b>
<b>Contact Person: Mr. Yashwant Jagdale</b>	<b>Contact Number:</b>	<b>9623384287</b>	<b>Ref No.:</b>

#### A - Cost Estimate for Filtration Unit with Pump

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Filtration Unit:</b> It consists of Hydrocyclon Filter, Sand Filter, Disc Filter along with its fitting like PVC Elbow, Tee, Valve, Teflon Tape. Filtration System will fill the Fresh Water tank.	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>PVC pipe with Valve:</b> It consists of PVC pipe along with its fitting like PVC Elbow, Tee, Valve, Teflon Tape. PVC pipe line will fill the water tanks of Fogging System and the nutrient tanks of Mixed System	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Water Tank</b> of capacity 3000 Lit X 1 no for Fogging system, 2000 Lit X 1 Nos, 1000 Lit X 6 Nos, 500 Lit X 2 Nos and 100 Lit X 1 No for Nutrient, 50 lit X 22 Nos for Part- A, Part- B & pH down and 10,000 Lit X 1 No for fresh water, 5,000 lit X 2 Nos for RO Unit Before and After Water Tank with all necessary fitting/ connections like tank nipple, tab, valve, union, pipe etc.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
4		<b>Pump-</b> It consists of Centrifugal Pump 1.5 HP with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) A</b>												₹ -

#### B – Cost Estimate for Vertistack System/Grow Tower

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Vertistack System for 108 Vertistacks:</b> It consists of insulated Vertistack Pots, Vertistack Support pipes, Iron Rod, Vertistack Support Tee & Cable. (7 Layer & 4 plants per Layer) (Total Plant Capacity= 3,024 Nos)	108	Set	-	-	0%	-	-	18.0%	-	₹ -
2		<b>Coco-Slab</b> (5 kg Block/ Brick)	150	Nos	-	-	0%	-	-	5.0%	-	₹ -
3		<b>Coco-chips</b> (5 kg Block/ Brick)	75	Nos	-	-	0%	-	-	5.0%	-	₹ -
4		<b>Trellising System:</b> Gear Wire, Turn Buckle, D-Clamp	1	Set	-	-	0%	-	-	18.0%	-	₹ -
5		<b>Pump-</b> It consists of Centrifugal Pump 1.5 HP with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
6		<b>Irrigation System:</b> It consists of PVC Control Valve, Foot Valve, Flush Valve, Air Release Valve, Pressure Gauge, PVC Pipe, Elbow, Tee, Dripper, 4-way adaptor, Tube 6mm, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) B</b>												₹ -



**C - Cost Estimate for Growing Zone – Dutch Bucket System**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Dutch Bucket</b> -Food Grade System 0.31m(W) X 0.25m(L) X 0.23m(H) Plastic Dutch Bucket useful for Wine Type Crops.	470	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>LECA- Light Expanded clay Aggregates</b>	4700	lit	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Trellising System:</b> Gear Wire, Turn Buckle, D-Clamp	1	Set	-	-	0%	-	-	18.0%	-	₹ -
4		<b>Trellising System:</b> Plastic Hook / Clamp	1	Set	-	-	0%	-	-	18.0%	-	₹ -
5		<b>Net Pot:</b> Net Pot of diameter 2"	940	Nos	-	-	0%	-	-	18.0%	-	₹ -
6		<b>Pump-</b> It consists of Centrifugal Pump 2 HP with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
7		<b>Irrigation System for Dutch Bucket:</b> It consists of PVC Control Valve, PVC Pipe, Elbow, Tee, Dripper, Tube 6mm, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) C</b>												₹ -

**D - Cost Estimate for Growing Zone – NFT A-Shape**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>A - Shape NFT Hydroponic System (Vertical NFT 420 Planter):</b> It consists of A Shaped Frame of size 1.49m X 5.6m X 2.5m (W X L X H) for support to the NFT Channels of 6m Length, made of GI square pipe 25mm X 25mm.	6	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 30 nos. of 2-inch diameter for Net Pot.	42	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 36 nos. of 2-inch diameter for Net Pot.	42	Nos	-	-	0%	-	-	18.0%	-	₹ -
4		<b>End Cap W/O Spout:</b> for the NFT Channel Inlets	84	Nos	-	-	0%	-	-	18.0%	-	₹ -
5		<b>End Cap W/Spout:</b> for the NFT Channel Outlets	84	Nos	-	-	0%	-	-	18.0%	-	₹ -
6		<b>Net Pot:</b> Net Pot of diameter 2"	2772	Nos	-	-	0%	-	-	18.0%	-	₹ -
7		<b>Pump-</b> 1.5 HP for Irrigation System with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
8		<b>Irrigation System for NFT A-Shape System:</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Tube 6mm, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) D</b>												₹ -

**E - Cost Estimate for Growing Zone – NFT Flat Bed and NFT Seeding System**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Growing Bench:</b> It consists of Bench Frame of size 1.87m X 5.6m X 0.8m (W X L X H), made of GI square pipe 25mm x 25mm.	7	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 30 nos. of 2-inch diameter for Net Pot.	45	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 36 nos. of 2-inch diameter for Net Pot.	45	Nos	-	-	0%	-	-	18.0%	-	₹ -
4		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 80 nos. of 2-inch diameter for Net Pot.	15	Nos	-	-	0%	-	-	18.0%	-	₹ -
5		<b>End Cap W/O Spout:</b> for the NFT Channel Inlets	105	Nos	-	-	0%	-	-	18.0%	-	₹ -
6		<b>End Cap W/Spout:</b> for the NFT Channel Outlets	105	Nos	-	-	0%	-	-	18.0%	-	₹ -
7		<b>Net Pot:</b> Net Pot of diameter 2"	4170	Nos	-	-	0%	-	-	18.0%	-	₹ -
8		<b>Pump-</b> 1.5 HP for Irrigation System with Cable for Flat Bed System	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
9		<b>Pump-</b> 0.5 HP for Irrigation System with Cable for Seeding System	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
10		<b>Irrigation System for NFT Flat Bed System and NFT Seeding System:</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Tube 6mm, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) E</b>												₹ -

F - Cost Estimate for Growing Zone – NFT Rack System (Grow Light)

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Growing Rack:</b> It consists of Bench Frame of size 1.25m X 3m X 2.8m (W X L X H), made of MS L-Slotted Angel 50mm x 50mm. Aluminium Box Strip 12mm X 25mm.	2	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>NFT Channel:</b> Food grade, Lead free NFT Channel of Trapezoidal Shape of length 3m, Openable Lid with pre-punch Cavity/Hole- 15 nos. of 2-inch diameter for Net Pot.	100	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Grow Light</b> 0.04mX1.2mX0.04m (W X L X H)	120	Nos	-	-	0%	-	-	18.0%	-	₹ -
4		<b>End Cap W/O Spout:</b> for the NFT Channel Inlets	100	Nos	-	-	0%	-	-	18.0%	-	₹ -
5		<b>End Cap W/Spout:</b> for the NFT Channel Outlets	100	Nos	-	-	0%	-	-	18.0%	-	₹ -
6		<b>Net Pot:</b> Net Pot of diameter 2"	1500	Nos	-	-	0%	-	-	18.0%	-	₹ -
7		<b>Pump-</b> 1 HP for Irrigation System with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
8		<b>Irrigation System for NFT Rack System (Grow Light):</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Tube 6mm, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) F</b>												₹ -

G-Cost Estimate for Growing Zone – Seedling System

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Seedling Bench:</b> It consists of Frame of size 1.2m X 2.4m X 0.8m (Width X Length X Height) made of GI square pipe 25mm x 25mm, with <b>Big Tray</b> (1.2mX2.4m) for Seedling.	8	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>Pump-</b> 1 HP for Irrigation System with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Irrigation System for Seedling Benches:</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Tube 6mm, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) G</b>												₹ -

H – Cost Estimate for Growing Zone – Aeroponics System

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>Aeroponic Bench</b> 1.3m X 6m X 1.5m (W X L X H) - (1 Layer) It consists of MS Slotted Angle or GI Square Pipe 25mm x 25mm with 1.6mm thick., Nut Bolt	8	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>PVC Sheet for Aeroponic Tray</b> of size 0.6m X 2.4m X 0.3m	64	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Net Pot:</b> Net Pot of diameter 2"	2120	Nos	-	-	0%	-	-	18.0%	-	₹ -
4		<b>Pump-</b> 2 HP for Irrigation System with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
5		<b>Irrigation System for Aeroponics System:</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) H</b>												₹ -

I – Cost Estimate for Growing Zone – DWC System (Deep Water Culture)

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		<b>DWC Stand and Pond Liner:</b> It consists of Bench Frame of size 1.25m X 12.3m X 0.22m (W X L X H), made of GI square pipe 25mm x 25mm.	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
2		<b>PVC Sheet for Aeroponic Tray</b> of size 1.25m X 12.3m X 0.22m	14	Nos	-	-	0%	-	-	18.0%	-	₹ -
3		<b>Net Pot:</b> Net Pot of diameter 2"	1100	Nos	-	-	0%	-	-	18.0%	-	₹ -
4		<b>Pump-</b> 1.5 HP for Irrigation System with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
5		<b>Irrigation System for DWC System:</b> It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Timer, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) I</b>												₹ -

**J – Cost Estimate for Growing Zone – Trough System**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		Trough of Size 0.4mX0.2m (Width X height) with HDPE support clip and dori/tie.	12.3	M	-	-	0%	-	-	18.0%	-	₹ -
2		Coco-Slab- (5 Kg- block)	22	Nos	-	-	0%	-	-	5.0%	-	₹ -
3		Coco-Chip- (5 Kg Block)	11	Nos	-	-	0%	-	-	5.0%	-	₹ -
4		Trellising System: Gear Wire, Turn Buckle, D-Clamp	1	Set	-	-	0%	-	-	18.0%	-	₹ -
5		Trellising System: Plastic Hook / Clamp	1	Set	-	-	0%	-	-	18.0%	-	₹ -
6		Pump- Centrifugal Pump 0.5 HP with Cable	1	Nos	-	-	0%	-	-	18.0%	-	₹ -
7		Irrigation System for Trough System: It consists of PVC Control Valve, PVC Pipe, Elbow, Tee, Dripper, Tube 6mm, fittings like Teflon Tape, Solvent.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) J</b>												₹ -

**K - Cost Estimate for Automation Unit**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		Customize Nutrient Dosing System: It consists of KitW/EC & pH Probes (7 Nos), PSU, Sample Pot (7 Nos), Peristaltic Pump (21 Nos) of capacity 3x300ml/min Electrical Panel Board: - It consist of Cabinet box, Timer for Fogger pump and Irrigation pump, Contactor, MCB, MPCB, Cable- 1.5mmX2 Core for ACF, Cable- 2.5mmX3 Core for Pump of fogging System and Irrigation Pump System.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
2		Fitting & Accessories: It consists of fittings like Cable, Board, Sockets, Submersible Pump, Pipe.	1	Set	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) K</b>												₹ -

**L - Cost Estimate for Consumables (Considered for 1<sup>st</sup> Crop Cycle of all hydroponics system)**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		Nutrient: New Advanced 2-part nutrient for fruits and vegetables.		Nos	-	-	0%	-	-	18.0%	-	₹ -
2		pH Up		Nos	-	-	0%	-	-	18.0%	-	₹ -
3		pH Down		Nos	-	-	0%	-	-	18.0%	-	₹ -
5		Sticker		Nos	-	-	0%	-	-	12.0%	-	₹ -
6		Neem Oil	15700	Nos	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) L</b>												₹ -

