Dr. Y. S. R. HORTICULTURAL UNIVERSITY
VENKATARAMANNAGUDEM – 534 101

BID DOCUMENT (Re-Tender)

for

SUPPLY and Installation of Equipment for Food Quality Testing Lab (Quality Control Lab)

at
Horticultural Research Station,
Lam Farm, Guntur District
and
Citrus Research Station,
Tirupati

Dr. Y. S. R. HORTICULTURAL UNIVERSITY
VENKATARAMANNAGUDEM – 534 101
WEST GODAVARI DISTRICT
ANDHRA PRADSEH

Dr. Y S R HORTICULTURAL UNIVERSITY
ADMIN. OFFICE- V R GUDEM,
West Godavari Dist.

Tender Notice No	: NIT.No:1/ Dr YSRHU/2016-17
Date of Commencement of DOWN LOADING OF THE BID DOCUMENT	: 21.03.2017 AT 3.00 PM
Last date for receipt of bids.	: 06.04.2017AT 10.30 AM at Co- Principal Investigator, Pr. Scientist (Hort.) & Head HRS, Lam
TIME AND DATE OF Presentation of Detailed Project Report and opening of Technical bid at	:06.04.2017 AT 11.00AM **Co- Principal Investigator, Pr. Scientist (Hort.) & Head HRS, Lam**

ADDRESS FOR COMMUNICATION:

THE CO- PRINCIPAL INVESTIGATOR &
Pr. Scientist (Hort.) & Head
HRS, Lam
GUNTUR-522 034

Mobile No: 7382633661
email: headhrs_lam@drysrhu.edu.in

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

Invitation for Bids

I) The location of the site is at Horticultural Research Station, Lam, Guntur and Citrus Research Station, Tirupati of Andhra Pradesh.

II) Bids are invited from internationally reputed manufacturers/their authorized representatives only, for the equipment listed below. The authorized representative must attach an authorization letter from the manufacturers along with the tender without which the tender will be rejected (for further reference please refer point 16 in Annexure I (Part-I).

III) The required land, buildings, water and power connection will be provided by the University and the bidder has to supply equipment and carry out installation as per the approved tender schedule. Successful trial run and maintaining the equipment supplied for 24 months including all maintenance and duly rectifying all defects during the above period, at the cost of bidder. For some of the equipment where guarantee period was mentioned specifically for two years will be mandatory.

IV) The bidders are also required to furnish their previous experience certificate for the supply of similar equipment.

V) The installation of equipment must be carried out as per the standard specifications under the supervision of concerned authorities of HRS, Lam & CRS, Tirupati and has to be got certified by him, duly handing over all warranty certificates for the said equipment.

1. All bidders must quote equipment wise; otherwise bid will be summarily rejected.
2. All local taxes to be paid to the government shall be included in the price quoted as FOR destination.
3. Any custom duty applicable shall be paid by the vendor and the same will be reimbursed to the vendor against submission of proof of duty payment.

VI) The bids should be submitted within time specified at the office of Co-Principal Investigator, Principal Scientist (Hort) & Head, Horticultural Research Station, Lam, Guntur along with **EMD** as specified here under against each item.

Sl. No	Equipment	EMD Amount to be paid (in Rupees)	Processing fee
HRS, LAM			
1	LC-MS/MS	2,60,000/-	3,000/-
2	GC 1 (FID + ECD + NPD)	45,000/-	3,000/-
3	GC MSMS (Triple QUAD)	2,00,000/-	3,000/-
4	UPLC	1,10,000/-	3,000/-
5	ICP-OES	1,55,000/-	3,000/-
6	Stereo Zoom Trinocular Microscope with image analysis system	30,000/-	3,000/-
7	Protein analyzer	50,000/-	3,000/-
8	UPS 20 & 30 KVA	30,000/-	3,000/-
9	Microwave digestion system	30,000/-	3,000/-
10	UV/VIS/NIR Spectrophotometer	12,000/-	--
11	Rotary shaker for culture with temperature control	10,000/-	--

12	Fat analyzer	12,000/-	--
13	Colour matching spectrophotometer	16,000/-	--
CRS, Tirupati			
14	Real Time PCR	49,000/-	3,000/-
15	Automatic DNA and RNA isolation and analysis system	45,000/-	3,000/-
16	Fluorescent microscope plant pathology studies	32,000/-	3,000/-
17	-80^{O}C Deep freezer	14,000/-	--
18	Colony counter	12,000/-	--

Note: For the items at S. No. 10-13, 17 & 18 the common processing fee will be Rs.5,000/- irrespective of the number of items quoted.

Bidders must pay the Earnest Money Deposit (EMD) amount and the Processing Fee specified as above against the item in the form of crossed Demand Drafts separately drawn **in favour of <u>The Comptroller, Dr YSRHU, Venkataramannagudem, Tadepalligudem</u>** payable at Andhra Bank/ any nationalized bank, Tadepalligudem. The processing fee is non-refundable and tender documents without EMD or Processing fee will be rejected.

VII) Specifications given are indicative and the tender is to give a detailed description and specifications for each equipment. The same would be given weightage in finalizing the tender.

VIII) The equipment to be supplied by the tenderers should be branded and meet the quality standard as per the existing norms. Period of warranty shall be 2 year from the date of supply as demanded in the tender.

IX) The bids invited on two part basis, the Bidder shall seal the technical bid and the priced bid in two separate envelops duly marked as "Technical bid" and "price bid". Both the envelopes shall then be sealed in one outer envelope. In case where a tenderer has quoted more than one equipment, the technical specifications could be included in a single cover duly marked as technical bid. In variable the financial bids should be submitted for each of the equipment separately. Violation of the above conditions will lead to dis-qualifications.

All bids must be accompanied by a bid security / Earnest Money Deposit as specified in the tender details and must be delivered to the above office at the date and time indicated above. Bids will be opened in the presence of Bidders' authorized representatives who choose to attend on the specified date and time. In the event of the date specified for bid receipt and opening being declared as a closed holiday for purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed time.

X) YSR Horticultural University reserves the right to accept any or all tenders either in part or in full or to split the order without assigning any reasons therefore.

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

TERMS OF PAYMENT:

1) Against the delivery of equipment.	75% of the equipment. cost.
2) After completion of satisfactory installation	20% of the project cost.
3) After completion of training for the personal	5% of the project cost.

XII) At the time of awarding the contract, the University reserves the right to insist Performance guarantee security for a warranty period of one year at the rate of 10% by way of Bank guarantee on the total order value, and the same will be released after warranty/agreement period of one year expires and in case the performance is bad or the equipment is not working to the satisfactory level, the company will forfeit the performance guarantee deposit.

XIII) This Invitation for Bids is open to all suppliers.

Bidders who have been blacklisted / suspended by the purchaser or sister concerns are ineligible to quote. The quotes of such firms shall be summarily rejected.

Prices shall be quoted in Indian Rupees for all offers as FOR –DESTINATION BASED and in case of offers received for supply from foreign countries may comply the offers to a convertible to Indian currency and customs duty as applicable to each item be given separately for parity during evaluation. In case where the cost of the equipment and customs duty are not given seperatly, such offers will not be considered.

ELIGIBILITY CRITERIA

(1) The preference would be given to manufacturer with experience of having supply of similar equipments in reputed Agricultural Universities / State Department of Horticulture / ICAR institutes/private organizations.

(2) Certificate from the project client for award of contract and supply of equipment in original or its notarized copy for each equipment claimed to be submitted.

(3) The company bidding should be in the industry for at least 5 years in the same field. Tenderers should have authorized dealer certificate/manufacturing (Please attach certificate).

(4) Tenderers should have total turnover of at least Rs.1crore or above for supply of similar equipments. Audited financial statements duly certified by chartered accountant for the last three financial years ending March, 31st, 2016 should be submitted.

(5) The buyer reserves the right to evaluate the tender on Technical Presentation/ capabilities and is not bound to accept lowest tender / quotations.

Evaluation of Bid:

1) The Technical Bid Documents will be opened first and evaluated by the Tender Committee. The technical bid should describe the details provided at Annexure-II (Part-II) and the same will be taken for final consideration. Financial Bid Documents of only those bidders will be opened who have qualified in Technical Bid.
2) The Competent Authority reserves the right to accept or reject any tender without any reason thereof.
3) Prices to be quoted on FOR basis including all taxes including VAT/freight/ installation/commissioning/trial/training charges etc in Indian rupees.
4) It is necessary to submit all the relevant documents like Pan Card, ISO Certification, VAT/Sales Tax Registration, Authorized dealer of a reputed company, Certificate of Incorporation / Partnership Deed.
5) Tenderer should submit the copies of Purchase Orders in support of their genuineness in supplying of equipments in reputed Universities / Colleges / Departments / Institutes/private organizations. The tenderer should submit users list for the last 5 years.
6) Operation, maintenance and training component will be taken as part of the equipment and the same will be considered for financial bid.

DISQUALIFICATION:

The EOI may, at its own sole discretion, at any time during the EOI process, disqualify any Interested party from the EOI process if:

(a) the response to the tender is submitted after the dead line for submission.
(b) the Interested Entity has made misleading or false representation in the forms, statements, attachments submitted in proof of eligibility.
(c) the tender is not accompanied by required documentation.
(d) the Interested Entity failed to provide clarifications related thereto, when sought.

