



ಭಾ. ಕೃ. ಅನು. ಪ - ಭಾರತೀಯ ತೋಟಗಾರಿಕಾ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ
ಹೆಸರಗಟ್ಟೆ ಲೇಕ್ ಪೋಸ್ಟ್, ಬೆಂಗಳೂರು-560 089

भा.कृ.अनु.प.- भारतीय बागवानी अनुसंधान संस्थान

हेसरगट्टा लेक पोस्ट, बेंगलूरु - 560 089

ICAR-Indian Institute of Horticultural Research

Hesaraghatta Lake Post, Bengaluru - 560 089

EPABX: 080-23086100 Extn: 217, 218 & 452

FAX: 080-28466291 – Email: purchase.iihr@icar.gov.in



F.No.8-05/2023-24/IIHR/FC/1766074/

Dated: 14.12.2023

NOTICE FOR INVITING TENDER THROUGH E-PROCUREMENT

Online Bids are invited from interested firms under **Two bid system (Technical bid/financial bid)** for **Supply & Installation of Automated Fertigation unit at ICAR-IIHR Experimental Farm Hirehalli, Tumkur - 572104** and Manual bids shall not be entertained.

Tender documents may be downloaded from e-procurement website of CPPP

<https://eprocure.gov.in/eprocure/app> as per the schedule given in CRITICAL DATE SHEET as under:

CRITICAL DATE SHEET

Tender No.	F.No.8-05/2023-24/IIHR/FC/1766074
Name of Organization	ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH, Hesaraghatta Lake Post, Bangalore
Date and Time for Issue/Publishing	15.12.2023 at 12:00 PM
Document Download/Sale Start Date and Time	15.12.2023 at 12:00 PM
Bid Submission start Date and Time	15.12.2023 at 12:00 PM
Bid Submission End Date and Time	06.01.2024 at 03:00 PM
Date and Time for Opening of Technical Bids	08.01.2024 at 10:00 AM
Pre-bid Meeting	21.12.2023 at 11:30 AM
Address for Communication	Asstt. Admn. Officer, IIHR, Hesaraghatta Lake Post, Bangalore

Sd/-

CHIEF ADMINISTRATIVE OFFICER

INSTRUCTIONS FOR ONLINE BID SUBMISSION

1. The Tender form/bidder documents may be downloaded from the <https://eprocure.gov.in/eprocure/app>. **Online submission of Bids through Central Public Procurement Portal (<https://eprocure.gov.in/eprocure/app>) is mandatory.** Manual/Offline bids shall not be accepted under any circumstances.
2. Tenderers/bidders are requested to visit the website <https://eprocure.gov.in/eprocure/app> regularly. Any changes/modifications in tender enquiry will be intimated by corrigendum through this website only.
3. In case, any holiday is declared by the Government on the day of opening, the tenders will be opened on the next working day at the same time. The Council reserves the right to accept or reject any or all the tenders.
4. The interested Firms are required to deposit (in original) **EMD of Rs.63,000/-** in the form of Demand Draft in favour of **THE DIRECTOR, ICAR, UNIT-IIHR payable at Bangalore** may be address to **Senior Admn. Officer (Purchase), IIHR, Hessaraghatta Lake Post, Bangalore-560089** on or before **bid opening date and time as mentioned in the Critical Date Sheet.**
5. **Please note that only online Bids will be accepted.**
6. Bidders need not to come at the time of Technical as well as financial bid opening at IIHR. They can view live bid opening after login on CPPP e-procurement portal at their remote end. If any dispute arises, Within Bengaluru Jurisdiction only.
7. The firms are also required to upload copies of the following documents:-
 - **Technical Bid**
 - a) Scanned copy of MSME/ Udyog Aadhar or NSIC is a must for EMD Exemption otherwise, firms have to furnish EMD.
 - b) PAN Card copy
 - c) GST Number with Registration Certificate
 - d) Bank details of the firm
 - e) Income Tax Returns for the last three years (2019-20,2020-21,2021-22).
 - f) Turnover of the business should be Rs.75,00,000/- per year (2019-20,2020-21,2021-22). **And Chartered Accountant certified profit and Loss account; Balance sheet to this effect may be enclosed**
 - g) **Latest copies of the GST returns for six months (January to June 2023)**
 - h) Scanned copy of duly signed Annexure-I, II, IV & Tender acceptance letter (Annexure-V) duly signed.
 - i) Scanned copy of User List/Purchase Orders of its satisfactory installation
 - j) Scanned Copy of Make and model of all systems, sub systems and additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups

➤ **Financial Bid:-**

- a) Price Bid as BOQ XXX.xls

Sd/-

CHIEF ADMINISTRATIVE OFFICER

Annexure-II

Terms & Conditions

1. The tenderer shall quote rates GST, Freight charges if any, should be indicated separately.
2. The rates should be quoted as per the BOQ uploaded on the CPP Portal (reference may be obtained from Annexure-III). GST, if any, should be indicated separately. It must be noted that the contract shall be awarded to the firm which fulfils all the required terms and conditions and remains L-I for any particular items.
3. The firm must also possess valid PAN No. & GST registration number and a copy of the same must also be enclosed with the tender document.
4. The firms are also required to upload copies of the following documents:-
 - A) Scanned copy of MSME/ Udyog Aadhar or NSIC is a must for EMD Exemption otherwise, firms have to furnish EMD
 - B) Scanned copy of the documents Registered with PWD/CPWD/MES/Railways
 - C) PAN Card copy
 - D) GST Number with Registration Certificate
 - E) Bank details of the firm
 - F) Income Tax Returns for the last three years (2019-20,2020-21,2021-22)
 - G) **Turnover of the business should be Rs.75,00,000/- per year (2019-20,2020-21,2021-22). And Chartered Accountant certified profit and Loss account; Balance sheet to this effect may be enclosed.**
 - H) **Latest copies of the GST returns for six months (January to June 2023)**
 - I) Scanned copy of duly signed Annexure-I, II, IV & Tender acceptance letter (Annexure-V) duly signed
 - J) Scanned copy of User List/Purchase Orders of its satisfactory installation
 - K) Scanned Copy of Make and model of all systems, sub systems and additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups
5. Modification in the tender documents after the closing date is not permissible.
6. The successful firm shall have to **Supply & Install automated fertigation unit at ICAR-IIHR Experimental Farm Hirehalli,, Tumkur - 572104** within **30 days** from the date of confirmed supply order and if the materials are not supplied in time then EMD shall be forfeited. The rates quoted shall be valid for one year from the date of opening of tender.
7. The contractor/bidder or his representative may contact the undersigned at **Tel. No. 080-23086100 Extn: 217** for any further clarification. No variation in terms of quality of the items shall
8. be entertained or else EMD/Security deposit shall be forfeited.
9. The Director, ICAR-IIHR, shall have the right to reject all or any of the offers, accept more than one offer, and assign part of the job without assigning any reason.
10. Merely quoting of lowest rates does not mean that order shall be given to that firm. The competent authority will finally decide on the basis of quality & performance of past installations.
11. The interested Firms are required to deposit (in original) an **Earnest Money Deposit of Rs.63,000/-** amount mentioned against item in the form of Demand Draft from any of the Commercial Bank in favour of **THE DIRECTOR, ICAR, UNIT-IIHR payable at Bangalore** may be address to **Asstt. Admn. Officer, IIHR, Hessaraghatta Lake Post, Bangalore-560089 on or before bid opening date and time as mentioned in the Critical Date Sheet**. No quotation shall be considered without the earnest money deposit. Demand draft drawn in favour of any officer other than 'THE DIRECTOR, ICAR UNIT-IIHR payable at Bangalore' will not be accepted and the tender will be rejected. The earnest money will be refunded only after the finalization of the procurement and no interest will be paid on earnest money. The request letter for refund of EMD & performance security is to be submitted by the firm within six months from date of tender notification.
12. Rates once finalized will not be enhanced/reduced during the term of the contract.
13. In case, the successful bidder shows inability at any stage, after the contract is finalized and awarded, for whatsoever reason(s), to honour the contract, the earnest money /performance security deposited would be forfeited.

14. The Director, ICAR-IIHR reserves the right to cancel the contract at any time during the currency period of the contract without giving any reason.
15. The firm, to whom the tender will be awarded, will have to deposit the performance security equal to 5% of the basic value of equipment cost at the time of installation of equipment. If the services are not found to be satisfactory, the performance security is liable to be forfeited. No interest will be paid on performance security.
16. If any dispute(s) arises between IIHR and the firm with reference to the contract, IIHR will decide it and its decision will be binding on the firms.
17. Bid Validity: 90 days
18. Our Institute is registered with DSIR and we are exempted from Excise Duty & Custom Duty. Hence CDEC/DSIR Certificate will be provided to the firm, if demanded. GST/Central Excise should be quoted accordingly.
19. If any disputes arise all such disputes will be subject to Bangalore Jurisdiction.
20. Payment:- The payment will be released after satisfactory certificate from the Indentor.