**M - Cost Estimate for Civil Work, R.O. Unit, Water Chiller, Generator and Utility Material**

Sr. No.	Code	Particulars	Qty.	Unit	Rate (Rs.)	Amount	Disc.	Disc. Amount	Net Amount	GST Rate	GST Amount	Total Amount (Rs.)
1		Water Chiller 1 Ton	3	AU	-	-	0%	-	-	18.0%	-	₹ -
2		RO Unit 1000 LPH	1	AU	-	-	0%	-	-	18.0%	-	₹ -
3		40 Kva Cummins Diesel Generator	1	AU	-	-	0%	-	-	18.0%	-	₹ -
4		Civil Work like pump foundation, filtration and RO unit foundation, entry room, foundation and excavation for nutrient tank etc.	1	AU	-	-	0%	-	-	18.0%	-	₹ -
5		Utility Material like sticky pad, lux meter, Hanna EC and pH meter, Vibrator, Co2 Meter, Weighing Balance and other material etc..	1	AU	-	-	0%	-	-	18.0%	-	₹ -
<b>Subtotal Amount (Rs.) M</b>												₹ -

## Cost Summary

Sr. No.	Particulars	Amount	Discount Amount	Net Value	GST Amount	Total Amount (Rs.)
A	Filtration Unit	-	-	-	-	₹ -
B	Growing Zone- Hydroponic System-Vertistack System - 104 SQM (Total Plants - 3,024 Nos)	-	-	-	-	₹ -
C	Growing Zone- Hydroponic System-Dutch Bucket System - 208 SQM (Total Plants - 940 Nos)	-	-	-	-	₹ -
D	Growing Zone- Hydroponic-NFT A-Shape System - 104 SQM (Total Plants - 2,772 Nos)	-	-	-	-	₹ -
E	Growing Zone- Hydroponic-NFT Flat Bed and NFT Seedling System - 104 SQM (Total Plants - 4,170 Nos)	-	-	-	-	₹ -
F	Growing Zone- Hydroponic-NFT Rack System (Grow Light) - 9 SQM (Total Plants - 1,500 Nos)	-	-	-	-	₹ -
G	Growing Zone- Hydroponic-Seedling System - 48 SQM (Total Plants - 9,600 Nos)	-	-	-	-	₹ -
H	Growing Zone- Hydroponic System- Aeroponics System - 104 SQM (Total Plants - 2,120 Nos)	-	-	-	-	₹ -
I	Growing Zone- Hydroponic System- DWC System - 48 SQM (Total Plants - 1,100 Nos)	-	-	-	-	₹ -
J	Growing Zone- Hydroponic System- Trough System - 6 SQM (Total Plants - 73 Nos)	-	-	-	-	₹ -
K	Automation Unit - 78 SQM	-	-	-	-	₹ -
L	Consumables (Considered to 1st Crop Cycle)	-	-	-	-	₹ -
M	Cost Estimate for Civil work, RO Unit, Water Chiller, Generator and Utility Material.	-	-	-	-	₹ -
<b>Grand Total Amount (Rs.)</b>						₹ -

**NOTE:** GST Percentage as per Government Rules.



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Website: <http://www.kvkbaramati.com>

E-mail: [kvkbmt@yahoo.com](mailto:kvkbmt@yahoo.com)

## Centre of Excellence for Hydroponics, Baramati

*Installation, Commissioning with hand holding & technical support  
for Installation of Hydroponics System (Part- I Tender) &  
Hydroponics Systems, Vertical Farming, Aeroponics, DWC, Grow  
Tower (Vertistack) & Grow light System with, Irrigation, automation  
system (Part- II Tender) for Vegetables Production at CoE for Veg.,  
Baramati, Dist. Pune  
(Innovative Project Under Protected Cultivation)*

Tender No: ADT's/KVK/CoEH/327/2023

### TENDER NOTICE WITH TERMS & CONDITIONS



**Address: Project In charge**

Centre of Excellence for Vegetables & Hydroponics,  
Krishi Vigyan Kendra, Baramati &  
Agricultural Development Trust  
A/p- Malegaon Khurd, Tal - Baramati,  
Dist.- Pune – 413115, Maharashtra, India



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**Instruction to tenderers (based on Indian law and rules)**

**1.1. General instructions**

1.1.1. The tenderers are advised in their own interest, to carefully read the instructions and understand their purport and unless the tender specifically states to the contrary in respect of any particular clause, it shall be presumed that all tender conditions have been accepted as laid down in this document.

1.1.2. Erasure or alteration in the bid conditions should be avoided. Modification, erasure, or alteration, if any, should bear the signatures of the person signing the bid.

1.1.3. In case the specifications of any offered items / machineries/ software/ any other related items deviates from the specifications laid down in the tender form, the tenderers should describe as to in what respect and to what extent the equipment offered by them deviates from the specifications, even though the deviations may be minor. It should be explained how these would be useful for our purpose.

1.1.4. The tenderers should enclose with their offers descriptive catalogues, leaflets and engineering drawings supplementing the description and point out any special features/advantages of their equipment quoted and users list of the equipments /machineries supplied by them. All the literature, leaflets, engineering drawings etc. should be in English or accompanied by English translation in case the language is other than English. This should be adhered to strictly to enable objective evaluation of offers.

**1.1.5. The tenderer must have established similar structures and should take necessary steps to arrange field visit to organization where it had erected similar structure to get firsthand information on functioning of the units erected.**

1.1.6. The tenderer shall deposit EMD (bid security) worth 1% of the project cost in the form of demand draft in favor of **Project InchargeCoE for Vegetables, ADTs, KVK, Baramati** or as bank guarantee. The copy of the bank guarantee should be attached with the technical bid and should be submitted to Project In charge, CoE





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forVegetables, Krishi Vigyan Kendra and ADT, Baramati, A/p- Malegaon Khurd, Tal - Baramati, Dist- Pune – 413115 (M.S.) India at the time of submitting the tender.

- 1.1.7. The validity of the bank guarantees should not be less than 365 days for bid security.
- 1.1.8. The bid shall be rejected if not accompanied by bid security.
- 1.1.9 Tenderers shall deposit a tender fee worth Rs. 15,000/- in the form of demand draft or Cheque in favour of Project In charge, CoE for Vegetables, ADT, KVK, Baramati and it's a non-refundable( For Part- I & Part- II Tender fees is separate).
- 1.1.10. All the documents and communications in connection with the bidding shall be made in English.
- 1.1.11. This tender is not transferable.
- 1.1.12. Apart from the erecting and commissioning of the unit as per the specifications laid down the tenderer shall provide handholding support and maintenance of the unit for one year from the date of commencement of production and ensure production of good quality vegetables produce during that period. Shut down and /or preventive maintenance or damage of any material / Instruments / Machineris during that period shall be the responsibility of the tenderer(for Part- I & PART- II Tender).

Also depute one separate technical Person or Agronomist for Technical guidance on line / Offline and for the development of package of practices of all types of Exotic vegetables suitable for all types of hydroponics systems included in this Project. One visit per month for the technical guidance for one year. This condition is specially for PART- II Hydroponics Systems Tender.

- 1.2. Site visit and verification of information. The tenderers are encouraged to submit their respective bids after visiting the projects sites and asserting themselves the site condition, traffic, location surroundings, climate, availability of power and water, and other utilities for the construction, storages etc., (for Part- I & PART- II Tender).



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### **1.3. Cost of bidding**

The tenderer shall be responsible for all the costs associated with the preparation of their bids and their participation in the bidding process.

### **1.4. Quotation of Prices**

1.4.1. Tenderer shall give a final and net price free from all escalations. Request for change in price will under no circumstances be considered after opening of the tender. (For Part- I & PART- II Tender).

1.4.2. The validity of rates quoted will be up to the completion of project. (For Part- I & PART- II Tender).

1.5. All direct and indirect taxes arising in connection with the execution of work shall exclusively be borne by the successful tenderer (for Part- I & PART- II Tender).

### **1.6. Qualifying Criteria for acceptance of bid**

1.6.1. The company should have a turnover of Rs. 2-2.5 crores (Any one year) in the preceding 3 years. Company has to submit turn over documents for last 3 years.

1.6.2. The Company should give assurance about component wise Guaranty and Warranty of all types of material to be supplied under this tender (For Part- I & PART- II Tender- Undertaking should be given by company on company letterhead).

1.6.3. 3-4 years of experience in the production & installation of similar projects (Part- I & part- II Tender).

1.6.4. Preference will be given to company with ISO/ISI certification for green house and accessories and food grade certificate for all the material installation under this all types of hydroponics System (For Part- II Tender).

1.6.5. Preference will be given to company having successfully completed same project or related project for any Agril. OR Govt. Department which is having costing not less than Rs.50.00 lakh during last three financial years (For Part- I Tender).



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- 1.6.6. Tenderer should be empaneled/ Registered Polyhouse / Shade net house erectors under MSHMPB, Pune for Errection of Structure, Installation of different Units & systems included in this Project (Part-I tender).
- 1.6.7. This is the Innovative project and considering the different types of Hydroponics structures. Some of the components in this project there is no guidelines available in MIDH Guidelines and the companies related to establishment of Hydroponics Systems is not empaneled under MSHMPB, Pune. Those Companies or components will be established or purchased (selection of Tenderer) after approval of technical committee formed by MSHMPB, Pune (Part- II Tender).
- 1.6.8. The company, or leading company in case a consortium of companies is responsible for the coordination of all deliveries, the construction and training of staff of Center of Excellence for vegetables & Hydroponics.

**1.7. Printed Terms & Conditions of Tendering Contractor.**

- 1.7.1. Printed terms & conditions of the bids shall not be considered and the same shall not be binding or become part of the contract unless any of such terms is specifically laid down by the tenderer and accepted by the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati Dist-Pune (M.S.) in writing. Except to the extent stated above, it will be deemed that the printed terms & conditions of the tendering contractors have been rejected by Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati Dist-Pune (M.S.)

**1.8. Transfer and subletting**

The tenderer shall not sublet, transfer, assign or otherwise part with the contract to any person, contractor or Company directly or indirectly, in full or any part thereof without the previous written permission of the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati Dist-Pune (M.S.)

- 1.9. Appointing a committee for evaluation, monitoring and certification of the constructionwork: MSHMPB, Punehasappointed a committee for the evaluation,



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monitoring and certification of the construction done by the selected contractor through the committee formed by MSHMPB, Pune. The details will be given to the selected contractor in due course.

**1.10. Submission of tender**

Tendering will be done in two bid system. The tenderers should follow the procedures and formalities while submitting the tender. Separate tender should submit for Part- I & Part- II Tender in two bid systems (With separate 1 % bid security and tender fees).

**1.11. Bid due date**

1.11.1. The bids should be submitted on or **before 8.9.2023 at 16.00hrs IST** on the bid due date. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati may, in its sole discretion, extend the bid due date by issuing a corrigendum uniformly for all tenderers.

**1.12. Contents of the bid**

1.12.1. Copy of Bank guarantee in the prescribed format/ DD in favour of Project In charge, CoE for Hydroponics, ADT, KVK, Baramati, Dist-Pune.

1.12.2 Signed copy (all pages) of notice inviting tender, Tender document and technical and financial bids in **two separate covers/ Envelopes** with all attachments (Technical & Financial bid documents).

1.12.3 The opening of the bids and acceptance thereof shall be subsequently in accordance with the conditions of the tender.

**1.13. Bid security**

1.13.1. The tenderer shall furnish as part of its bid as bid security (Deposit EMD-bid security) worth 1% of the project cost) as referred in the clause no. 1.1.6 and 1.1.7 and herein above in the form of bank guarantee issued by a Nationalized bank (Bank in India having a net worth at least Rs.200-300 crores) in favour of Project In charge, CoE for



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Vegetables, ADT, KVK, Baramati, Dist-Pune (M.S.) in the format in the appendix and having a validity period of not less than 365 days from the bid due date as may be extended by the tenderer from time to time.