Annexure – I (Part I)

TECHNICAL BID: filling up of Proforma

The technical bid shall accompany with the enclosures for components as per proforma prescribed and is attached with the document along with the details as under:

S.No.	Intervention/Component	Annexure (With page nos.)
1	Company Profile	
2	Past Experience of manufacturer with certificates/ work order/ completion etc	
3	No. of years of experience in this field	
4	Past experience in supply of equipment	
5	Experience of Engineers/ technician and the capacity for service with service center	
6	Financial Strength of the Firm	
7	Office details	
8	Sales Tax, Income Tax, CST registration	
9	Any others as specified in the general bid document	

General Terms & Conditions:

1. Technical quote / bid and price quote / bid, should be submitted separately.
2. A compliance statement in detail for each individual technical parameters / component of each instrument including warranty etc. as given in each instrument should be prepared by the vendor in the Technical Bid.
3. Taxes, if any, should be mentioned clearly to arrive at FOR –Guntur basis (tax rate and tax amount, tax wise & customs duties as applicable).
4. Each firm should submit separately technical specifications as at serial no.2 in one single envelope – technical quote. However, the price bids for every equipment quoted with the offer should be submitted separately for each equipment.
5. Validity of quotations/tenders should be at least 3 months from last date of receipt of quotations/tenders.
6. Product brochures should be enclosed for each equipment.
7. Warranty: minimum of 1 year for each instrument, from date of installation.
8. Make and Model should be mentioned clearly.
9. Name of the customer/s with telephone, e-mail ID should be given, for each instrument, separately.
10. The service network team / persons with contact numbers, mailing address, e-mails preferably in AP should be given for each instrument separately.
11. If the instrument is imported, the supplier should take all responsibilities for clearing duties, delivery etc, and Horticultural Research Station, Lam Farm, Guntur District will not hold any responsibilities in this regard.

12. Installation should be at free of cost.
13. Training to be provided at free of cost.
14. All the supplies should be through authorized dealer / distributor in AP (Authorized dealer / distributor certificate should be enclosed along with quotations/tenders).
15. All quotations / tenders for each instrument should have compliance report as per the specifications mentioned point wise.
16. For all imported equipments, the supplier holds the responsibility for clearance, and delivery to the destination at HRS, LAM Farm, Guntur. Dr. YSRHU will issue customs exemption certificate as applicable and as available at the time of clearance. The customs duty if any incurred by the vendor will be reimbursed against the submission of necessary documents.
17. All the instruments should be delivered at HRS, LAM; Dr. YSRHU at free of cost or the price quoted should include the delivery charges, if any. No additional charges will be paid by HRS, Lam, Dr.YSRHU towards delivery and installation.
18. All instruments should be supplied along with hard copies of operating manual and soft copies in CD / DVD / flash drive, wherever required.
19. The quotations/tenders should be submitted in a sealed cover super scribing "**Quotation/ Tender (TECHNICAL BID / PRICE BID) for supply of_____ (S.No:) for HRS, Lam, Guntur-522034, Andhra Pradesh**".

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

Annexure– I (Part–II)
"DECLARATION OF THE BIDDER"

1) That I/We am/are the authorized nominee (s) of the firm hereby submit tender to Horticultural Research Station, Lam, Guntur District, Andhra Pradesh. The copy of the power of Attorney is attached here with.
2) I am to state that the information provided in the tender form is true and correct
3) I/We may be punished as per law for any wrong information, misleading facts provided in the tender form besides rejection of my/our tender.
4) In case of any dispute, the Jurisdiction will be Guntur District only.
5) I/We have carefully read all the general and specific terms and conditions of the tender and I solemnly declare that the same are acceptable to me/us and binding on me/us.

Place : Signature of Bidder :

Date :

Name of Bidder :

Capacity in which signed :
Full address of the Bidder : With seal & stamp :
(Attach Identity card Xerox) Phone No. :
Mobile No. :

Annexure- II (Part I)
TECHNICAL SPECIFICATIONS

Commercial Bid Proforma (This should be enclosed in envelope No.2) (In. Rs)

S. No.	Product	Number	Quoted Price
HRS, Lam			
1	LC-MS/MS	1 No	
2	GC (FID+ECD +NPD)	1 No	
3	GC MSMS (TripleQUAD)	1 No	
4	UPLC	1 No	
5	ICP-OES	1 No	
6	Stereo Zoom Trinocular Microscope with image analysis system.	1 No	
7	Protein analyzer	1 No	
8	UPS 20 & 30 KVA	1 No	
9	Microwave digestion system	1 No	
10	UV/VIS/NIR Spectrophotometer	1 No	
11	Rotary shaker for culture with temperature control	1 No	
12	Fat analyzer	1 No	
13	Colour matching spectrophotometer	1 No	
CRS, Tirupati			
14	Real Time PCR	1 No	
15	Automatic DNA and RNA isolation and analysis system	1 No	
16	Fluorescent microscope plant pathology studies	1 No	
17	-80^{O}C Deep freezer	1 No	
18	Stereo zoom microscope with image analyzer	1 No	
19	Colony counter	1 No	

Annexure–II (Part –II)
(This should been closed in envelope No.2)

Specifications of tender cost for supply of equipment at Horticultural Research Station, Lam, Guntur district

1. LIQUID CHROMATOGRAPH TANDEM MASS SPECTROMETER (LC-MS/MS) ALONG WITH ALL ACCESSORIES AND SAMPLE PREPARATION

S. No.	Technical Details of Equipment	Units
	LC-MS/MS (A compact High resolution LC-MS/MS with ESI and APCI multi mode combined source, with APPI accessory equipment for qualitataive and quantitative estimation of food contaminants (Pesticides, Mycotoxins, antibiotics etc) residues analysis with user friendly software to meet the global food regulations like EU/USFDA/Japan/FSSAI, etc)	
1	**Mass Stability** 0.1 Da over 24 hours (please provide graphical data)	
1-1	**Dynamic range** Should be 5 orders of magnitude or better	
1-2	**Mass analyzer** **Quadrupole Analyzer:** • The instrument should be configured with a quadrupole mass filter for the efficient transmission of ions in MS mode and selection of precursor ions for MS-MS analysis • The Quadrupole mass range 20–1200 m/z or better • The Analyzer should have more than one aspect for the efficient ion separation with maximum resolution.	
1-3	**Sensitivity** Lower detection and highest sensitivity • ESI positive Ion Sensitivity: The signal/noise ratio for 1pg of reserpine should be >75000:1 or better, in MRM mode of reserpine at the transition m/z 609 – m/z 195 (Proof document/application note to be enclosed along with technical tender document). • ESI negative Ion Sensitivity: The signal/noise ratio for 1pg of chloramphenicol should be >30000:1 or better, in MRM mode of chloramphenicol at the transition m/z 321 – m/z 152(Proof document/application note to be enclosed along with technical tender document).	
1-4	**Scan speed** Should have the scan speed of 12,000 amu per sec or better	
1-5	**Ionization** • Electrospray with Concentric Gas Flow for Nebulisation to cover flow rates upto 2ml/min. • Multimode Ionization: ESI / APCI combined source: A combined ESI/APCI source must be provided as standard with the instrument. ESI and APCI ionization must be achieved using a single probe. It should able to perform both ESI and APCI. APPI source shall be offered as accessory	
1-6	**Source Interface** • Orthogonal off-axis spray (Electrospray) or any other equally efficient technology capable of avoiding interference from solvents and other	

	extraneous matter. • Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples • Capable of handling large batches of complex sample matrix like Animal feeds, Fish and fishery products, poultry and poultry products, Honey, Milk and Milk products, Agriculture products (Fruits & Vegetables) etc. over a long period of time without performance degradation. • Cleaning of source should be done without venting the system and facility to vacuum interlock. • Interface capable of ambient temperature operation and without complex apertures to maintain structural integrity of thermally labile and fragile molecules.	
1-7	**Integrated Fluidic Device(to minimize space and tubing)** An infusion device must be integral to the instrument or equivalent and must be controllable from the instrument software. At least 2 user-changeable sample vials should be built into the system to allow tuning and calibration solutions to be infused into the probe via the switching valve.	
1-8	**Polarity switching time** +ve / -ve polarity switching time between alternate MRM scans should be 50 msec or better with supporting documents	
1-9	**Vacuum System** Robust high efficiency vacuum system with minimum maintenance and utility with low noise level. Vacuum read backs must be digitally monitored and controlled through software to ensure fail-safe operation in the event of power failure. All accessories required for the proper functioning of the vacuum system should be supplied. Fore line pump: Oil free Scroll type pump with arrangements of AUTO- ON after Power auto age. High vacuum pump must be Turbomolecular pump: 250 L/Sec or better	
1-10	**Gas Control** All gases must be controlled by the software	
1-11	**Operating modes** Mass spectrometer should have the following scan options: Full scan • Selected Ion monitoring/ recording (SIM/SIR) • Product ion scan, Precursor ion scan & Neutral loss scan • Multiple Reaction Monitoring (MRM) • MS and MS/MS in a single injection with matrix background monitoring or equivalent. (Proof document /application note to be enclosed along with technical tender document with onsite verification) • Simultaneous full scan and MRM or better (Optional)	
1-12	**Detector** • A high sensitivity, high throughput detector with zero dead time, low noise and high accuracy at low level detections. • An off-axis dynolite photomultiplier/Electron Multiplier detector • Detector must operate in both positive and negative ion modes. • Capable of switching polarity rapidly. • Should have a better long life. (Life time shall be furnished and the better one will be given preference during technical evaluation).	