Payment Terms: In order to facilitate for speedy settlement of payment you are requested to furnish the following details as below:

1. **Name of the firm:**
2. **Name of the Bank:**
3. **IFSC Code of Bank:**
4. **Name of the Account & Account No.:**
5. **Branch Code:**
6. **Amount to be paid:**
7. **E-mail address of the party:**
8. **GST No. and Pan No. Copies**

21. Terms of delivery:

Delivery at site viz. — ICAR-IIHR Experimental Farm Hirehalli, Tumkur - 572104.

22. Installation:- Within *10 days from the date of receipt of equipment* in the Institute failing which Liquidated Damage clause shall apply.
Liquidated Damage clause: It would be realized @ 0.5% (half per cent) of the base price (excluding taxes) of the delayed goods for each week of delay subject to maximum 20%.
23. Prices:

Price structure:

- a) **The tenderer shall quote for the complete requirement of goods and services and for the full quantity as shown against a serial number in the List of Requirements in Annexure - VIII.** Unless otherwise specified in Annexure – VIII, the tenderers are, however, free not to quote against all the serial numbers mentioned in the list of requirements (in case there are more than one serial number in the list of requirements).
- b) **The guarantee & warranty of the equipment is One year from the date of Installation.**
- c) **The rates and prices quoted shall be in Indian Rupees**
- d) **GST rate and amount and basic value of equipment are to shown separately along with GST registration No. and Pan No. otherwise tender will be rejected.**
- e) The rates and prices quoted by the supplier shall remain firm and fixed during the currency of the contract and shall not be subject to variation on any account, whatsoever, including statutory variations, if any.
- f) The performance security / Security deposit, deposited by the successful bidder shall be released on satisfactorily certificate and also producing the relevant documents of GST returns for having remitted the GST amount paid by the institute to the concerned authority.

Dated

‘Terms & Conditions are acceptable’
(Authorized signatory of the firm)

(Reference for BOQ) (To be quoted in format provided on CPP Portal)

Price bid for “Supply & Installation of automated fertigation unit at ICAR-IIHR Experimental Farm Hirehalli” Tumkur - 572104.

Sl. No.	Name of items <i>Specifications</i>	Qty	Per unit price* (in figures/words) (as per BOQ)
	Fertigation – Irrigation – Fogging control		
	1. Controller: PLC based- 1 No	01 No	
	2. User operating system: Touch screen based operator window – 1 No		
	3. Fertilizer dosing channels with capacity of 400 LPH – 6 Nos		
	4. Irrigation pump @included		
	5. Flow monitoring – Flow indicators and valves provided for dosing channel		
	6. Irrigation channel: Time, volume and soil moisture range		
	7. Water meter – 1 No		
	8. Field solenoid valves and control for Fertigation – Irrigation – Fogging included (extendable if required)		
	9. All necessary pressure monitoring gauges, pressure relief valves, non-return valves, internal control valves and pressure piping will be placed for internal fertigation control system		
	10. EC and pH desired settings for each valve, each crop and various phases of same crop can be controlled.		
	11. Stock solution line tank and filters-valves and pile accessories –included		
	12. pH meter – 1 no		
	13. EC meter -1 no		
	1. Fertigation controller and mixing tank based dosing system – 1 set		
	a. PLC based		
	b. HMI @7” screen-user interface		
	c. Remote control – module -1 no (internet provided by customer)		
	d. Autom-manual-bypass mode control switches		
	e. 1000va UPS for control supply		
	f. Input power safety		