- 1.13.2. Bid security can also be in the form of demand draft issued by a Nationalized bank in India drawn in favour of Project In charge, CoE, ADT, KVK, Baramati, payable at Baramati Dist: Pune. Project In charge, CoE, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) will not pay any interest to the bid security deposit.
- 1.13.3. Any bid not accompanied by the bid security shall be rejected by Project Incharge, CoE, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) as non-responsive.
- 1.13.4. The bid security of the unsuccessful tenderers will be returned by Project In charge, CoE, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) without interest as promptly as possible on acceptance of the bid of the selected tenderer or in the event of the bidding process being cancelled.
- 1.13.5. The bid security of the selected tenderer will be returned without interest only after the commissioning of the work. If the bid security is in the form of bank guarantee the **validity should be extended accordingly.**
- 1.13.6. Copy of the Bid security should be enclosed along with technical bid only.
- 1.13.7 The Tender documents viz. **Technical and Financial bid** should be posted or given by hand to Project Incharge, Centre of Excellence for Vegetables, Krishi Vigyan Kendra, Baramati and Agricultural Development Trust, A/p- Malegaon Khurd, Tal-Baramati, Dist-Pune 413115 Maharashtra, India. Phone: (02112) 255527, 255327.



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**1.14. Opening and evaluation of the bids:**

1.14.1. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) shall open the bids on **11.09.2023 at 11.00hrs IST**, the bid due date in case the date of opening of the tender happens to be a holiday, it will be opened on the next working day at the same time and place. Details of Place will be communicated to tenderer in due course of time.

1.14.2. The tenderers or their authorized Representatives may attend at the time of opening of the tender, if they so desire.

1.14.3. **'Technical Bids'** shall be opened first on **11.9.23 at 11.00hrs IST**.

1.14.4. The 'Financial Bid' of technically qualified bidders shall be opened subsequently. The date of opening of the Financial Bid is **11.9.23**.

1.14.5. The amount and validity of the bid security will be announced. There after the tenderers name, the bid price and such other details as the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) may consider appropriate shall be announced at the time of opening.

1.14.6. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) shall prepare minutes of the bid opening.

**1.15. Selection of the tenderer**

1.15.1. Project In Charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) will not be bound to accept the lowest tender as per the experience and quality of material the tenderer should be selected.

1.15.2. After selection, a letter of acceptance (LOA) shall be issued in duplicate by Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) to the selected tenderer and the selected tenderer shall within 10 official days of receipt of LOA sign and return the duplicate copy of the LOA.





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**1.16. Right to accept and to reject any or all Bids**

1.16.1. Notwithstanding anything contained in the tender Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) reserves all the right to accept or reject any Bid and to annul the bidding process and reject all bids at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reason therefore.

1.16.2. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) reserves the right to reject any bid and appropriate the bid security at any time if a material misrepresentation is made or uncovered.

**1.17. Agreement:**

The successful tenderer shall, within 10 days of signing the LOA, be bound to execute a formal agreement as per the format given in the tender document. The terms & conditions contained in tender document will be construed to be part of the agreement. Any variation in the terms & conditions as suggested by the tenderer and accepted by the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) will be specifically mentioned in the agreement. The cost of stamping for agreement should not be less than Rs.500/- which shall be borne by the successful tenderer.

**1.18. Bank Guarantee**

The successful tenderer shall furnish bank guarantee for **10% of the agreed contract value issued by any Nationalized Bank** towards execution of the contract at the time of signing aforesaid agreement. This guarantee will have a validity period of 365 days.

**1.19. Warranty**

The successful tenderer shall warrant that goods to be installed under this contract shall be free from all defects and faults in material, workmanship and manufacture



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and shall be of the highest grade and consistent with the established and generally accepted standards for materials and in full conformity with the contract specifications and drawings or samples, if any, and shall operate properly and satisfactorily for a period of one year from the date of completion of work. The successful tenderer shall, replace or repair the goods or such portion in case of defects or poor workmanship or any malfunction of the unit or any portion thereof.

**1.20. Execution of work**

- 1.20.1. The Company shall at his expense obtain all necessary permits and licenses required for execution of the work.
- 1.20.2. The Company shall arrange and pay for all personnel, materials, transportation and all other facilities required for the satisfactory execution and completion of the work while electricity will be provided by Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati as per bills on payment basis. The price quoted will be deemed to be inclusive of all such expenses.
- 1.20.3. The Company shall indemnify the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) against all claims, proceedings, damages, costs, charges and expenses arising in connection with damage to property of any person or injury to person or loss of life occurring in the course of execution of the work.
- 1.20.4. All bidders shall enclose a certificate stating that they have no dues with regard to the EPF, ESI or any other statutory payment with regards to their employees and should also furnish the details of last remittance of EPF and ESI of their employees.

**1.21. Termination of contract**

Project In charge, Centre of Excellence for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) A/p- Malegaon Khurd, Tal-Baramati, Dist-Pune 413115 Maharashtra, India. Phone: (02112) 255527, 255327 will monitor the progress of work from time to time. It is the obligation of the contractor to complete



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the work as per the schedule as in 1.23 by observing the terms and conditions of the agreement. **If Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati notices that the work is not progressing as per the schedule and there are violations of the terms and conditions of the agreement, he has every right to give stop memo and terminate the contract without prior notice.**

**1.22. Terms of Payment**

1.22.1. All invoices shall be prepared in quadruplicate in favour of Project In charge, CoE for Hydroponics, ADT's, Krishi Vigyan Kendra, Baramati, Dist-Pune (M.S.) and shall be signed by the supplier or his authorized agent.

**1.23. Time limit for commissioning and payment terms shall be as follows.**

Stage	Days from the receipt of LOA	Conditions	Payment details
one	Within 1months	After signing the Agreement and submission of 10% of the contract value (Bank guarantee) & 50% completion of work and certification by committee	40 % of the agreed contract value
Two	2 months to 3 months	100% completion of work	50 % of the agreed contract value
Three	After Six Month & Completion of all work as per tender	Six Month after completion of work and hand holding as in clause no1.1.12	10 % of the agreed contract value
<b>Total</b>			<b>100%</b>

The third portion of 10% can be released on submission of bank guarantee for an equal amount valid for a period of 365 days.

**1.24. Capacity building**

It is the obligation of the selected firm to provide required training and capacity building programmers to CoE for Hydroponics, Krishi Vigyan Kendra and ADT,



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Baramati, Dist-Pune (M.S.) staff on the operation of the unit till completion of one life cycle of each hydroponics unit.

**1.25. Time period for the completion of work**

The work shall be executed strictly in 3 months (PART- I Tender) & 2.5 Months (Part- II Tender) from the date of receipt of the LOA

**125.1 Language of Bid**

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser shall be written in English language only.

**1.26. Dispute**

1.26.1. Final decision in all issues arising in connection with the tender process and execution of work shall be taken by the Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) and the said decision will be binding upon all.

1.26.2. **LD clause** – The successful bidders should complete the work as per the schedule above. Any delay will attract LD of 1 % per month of the contract value subject to maximum of 10% of the contract value.

1.26.3. All disputes relating to the tender process and execution of work shall exclusively be subject to jurisdiction of court in Baramati (Pune).

**1.27. General terms and conditions of tendering**

1.27.1. All communication regarding the tender including queries if any and submission of offers shall be done through Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) by taking information through the website <http://www.kvkbaramati.com> or [www.coekvkbaramati.com](http://www.coekvkbaramati.com)

1.27.2. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) shall not be responsible for any delays, reasons whatsoever, in



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receiving as well as submitting offers, and shall not be responsible for any postal or other delays in submitting EMD/Tender cost wherever applicable.

- 1.27.3. Please note that the queries related to tender specifications, terms & conditions is uploaded on website which can be taken by downloading PDF files through website [www.kvkbaramati.com](http://www.kvkbaramati.com)& [www.krishimaharashtra.gov.in](http://www.krishimaharashtra.gov.in)
- 1.27.4. Two cover system  
Bidders are required to submit offer in Two covers, name **“Fee/Pre. Qualify/Technical/” & “Financial” for Part-I & Part- II**. Finance cover in the schedule of work (BOQ) only. Please do not quote /mention rates anywhere else in the tender other than BOQ.
- 1.27.5. Bidders shall remit the tender fees along with the submission document in the form of DD or Cheque in favour of Project In charge, CoE, ADT,KVK , Baramati,
- 1.27.6. The Earnest Money Deposit of the unsuccessful tenderer shall be refunded immediately after the acceptance of Work Order by the successful bidders.



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**At/Po- Malegaon Khurd, Tal-Baramati,**

**Dist.-Pune 413115 Maharashtra State,**

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**Website: <http://www.kvkbaramati.com>**

**E-mail: [kvkbmt@yahoo.com](mailto:kvkbmt@yahoo.com)**







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**TENDER FORM**

To,

Project In charge  
Centre of Excellence for Vegetables & Hydroponics  
Krishi Vigyan Kendra, Baramati and  
Agricultural Development Trust  
A/p- Malegaon Khurd, Tal - Baramati,  
Dist- Pune – 413115 Maharashtra.

Sub:**Tender No. ADT's/KVK/CoEH/327/2023** for the Installation, Commissioning with hand holding & technical support for Fan & Pad Type Polyhouse (**Part- I Tender**) Hydroponics Systems, Vertical Farming, Aeroponics, DWC, Grow Tower (Verti stack) & Grow light System with, Irrigation, automation system (**Part- II tender**) for Vegetables Production at CoE for Veg., Baramati, Dist. Pune (**Innovative Project Under Protected Cultivation**)

Sir,

- I. I/We \_\_\_\_\_ have read the tender conditions as issued by Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune and hereby agree to abide by the said instructions, terms and conditions except to the extent specified by me/us in the attached sheet marked 'A'.
- II. **Security deposit details:** Bank Draft No. \_\_\_\_\_ dated \_\_\_\_ for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) drawn in the favour of Project In charge, CoE for Hydroponics, ADT, KVK, Baramati, payable at Baramati Dist.: Pune (Bank guarantee details as per the format attached)
- III. Until a formal agreement is prepared and executed, acceptance on this tender shall constitute a binding contract between us subject to modifications as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.



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- 
- IV. This tender is being submitted by hand or by post and will be opened and decided at same place and it is agreed that Civil Courts at Baramati, Pune alone will have jurisdiction to deal with any legal proceeding that may arise in connection with this tender or subsequently.
- V. I/We have read and understand that my/our financial bid shall be opened only if bid found qualified based on technical bid.
- VI. I/We have read and understand the specification for the items and the terms and conditions contained in the tender document and agree to which by the same and against which the bids are submitted in the separate covers '**Technical & Financial Bid**' in the tender

**Signed by State legal status whether prop./Partner/**

**Registered Contractor/Company etc.**



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Annexure- 1

**FORM FOR TECHNICAL BID**

To,

Project In charge  
Centre of Excellence for Vegetables &Hydroponics,  
Krishi Vigyan Kendra, Baramati and  
Agricultural Development Trust,  
A/p- Malegaon Khurd, Tal - Baramati,  
Dist- Pune – 413115, Maharashtra, India

Sir,

**1. Profile of our Company is as under:**

- + Constitution or legal status of Tenderer
- + Place of registration: \_\_\_\_\_
- + Principal place of business: \_\_\_\_\_
- + Power of attorney of signatory of Bid

**2. Work performed of a similar nature over the last Three years.**

Year	Name & Address of institution	Value (Rs.in lakhs)	Stipulated period of Completion	Actual date of Completion	Remarks explaining reasons for delay if any & work completed

- + Attachself-attested copies of work Orders.