1-13	**Nitrogen Generator** • Should be supplied with the system along with the trouble free inbuilt compressor and appropriate capacity reservoir which should be sufficient enough to deliver the gases (purity > 99.999%) required to run the system • Should be complete with all necessary accessories with Two Years comprehensive warranty with at least one Preventive maintenance along with PM kit each year and Three years CMC after the warranty period including all spares, accessories and consumables , at least one Preventive maintenance along with PM kit each year and unlimited breakdown visits	
1-14	**Vacuum Manifold with compatible SPE Cartridges** • Minimum 10 cartridges extraction at one time • Minimum 1000 cartridges for different analytes i.e pesticide residues, antibiotic residues etc	
2	**High Performance Liquid Chromatography System** List of column with Specification: a) C-18, 2.1x100 mm x 1.7 µm with suitable Guard column b) C-18, 2.1x150 mm x 1.7 µm with suitable Guard column c) C-18, 4.6 x250 mm x 5 µm with suitable Guard column d) C-8, 4.6 x250 mm x 5 µm with suitable Guard column e) Phenyl-Hexyl 2.1mm x100 x, 3µm or equivalent HILIC column with Guard column • The complete system and the MS should be controlled by the single software • PUMP: Binary pump pressure handling capability. Operating flow range should be 0.010-5.0ml/min or better with 1µl increments • Autosampler: with 1 to 10 ul/min injection, minimum of 100 samples capacity. Capability to handle pressure range of 15000 psi or better. • Column Oven: 30°C to 80°C, capability to accommodate a minimum of 1 or more columns of ≥ 15 cm. Temperature Stability: ±0.1°CTemp. Accuracy:±0.5°C • DAD/PDA Detector: 190-640 nm or more, 80 Hz or more, Standard flow cell with flow cell of 1.0 ul or better	
3	**Spares and accessories** • LC-MS/MS startup kit should be supplied as standard. • All required traceable standards for Mass calibration and tuning, HPLC calibration should be provided • 5µl, 10µl, 20µl, 50µl, 100µl loops, Vacuum pump oil, etc. and any other material required to make the instrument functional should be provided. • Standard Tool kit should be provided for Instrument maintenance • Reputed highly branded solvent filtration unit with pump and required accessories 02 nos	

4	**System Controller and Operating system** • Software must be Multitasking type. It must acquire and process the data simultaneously • Application manager must be compatible with data of full scan, SIM/SIR or MRM • Data Acquisition, Peak Integration, Calibration, Quantification and QC calculations must be fully automated. • The Quantification method editor must be viewable in page view or spreadsheet. • Application manager must allow to monitor the molecular ion and up to 04 (four) • Confirmatory ions or better. • Must be capable of performing the following functions and should be upgradable: - Workstation must be able to control the MS, acquire, store, process and reproduce the data by the same computer. - Workstation must be able to control LC, Detector and auto sampler. - It must be able to regulate the gas pressure and flow during the data acquisition and append to the relevant data file. - Software must have automated calibration and Quantitative optimization. - Automated MS to MS/MS switching during a single run with user selectable criteria - Perform alternating positive/negative scans in one run - Automated Quantitation and reporting of acquired samples. - Data may be processed as it is being acquired	
5	**Calibration Standards** Two sets each NIST or other traceable standards for all the Pesticides, Mycotoxins and Antibiotics with a minimum expiry period of two years	
6	**PC with Printer** • Minimum Intel core i5/i7 processor, 2.0 Ghz or more, 19″or more LCD/TFT Monitor, 500 GB HDD, DVD Read/Write, 4 GB RAM,4 USB Port or higher configuration for use with the above system to be provided. • Reputed Branded automatic back to back colour Laser jet printer should be provided	
7	**Power Supply** • The system should have UPS (minimum 10 KVA) of suitable rating with voltage regulation, spike protection and minimum 60 minutes back up for the supplied equipment.	
8	**Additional items** • Bidders should quote a startup package for 100 samples. In addition, the bidders should give a list of recommended consumables along with their source and budgetary prices. • Operation kit comprising all required items for startup/regular operation of instrument. • Firm should also quote all essential pre-installation requirements and utility requirement for LC-MS/MS.	

	• Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • The system should have Server connectivity and should be capable of 21 CFR Part 11 and food safety compliance. The necessary validations will have to be carried out by the equipment suppliers. • Complete methods library with MRMs of Mycotoxins, Veterinary drugs, Pesticides, antibiotics with instrument method details and SOPs, related software's and user manuals to be provided. • End user should be provided training at principles work/manufacturing site for one week on operation and maintenance of the equipment at your cost, apart from the regular training provided at our site to our complete satisfaction. PLEASE PROVIDE MAINTENANCE CHART FOR ALL OF THE COMPONENTS IN LC-MS/MS SYSTEM.	
9	**Operation and maintenance & Training Component** • The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system and a training at the suppliers lab premises is also required. • One trained personnel should be provided by instrument suppliers for three years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim as an employee of QC Lab/DrYSRHU. The personnel will work under QC laboratory head. He will also be responsible for providing training of the instrument to the laboratory staff.	
10	**IQ/OQ/PQ** IQ/OQ/PQ of the system is required	
11	**Warranty** • Standard Warranty of 24 months starting from date of satisfactory and faultless functioning of the equipment for 60 days at the laboratory premises. • Comprehensive Maintenance Contract Service for 36 months after expiry of standard Guarantee/Warranty should be quoted separately. • Annual calibration of the equipment shall be a part of the CMC. It shall also be mandatory to perform calibration after every major repair/breakdown. • The vendor should have available for ten years guaranteed parts and CMC service • Current user's / performance list with contact details (Customer name, phone email id etc) and date of installation to be provided (Minimum 5 installations of the model quoted) • Number and details of the service engineers has to be provided	

2. Gas chromatograph for residual analysis of pesticides with high sensitivity with all required accessories.

<table>
<tr><th>S. No.</th><th>Technical Details of Equipment</th><th>Units</th></tr>
<tr><td>1</td><td>Oven
➢ A large oven with size ≥28 × 31 × 16 cm
➢ Oven operating range must be from Ambient +4 °C to 450 °C.
➢ Oven must support 18 oven ramps with 19 plateaus.
➢ Temperature ramp rates: @110 °C/min or higher from 50-175C
➢ Oven cool down 450 to 50 °C in <05.0min.
➢ Shall accommodate all range of columns 0.53 mm , 0.32mm , 0.25 mm, 0.1mm .</td><td>1 No</td></tr>
<tr><td>2</td><td>Inlets-(CAPILLARY SPLIT & SPLIT LESS INJECTOR)
<table>
<tr><td>➢ Inlet pneumatics</td><td>Inlet must have Electronic pneumatic control of carrier, split and septum purge gases, including electronic ON/OFF</td></tr>
<tr><td>➢ Capillary column id</td><td>Must be suitable for all capillary columns (50 µm to 530 µm id)</td></tr>
<tr><td>➢ Split ratios allowed</td><td>Must allow split ratio setpoint up to 7,500:1</td></tr>
<tr><td>➢ Modes</td><td>Must allow these modes and be easily accessible:
-split, -splitless mode
-Pressure-pulsed splitless mode.</td></tr>
<tr><td>➢ Maximum temperature</td><td>Maximum temperature: 400 °C.</td></tr>
<tr><td>➢ EPC Pressure Ranges</td><td>EPC available in two pressure ranges:
- 0 to 100 psig (0 to 680 kPa) >= 0.200 mm diameter
- 0 to 150 psig for columns < 0.200 mm diameter.</td></tr>
<tr><td>➢ Gas saver mode</td><td>Gas saver mode built in</td></tr>
<tr><td>➢ Septum purge</td><td>Must have electronic septum purge flow</td></tr>
<tr><td>➢ Purge flow change</td><td>Split and septum purge flow can be changed without changing the column flow</td></tr>
<tr><td>➢ Total flow range</td><td>Must be able to set total flow range: 0 to 200 mL/min N_2</td></tr>
</table></td><td>2 No’s</td></tr>
<tr><td>3</td><td>Auto injector
➢ with minimum 12 sample vials with injection tower and standalone turret
➢ System supports shell vials, standard 2 mL vials, and micro vial with inserts
➢ 100 µL standard syringe , with 250/500 µL with optional syringes
➢ vial heating prior to injection temperature range 35–80°C
➢ Minimum sample injection 10 nL (with 1 µL syringe)
➢ Maximum sample injection 50 µL (with 100 µL syringe in standard tower)
➢ On-column injection mode ; Automatic
➢ Multiple injection mode ; 1–99 injections of specified volume
➢ Must be interchangeable to both the inlets with ease of use</td><td>1 No</td></tr>
<tr><td>4</td><td>Detectors (3 detectors; FID; ECD; NPD)
All Detectors shall be mounted for simultaneous operation.
A) FID (FLAME IONIZATION DETECTOR)
➢ Sensitivity Minimum detectable level (for tridecane): < 1.8 pg C/s</td><td>1 No</td></tr>
</table>

	➢ Linear Dynamic Range	: $>10^7$ Peaks to be quantified over the entire 10^7 concentration range in a single run	
	➢ Data rate	Must be able to set data rate up to 500 Hz	
	➢ EPC control	Must have electronic pneumatic control of make-up, H2 and air flows (with electronic ON/OFF). two selectable modes: constant flow or column flow plus makeup flow constant	
	➢ FID Ignition, Flame out detection & re-ignition	Automatic flame ignition. Must provide flame out detection and automatic re-ignition	
	➢ Versions	Available in two versions (capillary only, or capillary/packed)	
	➢ Maximum temperature	450 °C maximum operating temperature	
	B) ECD (electron capture detector)		
	➢ Sensitivity	Minimum detectable level:< 6 fg/mL lindane	
	➢ Linear Dynamic Range	Proprietary signal linearization. Linear dynamic range: $> 5 \times 10^4$ with lindane	
	➢ Data rate	Data acquisition rate: up to 50 Hz	
	➢ Electron source	Uses ß$^-$ emission of < 15 mCi^{63}Ni as the electron source.	
	➢ Maximum temperature	400 °C maximum operating temperature	
	➢ EPC control	Standard EPC makeup gas types: argon/5% methane or nitrogen; 0 to 150 mL/min	
	C) NITROZEN PHOSPHORUS DETECTOR		
	➢ Sensitivity	MDL: < 0.4 pg N/s, < 0.2 pg P/s with azobenzene/malathion/ octadecane mixture	
	➢ Linear Dynamic Range	Dynamic range: > 10^5 N, > 10^5 P wi azobenzene/malathion mixture	
	➢ Selectivity	25,000 to 1 g N/g C, 75,000 to 1 g P/g C with Azobenzene/malathion/octadecane mixture	
	➢ Data rate	Data acquisition rate: up to 200 Hz	
	➢ EPC control	Standard EPC for three gases: Air: 0 to 200 mL/min - H2: 0 to 30 mL/min - Makeup gas: 0 to 100 mL/min	
	➢ Available in two versions	Available for packed/capillary columns	
	➢ Maximum temperature	400 °C maximum operating temperature	
	D) System control SW: ➢ A 21 CFR compliant and ➢ To support fully the regulatory compliance parameters like GLP GMP, server based and net work based SW that can control multi detector /multi vendor chromatography systems. ➢ Future upgrade to MS be possible. **E)** All necessary columns for analysis of residual solvents, pesticides, herbicides must be quoted. **F)** A column split (Y split) to connect 2 detectors must be offered (10 nos) **G)** All spares for smooth running of equipment for 2 years shall be offered **H)** All local supplies including Data acquisition system with latest		

	configuration and printer. Filled Gas cylinders (47 L capacity) required purity for system with gas purification panel. shall be part of offer. **The system shall have the following features and shall be supported with documentary proof for evaluation criteria.** ➢ The instrument shall be designed and manufactured under a quality system registered to ISO 9001, Declaration of conformity shall be submitted. ➢ System should meet US FDA 21 CFR regulatory part 11 with user privileges, Audit trails with complete Data integrity with RAW data access. ➢ The instrument shall be performed with IQ/OP/PQ validation protocols and the product must be GLP compliant. ➢ The system should have been supplied to a minimum of 3 reputed labs in the last 3 years, preceding to the tender date. ➢ A satisfactory performance certificate from minimum 2 users of the above must be submitted for performance evaluation.	