<p>g. Over load safety</p> <p>h. Isolation transformer for control supply</p> <p>i. EC pH electrodes – 3 sets</p> <p>j. EC pH controllers – 3 sets</p> <p>k. Soil moisture sensors – 3 sets</p> <p>l. Water flow/liter counter – 1 no</p> <p>m. Level controllers 2 nos</p> <p>n. Fertigation- irrigation valves control and supply 4 nos</p> <p>o. Mixing valve control and supply</p> <p>p. Dosing valves control and supply – 5 nos</p> <p>q. Filling pump - 3 HP – open well – control</p> <p>r. System pump SS316 Grade – 4 KW control and supply</p> <p>s. Rotameters – 5 nos</p> <p>t. Venturi sets – 5 nos</p> <p>u. Check valves and flow control valve – 5 sets</p> <p>v. Pressure relief valve – 1 no</p> <p>w. Stock tanks and mixing tank – 500 ltr – 6 nos</p> <p>x. Stock line filters – 5 nos</p> <p>y. Automatic stock mixing setup – 1 no supply and control</p> <p>z. PVC/UPVC fittings and pipes for internal dosing – filling the stock tanks – mixing tanks- stock mixing setup – 1 set</p> <p>aa. Cables for sensors, valves, pumps and mains – 1 set</p> <p>bb. Rust free aluminum profile frame to mount the control panel and dosing unit</p> <p>2. Drip system and head unit - 1 set</p> <p>a. Filling pump – 3 HP -1 no</p> <p>b. HDPE pipe with accessories@10 mtr – 1 set</p> <p>c. 25 cm sand and disc filters with sand and accessories – 1 set</p> <p>d. PVS pipes @63mm- 4 kg- 35 lengths</p> <p>e. Lateral pipe fenolex/netafim-16mm- 3600 mtr</p> <p>f. PCD drips @8LPH online – 2000 nos</p> <p>g. Flush valves – 1 set</p> <p>3. Civil works</p> <p>a. Water source – 3 lakh litres capacity</p> <p>b. Shed – 20ft × 15ft × 12ft height</p> <p>c. Stock tanks bed 3 ft width × 20 ft long × 1.5 ft height</p> <p>d. Trench – earth work for pvc piping</p> <p>4. Miscellaneous</p> <p>a. One exclusive android mobile with relevant software</p> <p>b. Transport and installation charges</p> <p>c. Other accessories.</p>		
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- ☐ Items should be of reputed make and suitable for high end elite users
- ☐ GST/Excise duty extra as applicable should be indicated separately in the column provided.
- ☐ **The system is to be supply & installed at ICAR-IIHR, Experimental Farm Hirehalli. Tumkur - 572104.**

Note: The above mentioned Financial Proposal/Commercial bid format is provided as BoQ_XXXX/xls along with this tender document at <https://eprocure.gov.in/eprocure/app>. Bidders are advised to download this BoQ_XXXX.xls as it is and quote their offer/rates in the permitted column and upload the same in the Financial bid. **Bidder shall not tamper/modify downloaded price bid template in any manner.** In case if the same is found to be tempered/modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with IIHR.

Annexure-IV

EPABX: 080-23086100 Extn: 217
FAX: 080-28466291 - Email: purchase.ihr@icar.gov.in

**ICAR-INDIAN INSTITUTE OF HORTICULTURAL RESEARCH****HESSARAGHATTA LAKE POST, BANGALORE-560 089**

Name of the Firm _____
Registered/Postal Address _____
Email id: _____
Contact person name: _____
Contact mobile number: _____

1	Permanent Account Number (PAN)	
2	GST Registration No.	
3	Bank Details	
a	Bank Name	
b	Branch Address	
c	Account Number	
d	Type of account (current/saving) MICR No.	
e	IFSC Code	
f	Contact person name: Email : Mobile number:	

Date:

Name of the Authorized Signatory

Place:

Stamp & Signature

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,
The Director,
ICAR-IIHR,
Hesaraghatta Lake Post,
Bangalore-560089.

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No. _____

Name of Tender/Work:

Dear Sir,

1. I/ We have downloaded/obtained the tender document(s) for the above mentioned 'Tender/work' from the web site(s) namely:

As per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc...) which form part of the contract agreement and I/We shall abide hereby the terms/conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter.
4. I/we hereby unconditionally accept the tender conditions of above mentioned tender documents/corrigendum(s) in its totality/entirely.
5. I/we do hereby declare that our Firm has not been black-listed/debarred by any Govt. Department/Public sector undertaking.
6. I/we certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject that bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

INSTRUCTIONS FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- ☐ Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL <https://eprocure.gov.in/eprocure/app>.) by clicking on the link '**Online bidder Enrollment**' on the CPP Portal which is free of charge.
- ☐ As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- ☐ Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- ☐ Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (class II or Class III certificates with signing key usage) issued by any certifying authority recognized by CCA India (e.g. Sify/nCode/eMudhra etc.) with their profile.
- ☐ Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- ☐ Bidder then logs in to the site through the secured log-in by entering their users ID/password and the password of the DSC/e-Token.

SEARCHING FOR TENDER DOCUMENTS

- ☐ There are various search options built in the CPP Portal. To facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- ☐ Once the bidders have selected the tenders they are interested in, they may download the required documents/tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS/e-mail in case there is any corrigendum issued to the tender document.
- ☐ The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification/help from the Helpdesk.

PREPARATION OF BIDS

- ☐ Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- ☐ Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents- including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- ☐ Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF/XLS/RAR/DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

- ❑ To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use 'My Space' or 'Other important Documents' area available to them to upload such documents. These documents may be directly submitted from the 'My Space' area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

- ❑ Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other technical issues.
- ❑ The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- ❑ Bidder has to select the payment option as 'offline' to pay the tender fee/EMD as applicable and enter details of the instrument.
- ❑ Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- ❑ Bidders are requested to note that they should necessarily submit their financial bids in the Format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cell with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- ❑ The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- ❑ All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- ❑ The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- ❑ Upon the successful and timely submission of bids (i.e. after clicking 'Freeze Bid Submission' in the portal), the portal will give a successful bid submission message and a bid summary will be displayed with the bid no. and the date and time of submission of the bid with all other relevant details.
- The bid summary has to be printed and kept as an acknowledgement of the submission of the bid.