**3. Capabilities with respect to personnel, equipment and manufacturing facilities**

**3.1. Availability of infrastructure of the company.**

Name of the Building	Size (Sq. Mtr.)	Type of Structure



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**3.2. Availability of Personnel (Technical staff and skilled workers of the company)**

Type of Employee	No.	Qualification	Experience

- 3.3. Audited financial reports in English for the last three years, balance sheets, profit and loss statements, auditors' reports (in case of companies) etc. List them below and attach self-attested copies.
- 3.4. Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit etc. List them below and attach self-attested copies of support documents.
- 3.5. Evidence for ISO/ISI certification (PART-I Tender) and food grade certificate of Hydroponics all types of Systems materials (Part- II Tender).
- 3.6. Name, address and telephone (Land line as well as Mobile No.) and fax numbers of the Tenderers' banker who may provide references if contacted by the Project Incharge, CoE for hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.).
- 3.7. Descriptive catalogues, leaflets and engineering drawings supplementing the description and point out any special features/advantages of their equipment quoted and users list of the equipments/machineries supplied by them. All the literature, leaflets engineering drawings etc. should be in English or accompanied by English translation in case the language is other than English. This should be adhered to strictly to enable objective evaluation of offers.
- 3.8. In case the specifications of any offered items / machineries/ software/ any other related items deviates from the specifications, description as to in what respect and to what extent the equipment offered by them deviates from the specifications, even though the



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deviations may be minor may be attached. It should be explained how these would be useful for our purpose.

- 3.9. Detailed technical drawing of work to be attached.
- 3.10. Certificate stating no dues with regard to the EPF, ESI or any other statutory payment with regards to their employees and also should furnish the details of last remittance of EPF and ESI of their employees
- 3.11. Details of office set up for after sales service
- 3.12. Details of Human resource to run the project in the following format

Engineer/ Scientist/Technician	Post	Qualification	Indian/ expatriate

**(Signed by Authorized Signatory)**



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**Annexure 2**

**AGREEMENT FORM**

**AGREEMENT NO.....**

This agreement is made on this .....between Project In charge, CoE for Vegetables & Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.)(hereinafter called the Project In charge, CoE for Hydroponics, KVK and ADT, Baramati which expression shall unless excluded by or repugnant to the context, be deemed to include its successors and assigns) of the first part and M/s..... (Hereinafter called the 'contractor" which expression shall include unless excluded by or repugnant to the context, be deemed to its successors and assigns) of the second part.

WHEREAS the Project In charge, CoE for Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.) with the intention of Installation, Installation, Commissioning with hand holding & technical support for Hydroponics, Vertical Farming, Aeroponics, DWC, Grow Tower & Grow light System with, Irrigation, automation system for Vegetables Production (Innovative Project Under Protected Cultivation) under Centre of Excellence for Hydroponics had invited tenders for the execution of the said work.

AND WHEREAS the contractor had submitted their letter of agreement no..... dated.....

AND WHEREAS the Project In charge, CoE for Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.) had accepted the tender submitted by the Contractor and had on ..... 2015 also issued Letter of Acceptance to the Contractor

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

1. The Contractor shall be paid an amount of Rs. ..../- (Rupees ..... only) by the Project In charge, CoE for Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.) in accordance with the Schedule specified hereinafter.





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2. The Contractor shall complete the work in 3- 5 months from the date of receipt of LOA as mentioned in tender documents.
3. Apart from the erecting and commissioning of the unit as per the specifications laid down the tenderer shall provide handholding support and maintenance of the unit for one year from the date of commencement of production and ensure production of good quality vegetables during that period.
4. It is the obligation of the selected firm to provide required training and capacity building programmers to CoE for Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)staff on the operation of the unit
5. Project In charge, CoE for Hydroponics, Krishi Vigyan Kendra and ADT, Baramati,Dist-Pune (M.S.) will monitor the progress of work from time to time. It is the obligation of the contractor to complete the work as per the schedule below by observing the terms and conditions of the agreement. IfProject In charge, CoE for hydroponics, Krishi Vigyan Kendra and ADT, Baramati,Dist-Pune (M.S.) notice that the work is not progressing as per the schedule and there are violations of the terms and conditions of the agreement, he has every right to give stop memo and terminate the contract without prior notice. This is not prejudice to his any right as per the agreement.
6. Shut down and /or preventive maintenance during that period shall be the responsibility of the tenderer.

**7. Time limit for commissioning and payment terms shall be as follows.**

<b>Stage</b>	<b>Days from the receipt of LOA</b>	<b>Conditions</b>	<b>Payment details</b>
one	Within 1 months	After signing the Agreement and submission of 10% of the contract value (Bank guarantee)& 50% completion of work and certification by committee	40 % of the agreed contract value
Two	2 months to 3 months	100% completion of work	50 % of the agreedcontractvalu



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			e
Three	After Six Month & Completion of all work as per tender	Six Month after completion of work and hand holding as in clause no1.1.12	10 % of the agreed contract value
<b>Total</b>			<b>100%</b>

8.The third portion of 10% can be released on submission of bank guarantee for an equal amount valid for a period not less than one year.

9. All direct and indirect taxes arising in connection with the execution of work shall be borne exclusively by the Contractor.

10. **LD clause** – The successful bidders should complete the work as per the schedule above. Any delay will attract LD of 1 % per month of the contract value subject to maximum of 10% of the contract value.

11. The conditions and specifications in the Invitation to Bid, the Financial Bid and the Technical Bid will form an integral part of this agreement and the parties will bound to abide by all the conditions and specifications contained therein.

12. This agreement is made in duplicate. The original printed on stamp paper No. .... will be retained by the Project In charge, CoE, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) while the duplicate printed on stamp paper No..... will be retained by the Contractor.

IN WITNESS WHEREOF, both the parties have here to subscribe their signature on-----  
-----the date and year herein above written through authorized representatives.

For and on behalf of the contractor

For and on behalf of the Project Incharge, CoE  
for Hydroponics, Krishi Vigyan Kendra and  
ADT, Baramati, Dist-Pune (M.S.)

**Witness**

**Witness**

1.

2.



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**Annexure - 3**

**Bank Guarantee for Bid Security**

*(Refer clauses in instruction for Tenderers 1.1.6 and 1.1.7)*

B.G. No. Dtd.....

1. In consideration of Project In charge, CoE for Vegetables & Hydroponics, Krishi Vigyan Kendra and ADT, Baramati, Dist-Pune (M.S.) having its office at Baramati (hereinafter referred to as the “ Project Incharge CoE for Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)”, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the Bid of .....(and having its registered office at .....(hereafter referred to as the “Tenderer” which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for Installation, Commissioning with Hand Holding & Technical Support for fan & Pad Type Polyhouse ( Part- I Tender) Hydroponics Systems, Vertical Farming, Aeroponics, DWC, Grow Tower & Grow Light System with, Irrigation, Automation System ( Part- II tender) for Vegetables Production at CoE for Veg., Baramati, Dist. Pune (hereafter referred to as “the Project”) and other related documents having our registered office at ..... and one of its branches at .....do hereby in terms of Clause 1.1.6 read with Clause 1.1.7 of the instruction to tenderers (including the tender Documents) by the said Tenderer undertake to pay forthwith to the Project Incharge, CoE, KVK and ADT, Baramati, Dist-Pune (M.S.) an amount of Rs. .... (Rupees.....only) as bid security (hereafter referred to as the” Bid Security” ) as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Tenderer if the Tenderer shall fail to fulfill or comply with all of the terms and conditions contained in the said Bidding Documents.



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2. Any such written demand made by the Project Incharge, CoE for Hydroponics , KVK and ADT, Baramati, Dist-Pune (M.S.)stating the Tenderer is in default of the due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.
3. We the Bank, do hereby unconditionally undertake to pay the amount due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Tenderer or any other person and irrespective of whether the claim of the Project In charge, CoE for Hydroponics/, KVK and ADT, Baramati, Dist-Pune (M.S.)is disputed by the Tenderer or not merely on the first demand from the tenderer to fulfill and comply with the terms and conditions contained in the Bidding Documents including failure of the said Tenderer to keep its Bid open during the bid validity period as set forth in the said bidding Documents for any reason whatever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. ....(Rupees ..... only).Amount of bank Guarantee is 10 % of total cost of the tender pertaining to PART- I and Part- II Tender & as per eligibility of tenderer.
4. This Guarantee shall be irrevocable and remain in full force for a period of 365 (Three hundred and sixty five days) days from the Bid Due Date inclusive of a claim period of 60 (sixty) days or such extended period as may be mutually agreed between the Project Incharge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.) and the Tenderer, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.
5. We, the bank, further agree that the Project Incharge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)shall be the sole judge to decide as to whether the Tenderer is in default of due and faithful fulfillment and compliance with the terms and conditions contained in the bidding documents including, inter alia, the failure of the



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Tenderer to keep its bid open during the Bid validity period set forth in the said Bidding Documents, and the decision of the Project Incahrge, CoE on Hydroponics,KVK and ADT, Baramati, Dist-Pune (M.S.)that the Tenderer is in default as ADT's, Krishi Vigyan Kendra, Baramati, Dist-Pune (M.S.)and the Tenderer or any dispute pending before any Court, Tribunal, Arbitrator or any other ADT's, Krishi Vigyan Kendra, Baramati, Dist-Pune (M.S.).

6. The Guarantee shall not be affected by any change in the constitution or winding up of the Tenderer or the Bank or any abstraction, merger or amalgamation of the Tenderer or the Bank with any other person.
7. In order to give full effect to this Guarantee, the Project Incahrge, CoE on Hydroponics,KVK and ADT, Baramati, Dist-Pune (M.S.)shall be entitled to treat the Bank as the principal debtor. The Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Bids or Bid validity period or the period for conveying acceptance of Letter of Award by the Tenderer or the period for fulfillment and compliance with an or any of the terms and conditions contained in the said Bidding Documents by the said Tenderer or to postpone for any time from time to time any of the powers exercisable by it against the said Tenderer and either to enforce or forebear from enforcing of the terms and conditions contained in the said Bidding Documents or the securities available to the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)and the Bank shall not be released from its liability under these presents by any exercise by the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)of the liberty with reference to the matters aforesaid or by reason of time being given to the said Tenderer or any other forbearance, act or omission on the part of the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)or any indulgence by the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati,



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Dist-Pune (M.S.)to the said Tenderer or by any change in the constitution of the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)or its observation, merger or amalgamation with any other person or any other matter or thing whatever which under the law relating to sureties would but for this provision have the effect or releasing the Bank from its such liability.

8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
9. We undertake to make the payment on receipt of your notice of claim on us addressed to (name of Bank along with branch address) and delivered at our above branch that shall be deemed to have been dully authorized to receive the said notice of claim.
10. It shall not be necessary for the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)to proceed the said Tenderer before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)may have obtained from the said Tenderer or any other person and which, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealized.
11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of the Project Incahrge, CoE on Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.)in writing.
12. The Bank declares that it has power to issue this guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this guarantee for and on behalf of the Bank.
13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. .... crore (Rupees ..... crore) only. The Bank shall be liable to pay the said amount or any part thereof only if the Project Incahrge,





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CoEon Hydroponics, KVK and ADT, Baramati, Dist-Pune (M.S.) serves a written claim on the Bank in accordance with paragraph 9 hereof, on or before (..... (indicate date falling 365 days after the Bid Due Date)) and delivered by ..... Bank.