3. Gas Chromatograph with triple Quadrupole Mass Spectrometer.

S. No.	Technical Details of Equipment	Units
1	**GC Specifications** System should be capable of supporting analysis of pesticide & environmental pollutants in food matrices and should have inlet equipped with Automatic pneumatic controls for all the gases and should have Chromatography Data system which is based on Microsoft Windows operating system for instrument control, data acquisition, chromatographic deconvolution and library (qualitative and quantitative data) using generated data and shall meet the requirement as per the regulatory requirements of DGSANTE 11945/2015. **Specifications** **A. Gas Chromatography:** ➢ Column oven should have provision to install two or more columns ➢ Operating temp range of column oven from near ambient to 450^{o}C ➢ Column oven temperature ramp rate of oven should be120^{o}C or better ➢ Column oven should have possible to program 15 temp ramps (16 plateaus) or better ➢ GC should have temperature programmable vaporizer inlet and programmable upto 8 ramps and have heating rate better than 800^{0}/min. ➢ Inlet should have Advanced electronic flow control modules with Pressure set points adjustable in increments of 0.001 psi and pressure range up to 99. 5 psi. ➢ Inlet System should have Gas saver mode to reduce gas consumption without compromising performance and Inlet sealing system is built in standard for quick, easy, injector liner change for quick maintenance of liner ➢ Inlet pressure/flow control should have atmospheric pressure and temperature compensation is standard, so results do not change, even when the laboratory environment varies ➢ Inlet Split ratio upto 6000:1 and suitable for all capillary column from 50um to 530um. ➢ Inlet Should be capable of doing large volume injection upto 250 microlitre. The inlet should also perform programmable Split &Splitless injection both in hot and cold modes. ➢ Inlet maximum operating temperature should be 400 °C. ➢ GC Should have column backflush capabilities using Advanced flow technology coupled with independent pressure control module to eliminate long bake-out times for highly retained (or high-boiling) contaminants, thereby shortening cycle times and protecting the column and detector. **B. Triple Quadruple mass spectrometer:** LAN based quadruple MS system with EI and CI source and CI with appropriate computer & printer to support the system from original manufacturer.	1 No

	➢ One dual stage turbo molecular vacuum pump for creating high vacuum and Rotary-vane fore line pump supporting the turbo molecular pump ➢ Non-coated inert EI source with dual filament to run sample after sample with complete confidence and reduces cleaning requirements, especially when analyzing dirty samples heatable up to 350 °C ➢ Quadruple should be made up of inert material with preferably hyperbolic shape to have better mass transfer efficiency with provision of heating the quadruple up to 180°C to keep it clean from dirty matrix ➢ Mass range (m/z) upto 1,000amu ➢ Mass axis stability should be 0.10 amu/24 hrs for a temperature range 15 to 30^0C ➢ Scan rate (electronic) of 15000 u/s or better. ➢ Mass resolution must have unit mass adjustment by tune, 0.7 to 2.5 daltons ➢ Hexapole collision cell or better technology to improve the ion fragmentation and transmission prior to final filtration and detection quantification. ➢ Minimum MRM Dwell Time must be at least 0.5msec ➢ MRM speed (transitions/sec) 800 or more enabling automatically quantifying and confirming more targets in a single method run. ➢ The system should use low cost Nitrogen as collision gas to reduce cost of operation. ➢ Collision Energy must be selectable up to 60eV ➢ System should have Electron multiplier detector with long life and better sensitivity ➢ The system should have independently heated GC/MS interface ➢ Unit mass Resolution adjustable by tune, 0.7 to 2.5 Daltons ➢ Dynamic range (electronic) 10e6 ➢ Should have software controlled Auto tune or manual tune. ➢ Should provide the latest version of NIST library. ➢ Should have Jet-clean ion source module to reduce ion source maintenance cycles from contamination due to high matrix samples. **C. The sensitivity of system should be as followed and demonstrated at site:** ➢ EI MRM Instrument Detection Limit: 5 fg or less octafluoronaphthalene (OFN) for MS/MS transition of m/z 272→222 statistically derived at 99% confidence level from the area precision of eight sequential splitless injections using 10fg/uL OFN Standard using 30m x 0.25mm ID x 0.25um column which supplied with the instrument. **D. Auto sampler** ➢ The system should have an Autosampler with vial number of 45 or more with vial capacity of 1.8 – 2.0 ml. ➢ Autosampler should be capable of handling large volume injection with syringe size from 0.5microlitre to 250 microlitre with programmable split/splitless injector. ➢ User definable 2 or 3-layer sandwich injection mode ➢ Fully programmable dispense rate, draw rate and injection rate ➢ Fast injections should perform less than 100ms.	

	E. GC-Columns: Suitable column for pesticides residue and environmental pollutants analysis. **F. Optional Libraries** **Library and database:** The following libraries/ database should be provided. ➢ latest version of NIST library with license ➢ Pesticide and environment pollutant MRM database consisting MRM list for a Pesticides and Environmental pollutants better than 1000 compounds belong to wide range of compound groups on average of 6 MRMs for compounds which provides alternatives to work around matrix interferences, to be provided with chromatographic conditions with retention times to build acquisition methods in quick time. Literature Reference or technical notes to be provided regarding the workflow of pesticide analysis using the pesticide list and method generation. Suitable column and accessories to be quoted to setup the method. **G. Data acquisition system with latest configuration and printer. Filled Gas cylinders (47 L capacity) required purity for system with gas purification panel. shall be part of offer** **The system shall have the following features and shall be supported with documentary proof for evaluation criteria.** ➢ The instrument shall be designed and manufactured under a quality system registered to ISO 9001, Declaration of conformity shall be submitted. ➢ System should meet US FDA 21 CFR regulatory part 11 with user privileges Audit trails with complete Data integrity with RAW data access. ➢ The instrument shall be performed with IQ/OP/PQ validation protocols and the product must be GLP compliant. ➢ The system should have been supplied to a minimum of 3 reputed labs in the last 3 years, preceding to the tender date. ➢ A satisfactory performance certificate from minimum 2 users of the above must be submitted for performance evaluation.	
	Additional items • Bidders should quote a startup package for 100 samples. In addition, the bidders should give a list of recommended consumables along with their source and budgetary prices. • Operation kit comprising all required items for startup/regular operation of instrument. • Firm should also quote all essential pre-installation requirements and utility requirement for GC-MS/MS. • Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • The system should have Server connectivity and should be capable of 21 CFR Part 11 and food safety compliance. The necessary validations will have to be carried out by the equipment suppliers. • Complete methods library with RT index for pesticides, volatile	

	organics and flavonoids with instrument method details and SOPs, related software's and user manuals to be provided. PLEASE PROVIDE MAINTENANCE CHART FOR ALL OF THE COMPONENTS IN GC-MS/MS SYSTEM.	
	Operation and maintenance & Training Component • The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system and a training at the suppliers lab premises is also required. • One trained personnel should be provided by instrument suppliers for three years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim as an employee of QC Lab/DrYSRHU. The personnel will work under QC laboratory head. He will also be responsible for providing training of the instrument to the laboratory staff.	
	Warranty • Standard Warranty of 24 months starting from date of satisfactory and faultless functioning of the equipment for 60 days at the laboratory premises. • Comprehensive Maintenance Contract Service for 36 months after expiry of standard Guarantee/Warranty should be quoted separately. • Annual calibration of the equipment shall be a part of the CMC. It shall also be mandatory to perform calibration after every major repair/breakdown. • The vendor should have available for ten years guaranteed parts and CMC service • Current user's / performance list with contact details (Customer name, phone email id etc) and date of installation to be provided (Minimum 5 installations of the model quoted) • Number and details of the service engineers has to be provided	

4**. Ultra Pressure Liquid Chromatography for high sensitive and high resolution analysis of pesticides and PAHS.**

S. No.	Technical Details of Equipment	Units
1	**UPLC** **A) PUMP:** ➢ A Quaternary Pump with a Dual pistons in series pump with a servo-controlled variable stroke design and smooth motion control for active damping with a maximum pressure of **15000 psi or more** and a flow rate up to 2 mL/min or more, with 0.001 mL/min increments. The system shall have integrated high efficiency degasser with low internal volume with fast change-over of solvents for purging and priming the pump. The **Flow precision** ≤ 0.07 % RSD. The **Flow accuracy** ±1%. The **Delay volume shall be** <400µL. **Solvent Composition precision** < 0.2 % RSD, solvent **Composition accuracy •** ±0.5 % absolute or less ➢ The **GLP features shall be integrated with** Early maintenance feedback (EMF) for continuous tracking of instrument usage in terms of seal wear and volume of pumped mobile phase with pre-defined and user settable limits and feedback messages. Electronic records of maintenance and errors. **B) AUTO INJECTOR** ➢ Sample Capacity; 2 x well plates (MTP) + 10 x 1.8 -2.0 mL vials, or 108 x 1.8- 2.0 mL vials. Injection range 0.1 – 40 µL in 0.1 µL increments. Precision; Typically < 0.25 % RSD from 5– 20 µL. Accuracy ± 1 %. Pressure range Up to 15000 psi. Cooling/Thermostating Temp range 4-40°C . Carry Over < 0.004. ➢ GLP features shall be standard with early maintenance feedback (EMF) for continuous tracking of instrument usage with user-settable limits and feedback messages. Electronic records of maintenance and errors. **C) DIODE ARRAY DETECTOR** ➢ Light source which holds typical wavelength range of 190 – 640 nm and above.Wavelength accuracy ± 1 nm . Number of chromatography signals simultaneously on process; 8. Programmable slit width 1, 2, 4, 8 nm. Diode width ~ 0.5 nm. Noise < ± 3 x 10^{-6} AU at 230 nm. Drift < 0.5 x 10^{-3} AU/hr at 230 nm. Flow cells Max-Light Cartridge Cell 10 mm path length at 60 bar. ➢ GLP features shall be standard like Early maintenance feedback (EMF) (or) equivalent indication for continuous tracking of instrument usage in terms of lamp burn time with user settable limits and feedback messages. Electronic records of maintenance and errors. Verification of wavelength accuracy with built-in holmium oxide filter. **D) SYSTEM CONTROL SW:** ➢ A 21 CFR compliant and to support fully the regulatory compliance parameters like GLP GMP , server based SW that can control multi detector /multi vendor chromatography systems . Future upgrade to MS be possible.	1 No