ASSISTANCE TO BIDDERS

- ❑ Any queries relating to the tender documents and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender.
- ❑ Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

Details of Equipments & EMD

Sl. No.	Purchase of item	Qty	Earnest Money in INR	File. No. for reference
1	Mentioned in Annexure-VIII		Rs.63,000/-	F.No.8-05/2023-24/IIHR/FC/1766074

Note: EMD defined on to the Portal is MINIMUM. Bidder has to submit the EMD as per item for which quoting for.

***Installation at ICAR-IIHR Experimental Farm Hirehalli, Tumkur - 572104**

Annexure-VIII

Sl. No.	<u>Detailed Technical Specifications for Supply & Installation of Automated Fertigation unit at ICAR-IIHR Experimental Farm Hirehalli, Tumkur - 572104</u>	Qty	Per unit price* (in figures/ words) (as per BOQ)
1	Controller: PLC based	1 No	
2	User operating system: Touch screen based operator window	1 No	
3	Fertilizer dosing channels with capacity of 400 LPH	6 Nos	
4	Irrigation pump @included		
5	Flow monitoring – Flow indicators and valves provided for dosing channel		
6	Irrigation channel: Time, volume and soil moisture range		
7	Water meter	1 No	
8	Field solenoid valves and control for Fertigation – Irrigation – Fogging included (extendable if required)		
9	All necessary pressure monitoring gauges, pressure relief valves, non-return valves, internal control valves and pressure piping will be placed for internal fertigation control system		
10	EC and pH desired settings for each valve, each crop and various phases of same crop can be controlled		
11	Stock solution line tank and filters-valves and pile accessories –included		
12	pH meter	1 no	
13	EC meter	1 no	
	1. Fertigation controller and mixing tank based dosing system – 1 set		
	a. PLC based		
	b. HMI @7” screen-user interface		
	c. Remote control – module -1 no (internet provided by customer)	1no	

	d. Autom-manual-bypass mode control switches		
	e. 1000va UPS for control supply		
	f. Input power safety		
	g. Over load safety		
	h. Isolation transformer for control supply		
	i. EC pH electrodes	3 sets	
	j. EC pH controllers	3 sets	
	k. Soil moisture sensors	3 sets	
	l. Water flow/liter counter	1 no	
	m. Level controllers	2 nos	
	n. Fertigation- irrigation valves control and supply	4 nos	
	o. Mixing valve control and supply		
	p. Dosing valves control and supply	5 nos	
	q. Filling pump - 3 HP – open well – control		
	r. System pump SS316 Grade – 4 KW control and supply		
	s. Rotameters	5 nos	
	t. Venturi sets	5 nos	
	u. Check valves and flow control valve	5 sets	
	v. Pressure relief valve	1 no	
	w. Stock tanks and mixing tank – 500 ltr	6 nos	
	x. Stock line filters	5 nos	
	y. Automatic stock mixing setup – 1 no supply and control	1 no	
	z. PVC/UPVC fittings and pipes for internal dosing – filling the stock tanks – mixing tanks- stock mixing setup	1 set	
	aa. Cables for sensors, valves, pumps and mains – 1 set	1 set	

	bb. Rust free aluminum profile frame to mount the control panel and dosing unit		
	2. Drip system and head unit	1 set	
	a. Filling pump – 3 HP	1 no	
	b. HDPE pipe with accessories@ 10 mtr	1 set	
	c. 25 cm sand and disc filters with sand and accessories	1 set	
	d. PVS pipes @63mm- 4 kg- 35 lengths		
	e. Lateral pipe fenolex/netafim-16mm- 3600 mtr		
	f. PCD drips @8LPH online	2000 no	
	g. Flush valves	1 set	
	3. Civil works		
	a. Water source – 3 lakh litres capacity		
	b. Shed – 20ft × 15ft × 12ft height		
	c. Stock tanks bed 3 ft width × 20 ft long × 1.5 ft height		
	d. Trench – earth work for pvc piping		
	4. Miscellaneous		
	a. One exclusive android mobile of latest reputed band with relevant software	1 nos	
	b. Transport and installation charges		
	c. Other accessories essentially required		

Sd/-
CHIEF ADMINISTRATIVE OFFICER