By the hand of Mr./ Ms ....., its ..... and authorized official.

**Signature of the Authorized Signatory**

**(Official seal)**





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**CHECK LIST**

**Name of the Company:**

<b>Sr.No.</b>	<b>Items</b>	<b>Yes/ No</b>
1	Profile of the Company	
2	Work performed of a similar nature over the last Three years	
3	Capabilities with respect to personnel, equipment and manufacturing facilities	
4	Audited financial reports for the last three years, balance sheets, profit and loss statements, auditors' reports (in case of companies)	
5	Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit etc	
6	Evidence for ISO/ISI certification (PART- I Tender)& Hydroponics System Food Grade Certification ( Part- II tender)	
7	Name, address and telephone (Land line as well as Mobile No.) and fax numbers of the Tenderers' banker who may provide references if contacted by the Council.	
8	Descriptive catalogues, leaflets and engineering drawings supplementing the description and point out any special features/advantages of their equipment quoted and users list of the equipments/machineries supplied.	
9	Details of deviation if any	
10	Certificate stating no dues with regard to the EPF, ESI or any other statutory payment with regards to their employees and also should furnish the details of last remittance of EPF and ESI of their employees	
11	Details of office set up for after sales service	
12	Details of Human resource to run the project in the format attached	
13	Detailed technical drawings of the work to be enclosed by tenderer.	
14	Signed copy of tender document (signed in all pages) along with copy of Bid security /DD-( original posted to Chairman, Centre of Excellence for Vegetables, Krishi Vigyan Kendra, Baramati & Agricultural Development Trust, A/p- Malegaon Khurd, Tal – Baramati, Dist.- Pune – 413115, Maharashtra, India)	
15	Signed copy of notice inviting tender	
16	Financial bid entered in BOQ	

**SIGNATURE OF THE TENDERER**



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## DETAILED TECHNICAL SPECIFICATION

### Centre of Excellence for Hydroponics, Baramati

*Installation of Hydroponics systems, Vertical Farming, Aeroponics, DWC, Grow Tower ( Verti stack) & Grow light System with,Irrigation, automation system for Vegetables Production at CoE for Veg., Baramati, Dist. Pune*

**Tender No: ADT's/CoEH/327/2023**

#### Part – II Tender Technical Specifications with Drawing



**Address:** **Project Incharge**  
Centre of Excellence for Hydroponics,  
Krishi Vigyan Kendra, Baramati &  
Agricultural Development Trust  
A/p- Malegaon Khurd, Tal - Baramati,  
Dist.- Pune – 413115, Maharashtra, India



## Technical specifications for the Establishment of Overall Hydroponics Systems

### INVITATION FOR BIDS

**TENDER NO.:** ADT's/CoEH/327/2023 **DATE:** \_\_/\_\_/2023

### PART – II

*Installation of Hydroponics, Vertical Farming, Aeroponics, DWC, Grow Tower & Grow light System with, Irrigation, automation system for Vegetables Production at CoE for Veg., Baramati, Dist. Pune*

Sr. No.	Items	Specifications	Photos	Qty	Unit
01.	<b>Generator (DG Set)</b>	DG Set with canopy of 40 KVA capacities. Sound Proof Canopy (CPCB II Approved) with installation. <ul style="list-style-type: none"> <li>• Fuel Tank</li> <li>• Battery with Lead</li> <li>• Anti-vibration Mounting Pad.</li> <li>• Engine Safeties &amp; Protections, auto &amp; manual switch with control panel</li> </ul> <b>Warranty:</b> 1 year from Installation		1	No
02.	<b>Filtration Unit</b>	It consists of Hydrocyclon Filter- 10 m3/hr, Sand Filter- 10 m3/hr and Disc Filter- 10 m3/hr along with uPVC Pipe it's fitting like Elbow, Tee, Valve, FTA, MTA, and Teflon Tape. Filter should connect in series (Like Hydro- Cyclone, Sand Filter and Disc Filter) <p><b>Filtration System Brand:</b></p> <ul style="list-style-type: none"> <li>• uPVC pipe should provide to fill the Nutrient water tank of Hydroponic System and Fogging System.</li> <li>• (It consists of uPVC Control Valve, uPVC Pipe, Elbow, Tee, Tube 6mm, fittings like Teflon Tape, Solvent.)</li> <li>• Make (Pipe and Fitting): leadfree or equivalent.</li> <li>• 1 HP (Single Phase) Pump for Filtration System.</li> <li>• <b>Warranty:</b> 1 Year Service warranty</li> <li>• Single-phase Monoblock Water Pump.</li> <li>• In-built Thermal over Load Protector.</li> <li>• <b>Power Rating:</b> 0.75 kW.</li> <li>• <b>Power Supply:</b> 220V-240V.</li> <li>• <b>Motor Power:</b> 1.5 hp. Detailed</li> </ul>		1	Set




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		drawing of system is Need to be provided along with tender documents.			
03.	RO Unit	<p>RO unit of capacity 2000 LPH consists of following items-</p> <p>1) Raw Water Feed Tank with Accessories: 1 Nos</p> <p>2) RO Feed Pump: - 1 Nos. (1 Working)</p> <p>Nicoll Dosing System: -1 Nos. Dosing Pump + 1 No. Tank</p> <p>3) Dual Media Filter: - 1 Nos. (1 Working)</p> <p>SMBS Dosing System: -1 Nos. Dosing Pump + 1 No. Tank</p> <p>4) Micron Cartridge Filter: - 1 Set (1 Working)</p> <p>5) High Pressure Pump: - 1 Nos. (1 Working)</p> <p>6) Reverse Osmosis Skid: -1 Skid</p> <p>7) pH Correction Dosing System: -1 Nos. Dosing Pump + 1 No. Tank</p> <p>8) Ultraviolet System: - 1 No (1 Working)</p> <p>9) pH Correction Dosing System: -1 Nos. Dosing Pump + 1 No. Tank</p> <p>10) Ultraviolet System: - 1 No (1 Working)</p> <p>11) Treated Water Collection Tank with Accessories: 1 No</p> <p>12) Control Panel: 1 Set</p> <p>13) Interconnecting Cabling, piping &amp; Fittings to make system complete: 1 Lot</p> <p><b>Warranty:</b> 1 Year from Date of Installation</p> <p>Detailed Drawing of system is Need to be provided along with tender documents.</p>		1	No

**Technical Specification for Hydroponics System (Dutch Bucket) for Exotic Vegetables**

01.	Food Grade Dutch Bucket	<p>Dutch Bucket made of Food Grade Material (supplier must provide the Test Certificates) Dutch buckets are designed to be fed by dripemitters. This feature prevents growing medium from drying out and causing water stress between irrigation cycles. Useful for vining crops like tomatoes and cucumbers, as well as for growing larger plants.</p> <p>Detailed Drawing of system is Need to be provided along with tender documents.</p> <p><b>Summary of Test Results:</b></p>		470	Nos
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		SR. NO	TESTING PARAMETERS	RESULT		
		1	Specific Migration of BIS-(2-ETHYLHEXYL) PHTHALATE (DEHP).	PASS		
		2	VISIBLE COLOUR MIGRATION	PASS		
		3	SPECIFIC MIGRATION OF HEAVY METALS.	PASS		
		4	RESIDUAL CATALYST.	PASS		
		5	HEAVY METAL CONTENT.	PASS		
		6	TOTAL PRIMARY AROMATIC AMINES.	PASS		
		7	SUPHONATED AROMATIC AMINES.	PASS		
		8	POLYCHLOROBIPHENYL (PCB).	PASS		
		9	CARCINOGENIC AMINES.	PASS		
		10	DETERMINATION OF OVERALL MIGRATION OF CONSTITUENTS OF PLASTIC MATERIALS AND ARTICLES INTENDED TO COME IN CONTACT WITH FOOD (STUFFS – ACCORDING TO IS 9845:1998 (R 2015)).	PASS		
		<b>Size:</b> 230mm X 300mm X 250mm (W x L x H) <b>Capacity:</b> 10 Lit <b>Material:</b> Polypropylene with Food grade <b>Cover Material:</b> Polypropylene with Food grade				
02.	<b>Irrigation System</b>	It consists of PVC pipe, PVC Control Valve, PVC Elbow, PVC Tee, Dripper, Tube 6mm, Poly tube 16mm, 4-way adaptor, Stake Dripper, fittings like Teflon Tape, Solvent, Solenoid Valve. Detailed Drawing of system is Need to be provided along with tender documents.			1	Set
03.	<b>LECA- Light Expanded clay Aggregates</b>	Most versatile growing support medium in hydroponics. The material is filled with tiny pores like (micro sponge) and thus holds perfect amount of water and drains any excess. Its size and shape ensure continuous supply of oxygen and its neutral pH helps to maintain optimum pH for the plant. 1. <b>Water Absorption</b> 18 to 20 % of size			4700	Lit.



		<ol style="list-style-type: none"> <li>2. <b>Cylinder Compressive Strength</b> 0.6 to 3.0 N/mm<sup>2</sup></li> <li>3. <b>Dry Thermal Conductivity</b> 0.09 to 0.10 W/mK</li> <li>4. <b>Surface Alkalinity</b> 7 to 9 pH</li> <li>5. <b>Bulk Density</b> 300 to 750 Kg/m<sup>3</sup></li> <li><b>pH:</b> 6.7 – 7.0</li> <li>6. <b>Size range:</b> 8mm – 16 mm</li> </ol>																			
04.	<b>Fast Plug™</b>	<p>It is a seed starter plug used as medium for germinating seeds. We provide plugs which include coco peat as the raw material</p> <ol style="list-style-type: none"> <li>1. Dimension: 30 mm</li> <li>2. EC: &lt; 1</li> <li>3. Compression ratio: 1:1.5</li> <li>4. Wet volume: 60 ml</li> <li>5. Expansion height: 45 mm</li> </ol>		940 Nos																	
05.	<b>Water tank and Pump</b>	<table border="1"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>2000 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> <tr> <td>Stock Solution</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> <tr> <td>pH Adjuster</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks. <b>Material:</b> HDPE Tank triple layered <b>Pump:</b> 2HP Pump (Centrifugal Pump)- Single phase <b>Power Rating:</b> 0.75 kW. <b>Power Supply:</b> 220V-240V. <b>Motor Power:</b> 2 hp.</p>	Tanks For	Capacity	Qty	Specification	Nutrient	2000 L	1	HDPE, 3-Layer	Stock Solution	50 L	2	HDPE	pH Adjuster	50 L	2	HDPE		1	Set
Tanks For	Capacity	Qty	Specification																		
Nutrient	2000 L	1	HDPE, 3-Layer																		
Stock Solution	50 L	2	HDPE																		
pH Adjuster	50 L	2	HDPE																		
06.	<b>Food grade NetPot</b>	<p><b>Net pot:</b> Material: Polypropylene food grade virgin plastic material <b>Size:</b> 3 Inch <b>Colour -</b> White/Black</p>		940 Nos																	
07	<b>Trellising System</b>	<p>It Consists of 5mm Gear wire across the bed for 3mm wire support, 3mm Gear wire along the bed for plant trellising, 10mm Turn Buckle and 8mm Turn Buckle for tensioning and 8mm and 5mm d-clamp for fitting. (Area: 8mX13m (2 Nos)).</p>		1 Set																	





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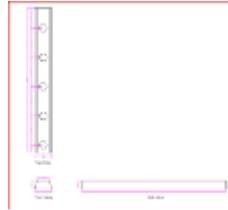



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<b>08.</b>	<b>Nutrient</b>	2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.	Nutrient Required as per 1 <sup>st</sup> Crop Cycle
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**Technical Specification for Hydroponics System (NFT A-Shape and NFT horizontal System)  
for Exotic Vegetables**