	E) All necessary columns for analysis of **pesticides, carbohydrate, Vitamins, PAHS shall be offered .** **F)** All spares for smooth running of equipment for 2 years shall be offered **G)** All local supplies including data acquisition system having latest configuration and printer shall be part of offer. **The system shall have the following features and shall be supported with documentary proof for evaluation criteria.** ➢ The instrument shall be designed and manufactured under a quality system registered to ISO 9001, Declaration of conformity shall be submitted. ➢ System should meet US FDA 21 CFR regulatory part 11 with user privileges ,Audit trails with complete Data integrity with RAW data access . ➢ The instrument shall be performed with IQ/OP/PQ validation protocols and the product must be GLP compliant. ➢ The system should have been supplied to a minimum of 3 reputed labs in the last 3 years, preceding to the tender date . ➢ A satisfactory performance certificate from minimum 2 users of the above must be submitted for performance evaluation.	

5. Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)

S. No.	Technical Details of Equipment	Units
1	**A simultaneous ICP instrument that offers maximum performance and versatility.** **SPECTROMETER:** ➢ The instrument must be a simultaneous reading ICP-OES using solid-state detector technology. ➢ The instrument must have an Echelle-based polychomator with a 400mm or higher focal length. ➢ The resolution of the system must be less than **<u>0.007 nm at 200 nm</u>**. ➢ The detector must have anti-blooming protection on each pixel. ➢ An optical system purge of 0.7L/min with optional boost purge of 3L/min in the polychromator for determinations made at wavelengths below 189 nm must be standard. Either nitrogen or argon may be used as purge gases and the gas flows must be controlled by the system controller. ➢ Gas flow for the polychromator purge must be <u>Mass Flow Controlled.</u> ➢ The system must include a water chiller and that chiller must not be mounted to the instrument chassis and have the ability to be situated at a distance from the instrument. ➢ The polychomator must be thermo stated at 35^0C. ➢ The instrument must have a vertical plasma and the standard torch must be of a single-piece design. ➢ Optional semi demountable torches must be available. ➢ Viewing of the plasma height must be computer controlled. ➢ The system must have the ability view at least 96% of the total emission spectra between 167 and 900nm. ➢ The instrument must be able to simultaneously perform determinations across the entire spectrum, both UV and visible, in a single measurement on a single detector. ➢ The instrument must be able to simultaneously determine all desired elements in one analytical reading. ➢ The system shall accept a dissolved solid amount of >20% **ICP SYSTEM:** ➢ The instrument must be a bench-top model. ➢ The vertical plasma must be ‘dual view’ with the option to read axially and radially in a 2-step sequential process or to read axial or radial views alone.	1 No

	➢ The instrument must be able to run organic as well as aqueous matrices. ➢ The instrument must monitor gas pressures and flows, water flows, air pressure, exhaust air flow and plasma stability. The system must have interlocks around the plasma compartment door and also the torch loader and the interlocks must be continuously monitored and if any interlock is interrupted, the plasma is shutdown automatically. ➢ Plasma ignition and shut down must be computer controlled and totally automated. **SYSTEM DETECTOR:** ➢ The instrument must utilize a single focal plane with one solid-state detector that is optimized for performance across the entire emission spectrum possible on the spectrometer. Only industry standard CCD and CID detectors be quoted ➢ All emission wavelengths need to be read simultaneously. No segmented reading is accepted. ➢ Each detector pixel must have anti-blooming protection to enable the simultaneous measurement of trace level analytes in the presence of major matrix constituents. ➢ The detector must be cooled by a Peltier device to a temperature of at least -40ºC to minimize detector dark current thereby enhancing instrument performance and detection limits. ➢ The detector must have Adaptive Integration technology that allows intense and trace signals to be measured simultaneously and at the optimum Signal to Background Ratio (SBR). ➢ The detector must be hermetically sealed, and require no gas consumption for detector purging. **RF GENERATOR:** ➢ The RF generator 27 MHz / 40 MHz Solid State, maintenance free, water cooled and shall have an optimal power output range of 700 - 1500 watts and be computer controllable in 10-watt increments. ➢ The RF generator must be of free running design and have power transfer efficiency into the plasma of at least 75% to eliminate the need of an inefficient secondary matching networks. ➢ The power output stability must be better than 0.1%. **FLOW CONTROLS:** ➢ All gas flows to control the plasma should have Mass Flow Controllers on them. This includes the plasma gas (coolant), auxiliary gas, nebulizer gas and make up gas ➢ Plasma argon gas (coolant) flow must be controlled at flows ranging from 8.0-20.0 L/min at 0.1L/min increments. ➢ Auxiliary gas flow must be controlled at flows ranging from 0-	

2.0L/min at increments of 0.01L/min

- The nebulizer argon flow must be controlled from 0 – 1.5 L/min in 0.01 L/min increments.
- The makeup gas should have flow from 0-2L/min in 0.01L/min increments.
- The addition of oxygen for organics analysis must use an integrated gas control system and be computer controlled.

SAMPLE INTRODUCTION SYSTEM:

- The torch must be mounted vertically to facilitate High dissolved solid uptake >20%.
- The instrument must include a double pass glass cyclonic spray chamber and a glass concentric nebulizer.
- The system must include a three channel, variable speed, computer controlled peristaltic pump which allows for on-line addition of internal standards.
- The system must include the option of a 5-channel pump and switching valve system as a future upgrade for improving sample introduction and washout efficiency.

SOFTWARE:

- The instrument controlling software must be 64-bit running under with latest Microsoft Windows operating system.
- The software must be able to display calibration curves for all of the elements analyzed simultaneously.
- The software must be able to display all of the peaks from an analysis simultaneously.
- The software must provide automated background correction,
- The software must have the ability to do spectral interference correction.
- The system must be able to apply spectral interference correction in addition to background correction post sample analysis, eliminating the need to reanalyze the sample
- Calibration curves must be stored and be able to be recalled for later use.
- The software must have a library of analytical wavelengths containing at least 40,000 lines whose relative intensities are determined on the instrument optical system.
- Calibration equations must include linear, quadratic and rational and include functions of weighted fit and force through blank options.
- The software must allow for at least 50 calibration standards and blanks.

PERFORMANCE:

- The instrument must meet all EPA contract lab required detection limits, for methods based on ICP-OES.
- The instrument must be able to meet all EPA CRDL's (3∑) for methods based on ICP-OES, using a *concentric nebulizer with a cyclonic type spray chamber.*

The instrument must have the following typical resolution and the performance specification shall be demonstrated on our request f or the below items.

As 188.979 nm	< 0.007 nm
Mo 202.030nm	< 0.007 nm
Zn 213.856 nm	< 0.0075 nm
Pb 220.353 nm	< 0.008 nm
Cr 267.716 nm	< 0.0095 nm
Cu 327.396 nm	< 0.013 nm
Ba 614.171 nm	< 0.035 nm

- Stray light must be less than 2.0 ppm effect on the As signal at 188.980 nm from 10,000 ppm Ca.
- The instrument must have analytical linearity in excess of 5-6 orders of magnitude with the ability to use alternate wavelengths that are measured simultaneously.

All spares for smooth running of equipment for 2 years shall be offered
All local supplies including filled gas cylinders with regulators (47 L capacity)/chillers /compressors, gas purification units and data acquisition system with latest configuration and printer shall be part of Fume hood with Exhaust system with ducting. Suitable online UPS

The system shall have the following features and shall be supported with documentary proof for evaluation criteria.

- The instrument shall be designed and manufactured under a quality system registered to ISO 9001, Declaration of conformity shall be submitted.
- System should meet US FDA 21 CFR regulatory part 11 with user privileges, Audit trails with complete Data integrity with RAW data access .
- The instrument shall be performed with IQ/OP/PQ validation protocols and the product must be GLP compliant.
- The system should have been supplied to a minimum of 3 reputed labs in the last 3 years, preceding to the tender date.
- A satisfactory performance certificate from minimum 2 users of the above must be submitted for performance evaluation.

	Additional items • Bidders should quote a startup package for 100 samples. In addition, the bidders should give a list of recommended consumables along with their source and budgetary prices. • Operation kit comprising all required items for startup/regular operation of instrument. • Firm should also quote all essential pre-installation requirements and utility requirement for ICP-OES. • Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • The system should have Server connectivity and should be capable of 21 CFR Part 11 and food safety compliance. The necessary validations will have to be carried out by the equipment suppliers. • Complete methods library with NIST traceable standards for multi elements not less than 24 elements shell be supplied along with the instrument method details and SOPs, related software's and user manuals to be provided. PLEASE PROVIDE MAINTENANCE CHART FOR ALL OF THE COMPONENTS IN ICP-OES SYSTEM.	
	Operation and maintenance & Training Component • The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system and a training at the suppliers lab premises is also required. • One trained personnel should be provided by instrument suppliers for three years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim as an employee of QC Lab/DrYSRHU. The personnel will work under QC laboratory head. He will also be responsible for providing training of the instrument to the laboratory staff.	
	Warranty • Standard Warranty of 24 months starting from date of satisfactory and faultless functioning of the equipment for 60 days at the laboratory premises. • Comprehensive Maintenance Contract Service for 36 months after expiry of standard Guarantee/Warranty should be quoted separately. • Annual calibration of the equipment shall be a part of the CMC. It shall also be mandatory to perform calibration after every major repair/breakdown. • The vendor should have available for ten years guaranteed parts and CMC service • Current user's / performance list with contact details (Customer name, phone email id etc) and date of installation to be provided (Minimum 5 installations of the model quoted) • Number and details of the service engineers has to be provided	

6. Stereo Zoom Trinocular Microscope with image analysis system.

S. No.	Technical Details of Equipment	Units
1	**Microscope** • Stereo zoom microscope with a zoom ratio of 16:1 / 20.5:1 with fully apochromatic parallel optics system. • Motorised 16:1/20.5 or better zoom • Magnification range of 7.8x to 160x with 1x objective • At research grade this scope should be used for brightfield, darkfield, polarization, even fluorescence imaging (optional) • The resolution of 1500 line pairs per mm or better • Motorized coarse fine focus drive and control unit • Trinocular observation tube with 100:0 for visual and observation • Apochromatic Objective magnification of 1x with a free working distance of 61 mm or more with wide field • Transmitted light halogen illumination equivalent 20 Watts or more • The lamp bases with built-in cooling fans are best suited for oblique illumination. It should provide for bright darkfield illumination. For LED illumination with no heat to damage delicate or living specimens. • Incident light LED adjustable dome illumination or thin type LED transmitted illuminator, LED 4 position turret for contrast adjustment between bright field, oblique and dark field illuminations • Double iris diaphragm for better depth • 5 or more MP full MC digital camera with high speed acquisition of 30 fps in HDR or better, camera should work in both stand alone and PC modes and should be Mac and windows compatible. It should meet needs of bright field, dark field polarized observations. • Digital imaging – it should have a tilting trinocular head that allows the user to switch between viewing and documentation. This unit is also able to use the imaging software. • Live measurement module. • Auto-montage software for capturing images at various z levels and combining them into a single image. 3Dviewer in the optional. • Microscope and camera should be of the same make for synergy • Soft ware: Imaging software and measurement soft ware. **<u>Compatible computer should by supplied along with Microscope.</u>** All in One Desktop computer , i-5 processor, 4GB RAM, 500GB hard disk, 22'' with UPS **Warranty**: Vendor should provide at least 2-3 year warranty and hands on training after instrument installation.	1 No

7. Protein analyzer.

S. No.	Technical Details of Equipment	Units
1	**Protein analyzer** Method of analysis: Nitrogen determination according to Dumas method & Generic combustion method Duration of analysis: 3/4 minutes Detector: Innovative TCD auto calibrating Sample weight: minimum ≤ 250 mg, max 1g. Auto-sampler capacity: up to 4 discs, ≥ 30 positions each Reproducibility (RSD): < 0.5% for EDTA standards (9.57%N) Combustion temperature: 1030 °C Recovery:> 99.5%; Detection limit:0.003 mg nitrogen PC Control & Monitoring: with latest software compatible with Printer laser jet 1020 plus unit. Interfaces: USB; RS232 Power supply: 230 V / 50 - 60 Hz Accessories: Start-up kit Consumables: For 5000 analyses, apart from the consumables to be supplied by default with the equipment. Along with consumables and accessories IQ, OQ, PQ certification. Supply of standard reference material, (NIST), Equipment should follow standard methods of AOAC/ISO for estimation of nitrogen. With two years warranty	1 No

8. UPS 20 & 30 KVA.

S. No.	Technical Details of Equipment	Units
1	**UPS 20 KVA** True online double conversion fully microprocessor controlled UPS system with in-built isolation transformer along with sealed maintenance free battery bank for 1 hour back up on connected load inclusive all necessary accessories. Power range: 20KVA; Power rating: 20 KW **Input** Normal voltage :220/380 Vac, Voltage range: 40%~20% (242~477/140~276 Vac) Frequency:50/60Hz±10Hz Power factor: >0.99 (full load) Current harmonic Distortion:<3% **Output** Voltage: 220/380 Voltage harmonic distortion: < 1.5 % (linear load) Voltage regulation: ± 1 % static; Frequency: 50/60 HZ±0.05Hz Overload capability: ≤105% continuous, 106%~ ≤125% 10 minutes, 126-150 % 1 minute, ≥150% 1 second. **Battery:** Quantity: 32-50pcs In built charge current: 20k: 5A	1 No

	Backup time: 20K: 2/3 hours **Efficiency:** on line mode up to 96 % ECO mode up to 99% **Other features:** Emergency power off: yes Maintenance bypass switch: yes Operational temperature: 0~40^{0}c and humidity: 5-95 % Audible noise:20 K ≤ 55 dBA	
	UPS 30 KVA True online double conversion fully microprocessor controlled UPS system with in-built isolation transformer along with sealed maintenance free battery bank for 1 hour back up on connected load inclusive all necessary accessories. Power range: 30 KVA; Power rating: 30 kW **Input** Normal voltage :230/400 Vac, Voltage range: 40%~20% (242~477/140~276 Vac)** Frequency:50/60Hz±10Hz Power factor: >0.99 (full load) Current harmonic Distortion:<3% **Output** Voltage: 230/400 Vac Voltage harmonic distortion: < 1.5 % (linear load) Voltage regulation: ± 1 % static; Frequency: 50/60 HZ±0.05Hz Overload capability: ≤105% continuous, 106%~ ≤125% 10 minutes, 126-150 % 1 minute, ≥150% 1 second. **Battery:** Quantity: 32-50pcs In built charge current: 30k: 9A backup time: 30K: 2/3 hours **Efficiency:** on line mode up to 96 % ECO mode up to 99% **Other features:** Emergency power off: yes Maintenance bypass switch: yes Operational temperature: 0~40^{0}c and humidity: 5-95 % Audible noise:30 K < 60dBA	1 No

9. Microwave digestion system.

S. No.	Technical Details of Equipment	Units
1	Front loading digestion unit made up of stainless steel with PTFE coated cavity with high efficiency cooling unit. Volume of Resonant Cavity: 60 L or more Maximum withstanding temperature of cavity: 300-350℃. Max Operation Temperature: ≥ 250℃ Temperature accuracy: ± 0.1℃ Temperature control stability: ± 1℃ Vessel Design Pressure range: 140-150 bar or more (2200psi or more) Operating pressure should be 100 bar or more Microwave source: Dual magnetrons with uniform heat distribution. Safety: door lock and highly safe door Inner vessel: High strength frame, made up of PTFE - TFM, Safety precaution for pressure release Auto-venting vessel: High purity PTFE - TFM lined, easy manipulation of rotors, vessels and sensors. Temperature monitoring: Insitu and IR sensors for efficient monitoring of temperature. Programme control and viewing: LCD screen with touch screen operating monitoring. Easy data saving review and export. Power input: 220-240 v/50 Hz, 15 A Power consumption: 3000-3200 w Maximum microwave output: 1600-1900 W Microwave frequency: 2400-2500 MHz Microwave emission mode: Continuous. Rotors: 12- 16 vessels, 100 bar pressure, 100 ml volume. 40-46 vessels,35-40 bar, 100 ml volume Upgradable to perform extractions as per EPA METHOD 3546 & ASTM D-6010. Upgradable to perform heating for ashing and fusions Along with required consumables, accessories and installation. With two years warranty	1 No

10. UV/VIS/NIR Spectrophotometer.

S. No.	Technical Details of Equipment	Units
1	**UV/VIS/NIR Spectrophotometer** Double beam UV/Visible Spectrophotometer with Czerny-Turner monochromatic mounting suitable for measuring fixed and multiple wavelengths, scan mode, time scan analysis etc. Suitable for food, water and beaverage analysis. Wavelength range: 175 nm - 3300 nm UV/Vis resolution: 0.05 nm – 5.00 nm NIR resolution: 0.20 nm – 20.00 nm Stray Light at 220 nm: ≤ 0.00008 %T (10g/l NaI ASTM method) Photometric Range: 8A Photometric accuracy : ±0.01A Wavelength accuracy: ±1.0 nm Resolution > 1.5 (Toluene in hexane) Minimal Scan time 1 s Max. Number of Methods ≥20 PC control options: 1. Printer 2. Cuvettes & Cuvette Changer 3. PC Software for control, data storage and analysis. Along with consumables and accessories With two years warranty	1 No

11. Rotary shaker for culture with temperature control.

S. No.	Technical Details of Equipment	Units
1	**Rotary shaker for culture with PID temperature control** Swirling agitation for tissue culture work, aeration of fermentations and other chemical mixing procedures. Plot form size:> 60 x 60 Cm No. of tier: 2 Carrier: Combination of 250 ml or 500 ml or 1 L or 2 L Temperature: 0 - 60 ^{O}C or more RPM : 20-250 with timer Along with consumables and accessories With two years warranty	1 No

12. Fat analyzer.

S. No.	Technical Details of Equipment	Units
1	**Fat analyzer (Equipment should follow standard AOAC/ISO method for fat extraction.)** Eight-place fully automatic, unattended Soxtherm extraction unit with multistat control along with suitable compressor. Pneumatic control. Continuous monitoring of cooling water and compressed air. Heating range: 135^{o}C, 200, 300 ^{o}C. 8 macro extraction beakers. 25 extraction thimbles (33 x 80 mm). 4 holders for extraction thimbles. Boiling stones: 250 g 1 line filter 1 tongs for extraction beaker PC enabled with controlling and documentation. Along with consumables and accessories With two years warranty	1 No