Sr. No.	Items	Specifications	Photos	Qty	Unit																		
<b>01.</b>	<b>NFT (Nutrient Film Technique)</b>	<p>NFT System made of Virgin polypropylene Food Grade Material (supplier must provide the Test Certificates) <b>Summary Results:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">SR. No.</th> <th style="width: 60%;">TESTING PARAMETERS</th> <th style="width: 30%;">RESULT</th> </tr> </thead> <tbody> <tr> <td align="center">1</td> <td>Specific Migration of BIS (2-ETHYLHEXYL) PHTHALATE (DEHP).</td> <td align="center">PASS</td> </tr> <tr> <td align="center">2</td> <td>VISIBLE COLOUR MIGRATION</td> <td align="center">PASS</td> </tr> <tr> <td align="center">3</td> <td>SPECIFIC MIGRATION OF HEAVY METALS.</td> <td align="center">PASS</td> </tr> <tr> <td align="center">4</td> <td>RESIDUAL VINYLCHLORIDE MONOMER.</td> <td align="center">PASS</td> </tr> <tr> <td align="center">5</td> <td>DETERMINATION OF OVERALL MIGRATION OF CONSTITUENTS OF PLASTIC MATERIALS AND ARTICLES INTENDED TO COME IN CONTACT WITH FOOD (STUFFS – ACCORDING TO IS 9845:1998 (R 2015)).</td> <td align="center">PASS</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>NFT gully facilitates the 'Nutrient Film Technique' by allowing a thin film of oxygenated nutrient solution to flow along the base of a flat bottom gully surface from which the plant root system can be fed.</li> <li>They have a perfectly modulated lid and have optimum growth space in the channel that enables sufficient root growth as well as headspace to meet the oxygen requirements of a rapidly growing plant.</li> </ul>	SR. No.	TESTING PARAMETERS	RESULT	1	Specific Migration of BIS (2-ETHYLHEXYL) PHTHALATE (DEHP).	PASS	2	VISIBLE COLOUR MIGRATION	PASS	3	SPECIFIC MIGRATION OF HEAVY METALS.	PASS	4	RESIDUAL VINYLCHLORIDE MONOMER.	PASS	5	DETERMINATION OF OVERALL MIGRATION OF CONSTITUENTS OF PLASTIC MATERIALS AND ARTICLES INTENDED TO COME IN CONTACT WITH FOOD (STUFFS – ACCORDING TO IS 9845:1998 (R 2015)).	PASS	  	189	Nos
SR. No.	TESTING PARAMETERS	RESULT																					
1	Specific Migration of BIS (2-ETHYLHEXYL) PHTHALATE (DEHP).	PASS																					
2	VISIBLE COLOUR MIGRATION	PASS																					
3	SPECIFIC MIGRATION OF HEAVY METALS.	PASS																					
4	RESIDUAL VINYLCHLORIDE MONOMER.	PASS																					
5	DETERMINATION OF OVERALL MIGRATION OF CONSTITUENTS OF PLASTIC MATERIALS AND ARTICLES INTENDED TO COME IN CONTACT WITH FOOD (STUFFS – ACCORDING TO IS 9845:1998 (R 2015)).	PASS																					

		<ul style="list-style-type: none"> <li>(Material type: UPVC, Food grade, UV Stabilized, Lead free)</li> <li>Food grade, Lead free NFT Channel of Trapezoidal Shape of length 6m, Openable Lid with pre-punch Cavity/Hole- 30 nos, 36 Nos and 80 Nos. of 2 inch diameter for Net Pot.</li> </ul> <p><b>Size:</b> 118mm X 6000mm X 56mm (W x L x H) <b>Water Holding Capacity:</b> 7.5-8 Lit per NFT Channel. <b>30 Holes NFT – 87 Nos</b> <b>36 Holes NFT – 87 Nos</b> <b>80 Holes NFT – 15 Nos</b></p>			
02.	<b>NFT (Nutrient Film Technique)</b>	<p>NFT System made of Virgin polypropylene Food Grade Material (supplier must provide the Test Certificates)</p> <ul style="list-style-type: none"> <li>NFT gully facilitates the 'Nutrient Film Technique' by allowing a thin film of oxygenated nutrient solution to flow along the base of a flat bottom gully surface from which the plant root system can be fed.</li> <li>They have a perfectly modulated lid and have optimum growth space in the channel that enables sufficient root growth as well as headspace to meet the oxygen requirements of a rapidly growing plant.</li> <li>(Material type: UPVC, Food grade, UV Stabilized, Lead free)</li> <li>Food grade, Lead free NFT Channel of Trapezoidal Shape of length 3m, Openable Lid with pre-punch Cavity/Hole- 15 nos. of 2 inch diameter for Net Pot.</li> </ul> <p><b>Size:</b> 118mm X 6000mm X 56mm (W x L x H) <b>Water Holding Capacity:</b> 7.5-8 Lit per NFT Channel. <b>15 Holes NFT – 100 Nos</b></p>	 	100	Nos
03.	<b>End Cap Without Spout</b>	<p>They are designed for NFT channels and are easily installable. End caps make the channels leak proof. They are easy to remove and reinstall for the cleaning of the NFT channels Food Grade, UV Stabilized, NFT Channel Inlets</p>		289	Nos



04.	<b>End Cap with Spout</b>	They are designed for NFT channels and are easily installable. End caps make the channels leak proof. They are easy to remove and reinstall for the cleaning of the NFT channels Food Grade, UV Stabilized, NFT Channel Outlets		289	Nos
05.	<b>Net Pot (White/Black)</b>	Net Pots with an upper diameter of 2 inch which allow the roots of plants like leafy vegetables, strawberries to grow through the mesh for easy breathing and growth. <b>Size:</b> 2 Inch <b>Color-</b> White/Black		8442	Nos
06.	<b>Oasis Cube</b>	Oasis is wet floral foam, the spongy phenolic foam used for real flower arranging. It soaks up water like a sponge and acts both as a preservative to prolong the life of the flowers and a support to hold them in place. The foam's structure is like that of plants and has capillary action to move water to the surface and up the stem. It usually is supplied in a brick shape.		8442	Nos
07.	<b>Growing A Shape Frame for 6m NFT</b>	It consists of Bench Frame of size 6m X 1.7m X 2.4m (L X W X H), made of GI square pipe 25mm x 25mm x 1.5mm thick. 7 Layer in each side / 14 line in each stand. Detailed Drawing of system is Need to be provided along with tender documents.	 	6	Nos
08.	<b>Growing NFT Horizontal System for 6 MNFT</b>	It consists of Bench Frame of size 1.87m X 5.6m X 0.8m (W X L X H), made of GI square pipe 25mm x 25mm with 1.6mm thick. Single layer per bench 15 NFT of 6 M. Detailed Drawing of system is Need to be provided along with tender documents.		7	Nos

09.	<b>Seedling Growing Rack</b>	<p>It consists of Bench Frame of size 1.2m X 2.4mX 0.8m (W X L X H), made of GI square pipe 25mm x 25mm with 1.6mm thick. Single Tray per bench (Size:1.2mX2.4mX0.18m) Detailed Drawing of system is Need to be provided along with tender documents.</p>		8	Nos								
10.	<b>Growing NFT Vertical Rack System for 3 M NFT</b>	<p>It consists of Rack Frame of size 1.25m X 3.0mX 2.8m (W X L X H), made of MS L-Slotted Angel 50mm x 50mm with 3mm thick with Aluminium Box Strip 12mm X 25mm. Total 5 Layer Single layer per Rack 10 NFT of 3 M. Detailed Drawing of system is Need to be provided along with tender documents.</p>		2	Nos								
11.	<b>Grow-Light</b>	<p><b>Grow Light (30w to 40w)</b> 0.04mX1.2mX0.04m (W X L X H) The lighting system should be dynamic, and the spectrum can be controlled with different types of lighting LEDs. Each LED strip should have 7-LEDs light with WRBWRBW repeating pattern to cover a length <math>\geq</math> 1200mm. LEDs should be operating at the following wavelengths: Red = 630-660nm, Blue = 440-450nm and White, Ferred =700nm colour temperature. Photosynthesis photo flux density (PPFD) provided by the LED should be <math>\geq</math> 120 <math>\mu\text{mol}/\text{m}^2/\text{s}</math>. Lighting must be able to be dynamically controlled with regards to their spectrum, intensity and duration.</p>		120	Nos								
12.	<b>Irrigation System</b>	<p>It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non-Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve fittings like Teflon Tape, Cement Solvent, Solenoid Valve. Detailed Drawing of system is Need to be provided along with tender documents.</p>		1	Set								
13.	<b>Water tank and Pump</b>	<table border="1" data-bbox="384 1939 932 2112"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>1000 L and 500 L</td> <td>3 and 2</td> <td>HDPE, 3-Layer</td> </tr> </tbody> </table>	Tanks For	Capacity	Qty	Specification	Nutrient	1000 L and 500 L	3 and 2	HDPE, 3-Layer		1	Set
Tanks For	Capacity	Qty	Specification										
Nutrient	1000 L and 500 L	3 and 2	HDPE, 3-Layer										





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		Stock Solution	50 L	4	HDPE			
		pH Adjuster	50 L	2	HDPE			
		<p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wallconstruct with bricks.  <b>Pump:</b> 1.5 HP (2 Nos), 1 HP (1 No.) and 0.5 HP (2 No.) Pump (Centrifugal Pump)- Single phase.            In-built Thermal over Load Protector.  <b>Power Rating:</b> 0.75 kW.  <b>Power Supply:</b> 220V-240V.  <b>Motor Power:</b> 1.5 hp, 1 hp and 0.5 hp</p>						
<b>14.</b>	<b>Nutrient</b>	2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.						Nutrient Required as per 1 <sup>st</sup> Crop Cycle


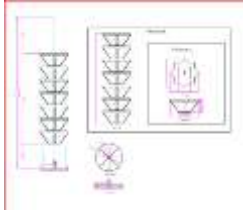


**Technical Specification for Hydroponics Aeroponics Systems**



Sr. No.	Items	Specifications	Photos	Qty	Unit
<b>01.</b>	<b>Aeroponics Systems withBench</b>	<p><b>Bench Dimensions:</b>            It consists of Bench Frame of size 1.3m X 6m X 1.5m (W X L X H), made of GI square pipe 25mmx 25mm with 1.6mm thick.  <b>Mister</b> - The Mister fogger is used with a maximum pressure of 30 PSI and a flow rate of 7.9 gph. We recommend putting it 3-4 feet above planting level and 10 inches from the edge of the surface to be irrigated. For maximum efficiency, we suggest putting foggers 2.5 feet from the irrigation line and putting the lines 3.3 feet from each other laterally.            Inner Coating Should be Food Grade</p>		08	Nos
<b>02.</b>	<b>Net Pot (White / Black)</b>	<p>Net Pots with an upper diameter of 2 or 3 inch which allow the roots of plants like leafy vegetables, strawberries to grow through the mesh for easy breathing and growth.  <b>Size:</b> 2 or 3 Inch  <b>Color-</b> White/Black</p>		2120	Nos.