13. Hunter colour lab/Colour matching spectrophotometer.

S. No.	Technical Details of Equipment	Units
1	**Hunter colour lab/Colour matching spectrophotometer/equivalent** Hunter Lab Colorimeter 45°/0° Geometry for Visual Correlation. 45°/0° Illumination Port size: 31.8 mm($45^o/0^o$) Spectral range: 400 – 700 nm Spectral resolution: <3 nm Spectral band pass: < 12 nm Reporting Interval: 10nm Photometric: 0-150 % Light Source: Pulsed Xenon lamp. Lamp life: > 1 million flashes Interval between measurements: 3s Backup for setups and data, data export to excel Illuminants: A,C,D50,D55,D65,D75,F2,F7,F11 Observers:2° and 10° Detection: 256-element diode array and a high resolution concave holographic grating Colour Scales: CIE L*a*b*, Hunter lab, CIE L*C*h, CIE Yxy, CIE XYZ Colour Difference scales: ΔE*, ΔE, ΔC*, ΔC and ΔE cmc Colour spaces: Hunter L, a, b, CIE XYZ CIE L*a*b*, CIE L*, c*, h*, CIE Yxy, Hunter Lab, CIE Lch. Indices: E313 Whiteness, E313 Tint, E313 yellowness, D1925 yellowness Brightness: ISO gray scale, gray stain. Should provide Calibration standards certified Traceable to NIST Should provide a calibrated diagnostic green tile for performance validation. PC enables interface with easy match software and data acquisition. Measurement Storage Capacity 2000 readings & 250 product setups. Along with consumables and accessories (Ring & disk set, glass covered port insert, 1 inch aperture, glass sample cup, sample cup opaque cover) With two years warranty	1 No

Specifications of tender cost for supply of equipment at Citrus Research Station, Tirupati

14. Real Time PCR

S. No.	Technical Details of Equipment	Units
1	1) Real Time PCR with run time of less than 45 minutes. The machine should provide **5 color multiplexing +HRM**. The system must be a fully integrated quantitative PCR amplification, detection, and data analysis system and should be open for all chemistries including SYBR® Green and Eva Green dyes as well as fluorogenic probe systems including Taq Man probes. 2) The system must provide advanced optical system for detection of Excitation Source 8 dye specific or fixed optics. 3) The system should not need reference channel and should have features such as "Set it and forget it" calibration. 4) The system must offer 96-well format with 0.2 ml. should be supported by 96 well plates and strips from the same manufacturer/rotor type. The system must be open to accept consumables from other vendors also. 5) The system must offer minimum sample volume of 10 µL. 6) Use of Internal passive reference should be optional. 7) The system should have excellent Dynamic Range. The system should perform within 0.2°C or less of the target temperature. The instrument must detect across ten orders of magnitude. 8) The Thermal System should have: 1. Six peltiers made from two ceramic plates with semi-conductor elements, 96 well/rotor typt 2. Temperature Range 35.0 – 99.9°C 3. Heating: 6°C/sec 4. Cooling: 3°C/sec 5. Accuracy: ± 0.2°C or better of target 9) The Software should have robust data analysis algorithms and intuitive organization for precision and ultimate ease-of- use. The software must; 1. Control experimental bias due to differences in amplification efficiencies through robust algorithm 2. Have multiple, customizable data analysis algorithms 3. Have thermocycling control and precision 10) qPCR software should provide results 1. Capturing RDML information required for publishing under the mi QE guidelines. 2. Simultaneously, the software should be equipped to export images and raw data in multiple formats, allowing results to be viewed in common programs. 11) Instrument should be factory calibrated. 12) The system should offer true High Resolution Melt (HRM) and should be able to resolve even Class IV SNP 13) High Resolution Melt (HRM) software for analysis 14) Broad Applications should include: 1. Gene Expression Validation 2. Comparative Quantification (Single-Plex and 5 TargetMultiplex) 3. Quantitative PCR (Single-Plex and 5 Target Multiplex) 4. Genotyping, Allele Discrimination 5. NGS Library Quantification	1 No

	AUTOMATED LIQUID HANDLING MACHINE: • System should be suitable for applications like making serial dilutions; plate reformatting from **1 well to 96 well & vice versa; plate replication in 24 well or 96 well formats**; reagent transfer from reservoirs; low volume assay set-up (like **PCR, Real Time PCR and sequencing set-up**); pooling of samples from plates to tubes, media change for cell culture; compound testing; • Should have features such as pipetting pattern recognition or the ready to go ensure that entering the world of automation is fast and easy. • Should have pipetting range from 1 µl to 1000 µl. • Should be able to mix the reagents with user defined volumes. • Should be an open system. • Should have pipetting tools with **single- and/or eight-channel heads**. • Should be supplied with Single Channel pipetting tool from **1-50ul** • Contact free dispensing to minimize cross-contamination. • Typical pipetting precision should be below 2% CV at 1 µl. • Should be compatible with **0.2 ml PCR to 50 ml blue-cap tubes; 6 to 96 and 384 well plates.** • Should be able to use filter and non-filter tips. • Should be able to discard tips as per the need. • Should have a separate container for tip disposal. • Should have completely contained housing including door safety mechanism. • Should have optical confocal infrared detector or advanced detection for lab wares, tips, and liquid levels. • Should have **easy to use software with pre-loaded lab ware files**.	

15. Automatic DNA and RNA isolation and analysis system (24 to 96 well farmat)

S. No.	Technical Details of Equipment	Units
1	**DNA and RNA isolation** • It should be a open system • Reliable DNA, RNA, and miRNA extraction from virtually any plant sample type • Mid- to high-throughput functionality for saving costs and time & eliminate human error. • User-friendly software for easy data management and documentation. The instrument must be Innovative design with features increase safety and minimize cross-contamination, Convenient, flexible, and easy-to-use with small footprint • Automated mid- to high-throughput nucleic acid purification in 96-well format using **reagents/silica membrane technology/bead based**. Users can quickly and easily purify DNA, RNA, and miRNA from almost any type of sample —**plant samples**, bacteria and viruses in plant samples. • Instrument must have safety features, should include a **translucent hood**, help to protect precious samples from environmental contamination. The **HEPA filter** maintains positive clean air pressure on the worktable underneath the hood and protects precious samples from potential airborne contamination. The **UV light** provides efficient worktable decontamination and helps to prevent cross-contamination. **DNA/RNA analysis:** • Walkaway sample processing system using ready-to-run gel cartridges containing 12 separation micro-channels with a built-in gel matrix for fast high-resolution DNA fragment, RNA separation & protein analysis. • In the system, samples are accepted in both 12-well strip format as well as 96-well plate format to minimize the time required for experiment setup and streamlines the workflow with the flexibility in the throughput options. • The system must have fully-automated and sensitive, high-resolution capillary electrophoresis of up to 96 samples per run. • The gel cartridge must have the reasonable self-life. The system should support green environment and minimizes the use of the hazardous materials. • The system consists of the advanced analyzer, which is based on a unique multiplexed fluorescence detection design including an array of light-emitting diodes and micro-optical collectors, gel cartridges, and Software. • The high detection sensitivity of the system enables generation of more robust results with low concentrations of nucleic acid. • The resolution capability of the system should have down to 3–5 bp for fragments smaller than 0.5 kb provide more accurate results compared to conventional slab-gel methods and a higher confidence in data interpretation. • Sample consumption is less than 0.1 µl per analysis, saving precious samples for further downstream analysis.	1 No

	• The system allows analysis of DNA fragments between 15 bp and 10 kb. Fragments of less than 500 bp in size can be separated with a resolution of 3–5 bp providing higher confidence in data interpretation compared to conventional high-quality agarose gel electrophoresis. • The system should have robust detection sensitivity of 0.1 ng/µl DNA, in undiluted PCR solution. • The should have the robust detection facility for the separation of proteins according to size [Sizing range: 10-100KDa], under denaturing conditions, under reduced or non-reduce conditions possible in completely automated way • The detection of the separated proteins is realized after covalent labeling with a fluorescence dye performed during the sample denaturation step. • Limit of detection or dynamic range should be 2.5 ng – 250 ng /ul . • The analysis workstation should be of branded Lap Top with Licensed Windows operating systems. • The analysis workstation must have the powerful and intuitive software solution which will support compliance with 21 CFR part11 regulations, enabling use of an electronic records system. • The software provides user-friendly tools for data collection, data analysis, generation of comprehensive reports, and easy data export. The software provides flexibility to view data in electropherogram and gel image format. All-in-one analysis for multiple data sets simplifies sample evaluation and a unique software algorithm allows a variety of peak properties to be calculated, including peak number, peak height and width, as well as the peak area, which are displayed in result tables. • The system should offer a broad range of applications. Preprogrammed methods in combination with the suitable gel cartridge allow separation and analysis of single or multiplex PCR fragments, restriction digested DNA or plasmid inserts, synthesized oligonucleotides, total RNA, and single stranded cDNA, as well as cRNA quality checking. **Warranty**: Vendor should provide at least 2-3 year warranty and hands on training after instrument installation. • **Suitable for Lab accreditation with standards and Complete work flow automation in 96 well format**	

16. Fluorescent microscope plant pathology studies

S. No.	Technical Details of Equipment	Units
1	**Fluorescent microscope** (Fluorescent and DIC, Bright field, Dark field Reflected light and Polarized observations necessary) • Dark field reflected light, bright field and fluorescence research microscope (**2000X**) motorized flat farm and facility for live cell image. • 100 watts Fluorescence attachment with '8' position Fluorescence turret. • All fluorescence filters for Blue, Green and UV excitation etc. **Camera**: 5 to 12 MP camera. It should meet needs of fluorescent, Bright field, Dark field and Polarized observations along with analysis software. Sensitive to use in FISH. **Software**: Imaging Software**.** Easy switching between DIC and fluorescence imaging modes. FISH studies • **Warranty**: Vendor should provide at least 2-3 year warranty and hands on training after instrument installation.	1 No

17. -80^{O}C Deep freezer

S. No.	Technical Details of Equipment	Units
1	**-80^{O}C Deep freezer (Vertical model)** • The Capacity should be **550 - 650 liter** • Low Power consumption: **less than 9 Kwh per day (should mention clearly in quotation)** • -86 ^{O}C freezer capacity : 40,000 samples of 2ml tubes • Programmable Temp. Range from -20°C up to –86°C in increment of 1°C even at ambient temp up to 32°C • Operating ambient temp is up to 32deg.C • High efficient compressor control system reduces cyling times to lower energy consumption and increase freezer longevity. • Insulation should be composed of **Vacuum Insulation Panel technology (VIP)** to traditional foam • Refrigerants : Eco-friendly reliable and safe **hydrocarbon based refrigerants** • It should have Diagnostic Software: System Monitoring & Reporting Technology Software built –In for fault diagnosis or set point variance. • System should be single door with 4 to 6 compartments • The freezer must have **Heated air Vent to prevent ice formation** with Spring-Assisted plunger to remove vacuum for easy opening. • The system should have Non- Volatile memory & Auto re-start and Battery Backup for the display • The system must come with 4-digit password protection for temp. & alarm set-points • The system should optional facility for **CO_2 and LN2 back up systems** • **CFC Free and HCFC free refrigerants** with biodegradable Polyolester oil compressor • Highest < 2 meters **Racking System should provide along with freezer** • Suitable racks for 5cm, 7.5 cm tall box should be provided • Lightweight for easy transport, yet durably constructed of noncorrosive aluminum for maximize storage space;Racks for freezer should feature drawers that pull forward for easy accessibility to samples.	1 No

18. Colony counter

S. No.	Technical Details of Equipment	Units
1	It should automatically reads different plate types up to 150mm diameter - generates true to life full colour images using multi-array LED lighting - 12-20 megapixels COMS camera/1.4 to 5 mp CCD camera and high resolution colour camera with sharp optics - Excellent image quality - Full colour images for colorimetric colonies - Operate camera via PC or built-in touch-screen - Count colonies in under a minute - Generate and export analysis reports **Lighting**: Reflected-light illumination system in multiple wavelength LEDs (red, green, blue etc), Multi-array LED lighting (computer controlled) and Lower lighting with upper reflective lighting for all applications. Transmitted-light illumination system in ultraviolet sources. **Colony Capture and Counting software:** The software should have an extensive array of features and can cover a wide range of applications. Colony counting and zone measurement etc.	1 No

SCOPE OF WORK FOR UNIVERSITY:

- Electricity three phase 440 w without interrupt shall be provided by the university.

Annexure– III
(General Conditions)

Submission of Tender and Deposit of earnest money

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

Validity of rates and other Conditions

1. The defect liability period for the supply and installation of Equipment for Quality Control Lab shall be given for 24 months from the date of installation. In the event of any correction or defects or replacement of defective material is to be done during this period, it should be corrected/ replaced at the cost of the bidder/ agency.
2. The validity of the tender will extend for a period of three months (90days) from the date of placing the initial supply order and it shall be open to Dr.YSRHU to place the orders with the suppliers on the same rates, terms and conditions for any additional quantities likely to be recurred during that period. If required, the University may solicit the bidder's consent for an extension of the period of validity. The request and response shall be made in writing / cable / telex / fax / e-mail.
3. The Technical Bid (Annexure I - Part I & II), Annexure III should be taken in to consideration) and Financial Bid (Annexure II - Part I & II should be included) should be sealed individually in separate covers and both these covers should be kept in a single cover.
4. The inner and outer envelops shall bear the following address:

Co- Principal Investigator,
Pr. Scientist (Hort.) & Head
Horticultural Research Station
Lam, GUNTUR.

5. The inner envelopes should also contain the name and address of the bidder.
6. Telex, cable, e-mail or facsimile bids will be rejected.
7. Bidding Documents must be received by the University at the address specified not later than the time and date specified in the invitation (Notification) for bids. In the event of the date specified being declared as a holiday for the University, the bids will be received up to the appointed time on the next working day.
8. The Bidder's representatives who are present shall sign in the register evidencing their attendance.
9. During evaluation of bids subsequent to opening, the University may at its discretion, to ask the bidder for clarification of its bid. They request for clarification and the response shall be in writing and no change in the bid will be entertained.

10. The evaluation of the bid will take into account, the past experience in addition to the bid price. Such price should include all duties and taxes to be paid or payable on components of works.
11. The bidder may present power point presentation to Committee on the following.
    a) Equipment related and their working performance
    b) Operation and maintenance
13. The successful tenderer (s) will be intimated by letter (s) or other means of communication and the tenderer (s) so informed shall be bound from the time of transmission of such acceptance by the University. Formal acceptance of the tender (s) will be forwarded to successful tenderer (s) in due course but it will serve merely as a confirmation of the initial information and shall not affect the time from which the offer is/are is bound by the contract(s).
14. The University is not bound to accept the lowest tender. Any or all the quotations may be rejected without assigning any reasons. It reserves the right of acceptance in whole or part of the offer made. The decision of the Dr.YSR Horticultural University in the matter shall be final and binding on the tenderers.

TENDER EVALUATION

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

a) Technical Bid Evaluation:

While power point presentation or the examination of the documents submitted by the tenderer, the committee shall have the right to verify the claims of experience made by the bidders. Based on the bid evaluation, only technically qualified bidders shall be short listed. After thorough evaluation of the technical bid by the committee, the financial bid of only technically qualified Bidders shall be opened in due course.

b)Financial Bid Evaluation:

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

Committee:

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

b. The successful bidder shall be responsible for the operation and maintenance of the equipment for a period of ONE YEAR from the date of installation. The bidder shall deploy at least one experienced person from time to time for advising any doubts regarding operation and maintenance besides troubleshooting whenever required.

Other contractual obligations

1. The contract shall not be deferred/ modified except by written consent by both Dr. YSRHU and the Bidder.
2. The Bidder shall not sublet or delegate this contract or part thereof without the written consent of the Horticultural University.

Consequence of non-supply and damages

1. All risks of loss, damage or depreciation to the equipment/ material there off shall be upon the supplier until the material is delivered at the addresses specified and in accordance with the provision of the contract. Till the material is received at the respective destination indicated by the university, the property continues to be at the risk of the Bidder. The mere fact that the material is delivered to transporter is no defense to the Bidder and the Bidder will be squarely held responsible for any delayed receipt of the material by the University or for loss or damage of any kind to the material in transit.
2. Assuming that the bidder fails to deliver any or all the material covered by the contract, the Horticultural University reserves the right in addition to other legal remedies, to cancel the contract or any portion thereof and hold the Bidder liable for all damages sustained by the university by virtue of the Bidder failing to perform the contract and consequent cancellation of the contract.

3. The time allowed for delivery of goods shall be deemed to be the essence of the contract. The University also reserves the right to cancel the purchase order in case supplies are delayed beyond the scheduled date of delivery and to make such arrangements as it may think fit for the completion of supplies on account and at the risk of the suppliers (s). The additional expenses thus incurred together with the consequential losses and also the liquidated damages shall be recovered from the supplier out of his / their security deposit / earnest money deposit and any other amount due to him / them. The balance still, if any, payable by the supplier shall be paid by him/them within 7 days of notice by the Dr.YSRHorticultural University

FORFEITURE/REFUND OF THE EARNEST MONEY DEPOSIT(EMD)

1. In case the selected Tenderer(s) does not supply the equipment at the quoted rates within the stipulated time and commits any breach of any one or more of these terms and conditions, the Earnest Money Deposit deposited by the Tenderers (s) will be forfeited.
2. Earnest Money of the unsuccessful Tenderer (s) shall be refunded within three months from the date of decision regarding the tenders. No interest is payable by the University on such deposit.
3. On due performance and satisfactory completion of the order in all respects during the contract periods, the Earnest Money Deposit(Security Deposit) will be refunded to the Bidder (s) without interest within a period of 3 months with effect from the date of receipt of a request to this effect from the Bidder .

SETTLEMENT OF DISPUTES

1. Any difference or dispute arising out of or in connection with this tender or acceptance thereof or the contract that may be entered in consequence thereof, shall be decided by arbitration. The Chairman of the committee for purchase of the equipment, DrYSR Horticultural University or his nominee shall be the sole arbitrator and the arbitrator's decision shall be final and binding on the parties. The Tenderer(s) will have no objection to such appointment on any ground whatsoever including that such nominee, in his official capacity dealt with this matter at any stage.
2. The parties hereby agree that in the event of any dispute no cause of action shall arise in their favor to approach any court unless they have restored to and exhausted the remedy of arbitration as envisaged above.
3. The parties also do hereby agree that the contract envisaged by these terms and conditions shall be deemed to have been entered into at DrYSRHU, V R Gudem and the courts at Eluru, West Godavari District alone will have jurisdiction to try and legal proceedings which may arise out of this contract. Neither party shall file any proceedings in any other Court.

TENDER FORM
(Should be included in Financial bid only)

From :

To
The Co-Principal Investigator &
Pr. Scientist (Hort.) & Head
HRS, Lam

.

Ref: 1.Your tender Notice No: NIT NO.1/Dr YSRHU/2016-17 Dated.....
2. EMD – D.D. No. .....Dated.....for Rs.....

***

I/We have read the contents of the terms and conditions mentioned in your tender schedule and its enclosures and agree to abide by the same.

I/We hereby offer to Supply and Installation of Equipment to Quality Control Lab prescribed in the schedule (or such portion thereof as you may specify on the acceptance of tender) at the price given below.

I/We agree to hold this offer open for a period of 3 months from the date of acceptance of tender and shall be bound by communication of acceptance dispatched within a period of 15 days from the date of accepting the tender of the bidder.

I/We have also examined the requisite specifications of the material to be supplied and my / our offer is to supply the required material in accordance with the requisite specifications.

I/We have carefully considered all terms and conditions in Annexure I,II and III and particulars regarding settlement of disputes and we have signed the same in token of consciously accepting the same and do hereby state that we accept them without any reservations and accordingly I/We quote the rates inclusive of all taxes, duties, transportation, insurance etc., as below.

Name of the item Unit Unit price

The articles will be ready for delivery within .....days from the date of receipt of supply orders.

Yours faithfully,

Proprietor
(Signature and stamp of the Tenderers
State legal status, whether Prop./
Partner / Registered firm / Company etc.)

Encl: Samples enclosed

EMD-DD No.....dated.....for Rs.....

Dr. YSR HORTICULTURAL UNIVERSITY

HORTICULTURAL RESEARCH STATION, LAM

GUNTUR DISTRICT

TENDER NOTICE

NIT No:1/Dr YSRHU/2016-17 **Dated: 21-03-2017**

Bids are invited from firms for Supply of equipment and infrastructure for the lab at HRS, Lam and CRS Tirupati. For details visit the **www.drysrhu.edu.in.**

Co- PI, P. S. (Hort.) & Head
HRS, Lam