03.	<b>Oasis Cube</b>	<p>Oasis is wet floral foam, the spongy phenolic foam used for real flower arranging. It soaks up water like a sponge and acts both as a preservative to prolong the life of the flowers and a support to hold them in place. The foam's structure is like that of plants and has capillary action to move water to the surface and up the stem. It usually is supplied in a brick shape.</p>		2120 Nos.																	
04.	<b>Irrigation System</b>	<p>It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non-Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve, Solenoid Valve fittings like Teflon Tape, Cement Solvent.</p>		1	Set																
05.	<b>Nutrient</b>	<p>2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.</p>		Nutrient Required as per 1 <sup>st</sup> Crop Cycle.																	
06.	<b>Water tank and Pump</b>	<table border="1" data-bbox="391 1209 933 1512"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>1000 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> <tr> <td>Stock Solution</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> <tr> <td>pH Adjuster</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks.  <b>Pump:</b> 2 HP Pump (Centrifugal Pump)- Three phase            In-built Thermal over Load Protector.  <b>Power Rating:</b> 0.75 kW.  <b>Power Supply:</b> 220V-240V.  <b>Motor Power:</b> 2hp.</p>	Tanks For	Capacity	Qty	Specification	Nutrient	1000 L	1	HDPE, 3-Layer	Stock Solution	50 L	2	HDPE	pH Adjuster	50 L	2	HDPE		1	Set
Tanks For	Capacity	Qty	Specification																		
Nutrient	1000 L	1	HDPE, 3-Layer																		
Stock Solution	50 L	2	HDPE																		
pH Adjuster	50 L	2	HDPE																		



**Technical Specification for Hydroponics Vertistack System for Exotic Vegetables**

Sr. No.	Items	Specifications	Photos	Qty	Unit
01.	<b>Vertistack System for Greenleafy and Herbs</b>	Stackable insulated pots with up to 7 layers with high strength. <b>Dimension:</b> 34.4 cm x 34.4 cm x 20.5 cm <b>Material type:</b> EPS (High Density EPS 40GSM/Plastic <b>Suitable for:</b> All leafy/Herbs/ Strawberries	 	756	No's
02.	<b>Vertistack System</b>	It consists of insulated Vertistack Pots, Vertistack Support uPVC pipes, Iron Rod at base, Base support washer for rotation of stand, Vertistack Support Tee & Cable. (7 Layer & 4 plants per Layer)	 	108	Set

03.	Media in Pot	<p><b>Cocopeat:</b> Slab dimension: 96 cm X 16 cm X 6 cm 2. EC: &lt; 1 3. Compression ratio: 5:1 4. Fibre content: up to 10% 5. Sand content: up to 3% 6. Slab weight: 5 kg (+ 5%)</p> <p><b>Coco Chips:</b> 1. Dimension: 30 cm X 30 cm X 15 cm 2. pH: 5.9 – 6.5 3. EC: &lt;0.6</p> <p>Combination of Media will be 70:30 ratio with above specifications with buffering</p>		Cocoslab (150 Nos.) and Coco chip (75 Nos)																	
04.	Irrigation System	It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non-Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve, Solenoid Valve fittings like Teflon Tape, Cement Solvent.		1	Set																
05.	Water tank and Pump	<table border="1" data-bbox="391 1131 995 1384"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>1000 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> <tr> <td>Stock Solution</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> <tr> <td>pH Adjuster</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks. <b>Pump:</b> 1.5 HP Pump (Centrifugal Pump)- Single phase In-built Thermal over Load Protector. <b>Power Rating:</b> 0.75 kW. <b>Power Supply:</b> 220V-240V. <b>Motor Power:</b> 1.5 hp.</p>	Tanks For	Capacity	Qty	Specification	Nutrient	1000 L	1	HDPE, 3-Layer	Stock Solution	50 L	2	HDPE	pH Adjuster	50 L	2	HDPE		1	Set
Tanks For	Capacity	Qty	Specification																		
Nutrient	1000 L	1	HDPE, 3-Layer																		
Stock Solution	50 L	2	HDPE																		
pH Adjuster	50 L	2	HDPE																		
06.	Trellising System	It Consists of 5mm Gear wire across the bed for 3mm wire support, 3mm Gear wire along the bed for Vertistack Stand support, 10mm Turn Buckle and 8mm Turn Buckle for tensioning and 8mm and 5mm d-clamp for fitting. (Area: 8mX13m (1 Nos)).		1	Set																





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07.	<b>Nutrient</b>	2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.	Nutrient Required as per 1 <sup>st</sup> Crop Cycle
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**Technical Specification for Hydroponics Deep Water Culture Systems**


Sr. No.	Items	Specifications	Photos	Qty	Unit
01.	<b>Deep Water Culture Systems with Bench</b>	<p><b>Stand Dimensions:</b> It consists of Bench Frame of size 1.25m X 12.3m X 0.22m (W X L X H), made of GI square pipe 25mmx 25mm with 1.6mm thick with middle support. (01 No's)</p> <p><b>White PVC Sheet:</b> <b>Size:</b> 8ft X 4ft (122*244cm) <b>Density:</b> 0.50 to 0.60 D <b>Feature:</b> High Temperature Resistance, Wear Resisting, Moisture Resistant, UV Protected, Water Proof, Termite Proof, Fire Retardant.</p> <p><b>Pond Liner: Color – Black</b> <b>Thickness – 0.75mm</b> <b>Liner Material - Virgin HDPE</b> <b>Product Type - Type 2</b> <b>Density - High Density</b> <b>Weight - 420 GSM</b> <b>Hydrostatic Resistance - Leakage at 15 kg/cm<sup>2</sup></b> <b>Mullen Burst Strength - 85 N / cm<sup>2</sup> ( Ball Brust)</b> <b>Puncture Resistance – 400N</b> <b>Strength - Seam strength before UV exposure 24 N/ mm</b> <b>Tongue Tear Resistance – 120 N</b> <b>Carbon Black Content – 2.5 %</b></p>		02	No
02.	<b>Net Pot (White / Black)</b>	<p>Net Pots with an upper diameter of 2 or 3 inch which allow the roots of plants like leafy vegetables, strawberries to grow through the mesh for easy breathing and growth.</p> <p><b>Size:</b> 2 or 3 Inch <b>Color-</b> White/Black</p>		1100 Nos.	





03.	<b>Oasis Cube</b>	<p>Oasis is wet floral foam, the spongy phenolic foam used for real flower arranging. It soaks up water like a sponge and acts both as a preservative to prolong the life of the flowers and a support to hold them in place. The foam's structure is like that of plants and has capillary action to move water to the surface and up the stem. It usually is supplied in a brick shape.</p>		1100 Nos.																	
04.	<b>Irrigation System</b>	<p>It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve, Solenoid Valve fittings like Teflon Tape, Cement Solvent.</p>		1	Set																
05.	<b>Nutrient</b>	<p>2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.</p>		Nutrient Required as per 1 <sup>st</sup> Crop Cycle.																	
06.	<b>Water tank and Pump</b>	<table border="1" data-bbox="391 1216 995 1473"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>1000 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> <tr> <td>Stock Solution</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> <tr> <td>pH Adjuster</td> <td>50 L</td> <td>2</td> <td>HDPE</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks.  <b>Pump:</b> 1.5 HP Pump (Centrifugal Pump)- Single phase            In-built Thermal over Load Protector.  <b>Power Rating:</b> 0.75 kW.  <b>Power Supply:</b> 220V-240V.  <b>Motor Power:</b> 1.5hp.</p>	Tanks For	Capacity	Qty	Specification	Nutrient	1000 L	1	HDPE, 3-Layer	Stock Solution	50 L	2	HDPE	pH Adjuster	50 L	2	HDPE		1	Set
Tanks For	Capacity	Qty	Specification																		
Nutrient	1000 L	1	HDPE, 3-Layer																		
Stock Solution	50 L	2	HDPE																		
pH Adjuster	50 L	2	HDPE																		

**Technical Specification for Hydroponics Trough System for Exotic Vegetables**

Sr. No.	Items	Specifications	Photos	Qty	Unit								
01.	<b>Trough System for Wine Type Crops</b>	Plastic troughs with length 12300 mm, width 400 mm and depth 200 mm suitable for any drainage system and can easily be assembled to best serve the grower's needs <b>Dimension:</b> 0.4m x 12.3m x 0.2m <b>Material type:</b> HDPE, UV Stabilized <b>Suitable for:</b> All wine type crops		1	No								
02.	<b>Media in Pot</b>	<b>Cocopeat:</b> Slab dimension: 96 cm X 16 cm X 6 cm 2. EC: < 1 7. Compression ratio: 5:1 8. Fibre content: up to 10% 9. Sand content: up to 3% 10. Slab weight: 5 kg (+ 5%) <b>Coco Chips:</b> 1. Dimension: 30 cm X 30 cm X 15 cm 2. pH: 5.9 – 6.5 3. EC: <0.6 Combination of Media will be 70:30 ratio with above specifications with buffering	 	Coco slab (22 Nos.) and Coco chip (11 Nos)									
03.	<b>Irrigation System</b>	It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non-Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve, Solenoid Valve fittings like Teflon Tape, Cement Solvent.		1	Set								
04.	<b>Water tank and Pump</b>	<table border="1"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Nutrient</td> <td>100 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks. <b>Pump:</b> 0.5 HP Pump (Centrifugal Pump)- Single phase In-built Thermal over Load Protector. <b>Power Rating:</b> 0.75 kW. <b>Power Supply:</b> 220V-240V. <b>Motor Power:</b> 0.5 hp.</p>	Tanks For	Capacity	Qty	Specification	Nutrient	100 L	1	HDPE, 3-Layer		1	Set
Tanks For	Capacity	Qty	Specification										
Nutrient	100 L	1	HDPE, 3-Layer										

<b>05.</b>	<b>Trellising System</b>	It Consists of 5mm Gear wire across the bed for 3mm wire support, 3mm Gear wire along the bed for plant trellising, 10mm Turn Buckle and 8mm Turn Buckle for tensioning and 8mm and 5mm d-clamp for fitting. (Trough Size: 0.4m x 12.3m (1 No.)).		1 Set
<b>06.</b>	<b>Nutrient</b>	2-Part Nutrient Mix should be a unique blend of the macro and micro-nutrients which well balanced and highly bio-available to aid growth of the plants with high purity crop specific nutrients.		Nutrient Required as per 1 <sup>st</sup> Crop Cycle

**Technical Specification for Centralized Automation system for Irrigation and Automation**

Sr. No.	Items	Specifications	Photos	Qty	Unit
<b>01.</b>	<b>Control Panel</b>	<p>Irrigation and Climate Control Panel With IoT for Cloud connectivity (MQTT) With Dosing unit</p> <p><b>1. Digital Output 18 Nos. For:</b></p> <ul style="list-style-type: none"> <li>• Fogger Pump: 1 No.</li> <li>• Irrigation Pump: 10 No.</li> <li>• Air Blower 2HP: 2 Nos.</li> <li>• Air Circulation Fan (1 Output for 2 Fans, total 8 fans): 4 Nos.</li> </ul> <p>Extra Output: For future addition if any</p> <p><b>2. Starters 18 Nos. For:</b></p> <ul style="list-style-type: none"> <li>• Fogger Pump 5 HP, 1 Phase: 1 No.</li> <li>• Air Blower 2HP, 1 Phase: 2 Nos.</li> <li>• Irrigation Pump 1.5 HP, 1 Phase (4 Nos.), 2 HP, 2 Phase (2 No.), 0.5 HP, 1 Phase (2 Nos.) and 1 HP, 1 Phase (2 Nos.): 10 No.</li> <li>• Air Circulation Fan (1 Output for 2 Fans, total 08 fans) 0.25 HP, 1 Phase: 4 Nos.</li> </ul> <p><b>3. Digital Input 14 Nos. For:</b></p> <ul style="list-style-type: none"> <li>• Fogger Pump: 1 No.</li> <li>• Irrigation Pump: 10 No.</li> <li>• Air Blower 2HP: 2 Nos.</li> </ul> <p><b>4. Analog Input 6 Nos. For:</b></p> <ul style="list-style-type: none"> <li>• Water Temperature Sensor: 1 No.(Cable 5mtr, probe 50mm length)</li> </ul>	 	1	Set






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		<ul style="list-style-type: none"> <li>• Ambient Temperature Sensor: 1 No.</li> <li>• Humidity Sensor: 1 No</li> <li>• pH Probe: 4 No</li> <li>• Electric Conductivity Probe: 4 No</li> <li>• CO2 Sensor: 1 No</li> </ul> <ul style="list-style-type: none"> <li>• <b>Energy Meter</b> 3 Phase with 3 Nos. External CTs: 1 No's</li> </ul> <p><b>IoT Device</b></p> <ul style="list-style-type: none"> <li>• Suitable to IoT communication using MQTT</li> <li>• Connectivity to Customer's Cloud Service</li> <li>• Control commands feature from Cloud to Control panel</li> </ul> <p><b>7. HMI: 7" Touch screen coloured HMI</b></p> <ul style="list-style-type: none"> <li>• HMI along with its software specific to farm</li> <li>• HMI connectivity with Control panel</li> <li>• Completely wired control panel</li> <li>• Auto / Manual switches for above pumps and AC Fans</li> </ul>			
02.	<b>Irrigation System</b>	It consists of uPVC pipe, uPVC Flow Control Valve, uPVC Elbow, uPVC Tee, uPVC Reducer, uPVC Non-Return Valve, Poly Tube 6mm, Lateral 16mm, PVC Pipe, PVC Elbow, PVC Tee, PVC Flow Control Valve, Solenoid Valve fittings like Teflon Tape, Cement Solvent.		1	Set
<b><u>Utility Material And Common Irrigation Material</u></b>					
01	<b>Hanna pH and EC Meter</b>	<p>The HI98129 makes measuring pH quick and easy! This lightweight, waterproof tester offers high accuracy pH, low range EC/TDS (0 to 3999 <math>\mu</math>S/cm EC/ 0 to 2000 ppm TDS) and temperature measurements in a single handheld unit! No more switching between meters for your routine measurements.</p> <p><b>3 sensors in a single meter</b></p> <ul style="list-style-type: none"> <li>• pH electrode with extractable junction</li> <li>• Amperometric EC/TDS sensor</li> <li>• Exposed temperature probe for faster EC/TDS readings</li> </ul>		01	No

02	<b>Lux Meter for Measuring Light</b>	The HTC LX-101A digital lux meter is the perfect tool for measuring light levels. It is easy to use and provides accurate readings.			1	No												
03.	<b>Air Compressor / Blower for all hydroponic system</b>	<b>Air compressors:</b> <ul style="list-style-type: none"> <li>• Reciprocating – Lubricated &amp; oil free.</li> <li>• Screw – Lubricated &amp; oil free.</li> <li>• Vacuum pump.</li> <li>• Pet bottle air compressor.</li> </ul> Oil free Piston compressor, 220 LPM (7.6 cfm), 8 bar max. pressure, 50 ltrs tank, 2 HP motor, (Horizontal Tank),			2	No												
04.	<b>Fresh Water tank and RO Water Tank</b>	<table border="1" data-bbox="384 987 1002 1283"> <thead> <tr> <th>Tanks For</th> <th>Capacity</th> <th>Qty</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>Fresh Water Tank</td> <td>10000 L</td> <td>1</td> <td>HDPE, 3-Layer</td> </tr> <tr> <td>RO Water Tank</td> <td>5000 L</td> <td>2</td> <td>HDPE</td> </tr> </tbody> </table> <p>Nutrient water tank should bury in the ground with proper PCC at Bottom and side wall construct with bricks.</p>	Tanks For	Capacity	Qty	Specification	Fresh Water Tank	10000 L	1	HDPE, 3-Layer	RO Water Tank	5000 L	2	HDPE			1	Set
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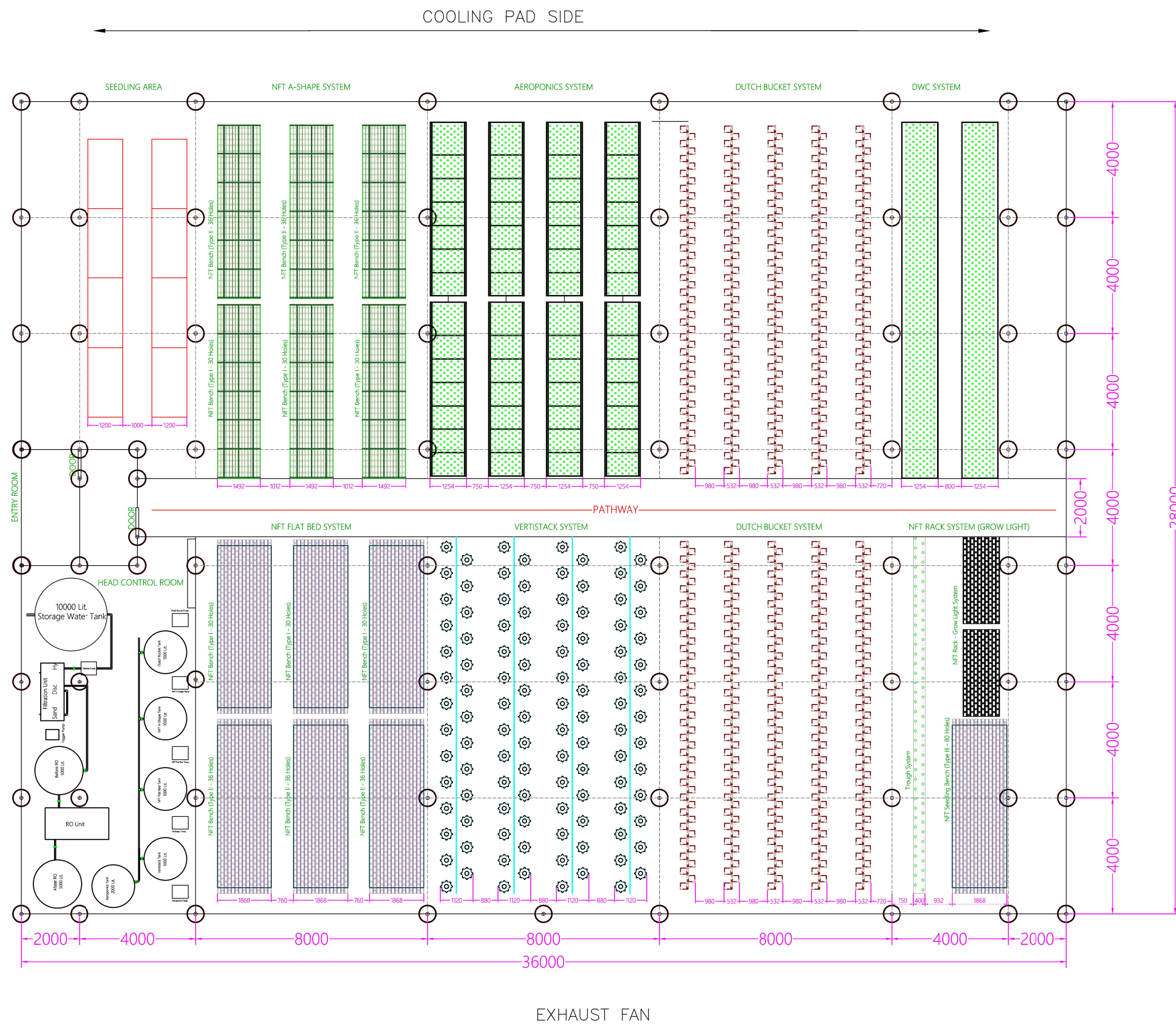
**Overall Hydroponics Systems Layout ( Need to Install in 36 X 28 M Fan & Pad Type Polyhouse)**







- NOTES:-  
 1) All Dimensions are in mm  
 2) The Drawing is only for illustration purpose only



<b>G Deep Water Culture System</b>			
1	Size:-1.25mX12.3mX0.22m		
2	Quantity of Bed	02	Nos
3	Plants Per Bed	550	Nos
4	<b>Total No of Plants</b>	<b>1,100</b>	<b>Nos</b>

<b>H NFT Rack System</b>			
1	Size:- 1.25mX3mX2.8m		
2	Quantity of Rack	02	Nos
3	Channels Per Rack	50	Nos
4	Plants per Channel	15	Nos
5	<b>Total No of Plants</b>	<b>1500</b>	<b>Nos</b>

<b>I Trough System</b>			
1	Size:-0.4mX12.3mX0.20m		
2	Quantity of Trough	01	Nos
3	Plants Per Meter	06	Nos
4	<b>Total No of Plants</b>	<b>73</b>	<b>Nos</b>

1	<b>TOTAL GROWING PLANTS</b>	<b>15,699</b>	<b>Nos</b>
2	<b>TOTAL SEEDLING PLANTS</b>	<b>9,600</b>	<b>Nos</b>

<b>A Polyhouse</b>			
1	Type: Hi Tech Polyhouse With Fan And Pad Cooling System		
2	Size: 36mX28m		
3	Area	1008	Sqm
<b>B NFT A-Shape (Type I - 30 Holes)</b>			
1	Size:-1.49mX6.0mX2.5m		
2	Quantity of Bench	03	Nos
3	Channels Per Bench	14	Nos
4	Plants per Channel	30	Nos
5	<b>Total No of Plants</b>	<b>1,260</b>	<b>Nos</b>

<b>B NFT A-Shape (Type II - 36 Holes)</b>			
1	Size:-1.49mX6.0mX2.5m		
2	Quantity of Bench	03	Nos
3	Channels Per Bench	14	Nos
4	Plants per Channel	36	Nos
5	<b>Total No of Plants</b>	<b>1,512</b>	<b>Nos</b>

<b>C NFT Flat Bed (Type I - 30 Holes)</b>			
1	Size:-1.87mX6.0mX0.8m		
2	Quantity of Bench	03	Nos
3	Channels Per Bench	15	Nos
4	Plants per Channel	30	Nos
5	<b>Total No of Plants</b>	<b>1,350</b>	<b>Nos</b>

<b>C NFT Flat Bed (Type II - 36 Holes)</b>			
1	Size:-1.87mX6.0mX0.8m		
2	Quantity of Bench	03	Nos
3	Channels Per Bench	15	Nos
4	Plants per Channel	36	Nos
5	<b>Total No of Plants</b>	<b>1,620</b>	<b>Nos</b>

<b>C NFT Seedling Flat Bed (Type III - 80 Holes)</b>			
1	Size:-1.87mX6.0mX0.8m		
2	Quantity of Bench	01	Nos
3	Channels Per Bench	15	Nos
4	Plants per Channel	80	Nos
5	<b>Total No of Plants</b>	<b>1,200</b>	<b>Nos</b>

<b>D Dutch Bucket</b>			
1	Size: 0.23mX0.3mX0.25m		
2	Total Dutch Bucket	470	Nos
3	Plants per Dutch Bucket	02	Nos
4	<b>Total No of Plants</b>	<b>940</b>	<b>Nos</b>

<b>E Vertistack</b>			
1	Qty of Vertistack	108	Nos
2	Layer of Vertistack	07	Nos
3	Plant per Layer	04	Nos
4	<b>Total No of Plants</b>	<b>3,024</b>	<b>Nos</b>

<b>F Aeroponic</b>			
1	Size: 1.3mX6mX1.5m		
2	Total No Of Bench	08	Nos
3	Total No Of Plants Per Bench	265	Nos
4	<b>Total No of Plants</b>	<b>2,120</b>	<b>Nos</b>