



INDIAN COUNCIL OF AGRICULTURAL RESEARCH  
ICAR RESEARCH COMPLEX FOR N. E. H REGION  
UMROI ROAD, UMIAM, MEGHALAYA-793 103



No. RC(S) 124/2015

Dated Uiam, the 16<sup>th</sup> February'2016

**OPEN TENDER**

Sealed bids are invited for procurement of **Scientific Equipments/ Instruments** from the reputed registered firms/ manufacturers/ authorized dealers by ICAR Research Complex for N.E.H. Region, Umroi Road, Uiam, Meghalaya. The detailed specifications of the items and terms & conditions etc. are given below:-

1. **Every Tenderer shall have to deposit consolidate cost of Tender paper of Rs. 1000/- (Rupees one thousand) only ( Non – refundable)** to be deposited in the favour of the Director, ICAR Research Complex for NEH Region, Uiam – 793103 by means of Demand Draft payable at SBI, ICAR Complex Branch, Uiam. Non – submission of the cost of Tender paper shall lead to non – consideration of the Tender.
2. Every quotation should consist of two Bids- The techno-commercial bid (**Bid 'I'**) and the Financial bid (**Bid 'II'**). Both must be submitted in two separate envelopes to be sealed and put in a single main cover. The outer main cover should be super scribed as **"TENDER NO. RC(S)124/2015 dtd.16.02.2016 for procurement of Scientific Equipments/ Instruments, under NICRA PROJECT, I.C.A.R RESEARCH COMPLEX FOR NEH REGION UMIAM"** and addressed to **"THE DIRECTOR, ICAR RESEARCH COMPLEX FOR NEH REGION UMIAM, MEGHALAYA-793103"**. The Bidding Firm should give their complete address on the bottom left corner of the Main Cover. **The Cost of the Tender as well as the consolidate Earnest Money along with all other Technical Details should be mandatory kept in the Technical Bid only. The Financial Bid should consist of the Rates, their detailed break –ups, etc. Non-compliance of this shall lead to non-consideration of the Bid.** All Tenders should be sent by Registered Post. Tenders to be handed delivered should be put in the Tender box, kept in the office chamber of CAO, ICAR Research Complex for NEH Region, Uiam, Meghalaya-793103 not later than **12:30 P.M. on 8<sup>th</sup> March, 2016**. Tenders received after the due date and time shall not be considered under any circumstances.
3. **The rates quoted should be up to ICAR Research Complex for NEH Region, Uiam, (as per the details) for the mentioned items.** The rates must be valid for at least for **1(one) year** from the date of quotation.
4. **Price quoted must be given per unit and must be all inclusive, including packing, forwarding, Delivery charges, Taxes, VAT etc., as may be applicable.**
5. Attested copy of the up to date sales tax and income tax clearance certificate (if any) from the authority concerned should be submitted with the quotation.
6. **Furnishing of related documents like detailed specifications, technical literature, brand name, model and make, catalogue, authorization letter, Dealership Certificate, company registration certificate, product certification, price list (if any) etc. is mandatory, Dealership certificate/Agency Certificate for the manufacturer/ manufacturing firm should be enclosed if the rates are quoted by the Dealers/Agents. Sales tax certificate, tax clearance (up – to date), valid CST/VAT registration certificate, last 3-5 years financial standing etc. along with all the commercial terms and conditions. Failing which the quotation shall not be considered.**
7. **The supply is effected at DGS&D rate contract, wherever is applicable.** The rate should be quoted for list of items as per the tender document.
8. The Buyer shall not be responsible for payment of transit insurance charges.
9. Payment shall be made on actual delivery in good condition and successful installation and demonstration (which should be free of cost and must be completed before payment).
10. (a) **In case of imported goods, the price may be quoted in foreign currency and import will be on FOB basis.** However, custom clearance, Inland freight etc. will be the responsibility of the supplier and no separate charges will be paid for that, however, custom duty exemption certificate shall be provided. The supplier should inform well in advance for sending these papers. No demurrage charges will be paid. If the supplier desires, rate in corresponding Indian currency may be quoted. It will be at the discretion of the authority of ICAR Research Complex for NEH Region to accept Indian or Foreign currency prices.  
(b) In case of any custom duty charge, applicable as per Govt. of India's Notification, the same may be paid by the firm which will be reimbursed to the Indian Agent (who should be a registered firm and with DGS&D immediately, subject to the condition that the bill of entry in original along with all relevant papers are submitted immediately, after custom clearance and installation and demonstration of the items. Installation and demonstration should be free of cost.  
(c) **The import & payment will be made by means of Foreign Bank Draft/ Site Draft in case of foreign imported goods.** Performance Bank guarantee of 10% FOB value valid till the end of warranty period should be submitted before the release of the security deposit. All bank charges outside and inside India shall go to the beneficiary's account. Performance bank guarantee of 10% FOB value, valid till the end of warranty period, should be submitted before the release of the security deposit. All bank charges outside and inside India shall go to the beneficiary's account. Draft making charges would go to the beneficiary's account and a scanned copy of the draft, if required, can be sent to the Indian agent by post. Draft would be handed over after successful installation and demonstration which should be completed within 45 days from the date of draft and submission of all documents like bill of entry etc.

- (d) : All imported items should be delivered up to destination i.e. all the import should be free of inland freight charges, insurance etc.
- (e) **Indian Agency Commission rate and amount should be clearly specified as per rules. IAC, wherever applicable, will be paid in Indian Currency only.**
- (f) In case of delay in supply, penalty will be imposed @2% per week, subject to a maximum of 10% of the FOB value
- (g) Indian Agents quoting on behalf of their principal must be registered firms with DGS&D .They are also requested to provide necessary authorization letter from their principal along with the quotation.
- (h) **ICAR Research Complex for NEH Region, Umiam, Meghalaya, being a Scientific and Research Organization, is exempted from payment of Excise Duty (Certificate to this effect will be provided).**
11. **All Bidders should mandatory give their current, PAN Card No., TDS& other Bank A/C details to enable the office for releasing the dues via e- payment basis.**
12. **The tenderers [except those who are registered with the Central Purchase Organization & National Small Industries Corporation (valid proof should be mandatory enclosed)] shall have to deposit consolidate Earnest Money for Rs.10,000/- (ten thousand) only (for indigenous as well as for foreign items quoted in foreign currency, equivalent Indian currency may be deposited) in the form of Demand Draft, valid for 6 (Six) months, drawn in favour of the Director, ICAR Research Complex for NEH Region, Umiam, Meghalaya, payable at SBI, ICAR Complex Branch, Umiam as a bid security, along with the quotation. **The cost of the Tender paper as well as the consolidate Earnest Money along with all other Technical Details should be mandatory kept in the Technical Bid only. Non submission of the Bid Security with quotation shall make the quotation/ bid liable to be rejected.****
13. Performance Bank Guarantee is required for all indigenous items also. For items less than Rs.50,000, the amount should be 5% of the actual cost of the equipment and for items more than 50,000.00 the amount should be 10% of the actual cost of the equipment. The bank guarantee should cover the entire guarantee/ warranty period which should be of at least one year duration.
14. The selected tenderers must complete the supply/ installation/ demonstration within the stipulated time limit mentioned in the supply order. In case, the firm fails to execute the supply within the time limit, the bid security would stand forfeited and supply order shall be cancelled.
15. The guarantee/ warrantee should be from the date of installation. All guarantee/ warranty services should be attended within a maximum limit of 15 days, failing which, proportionate deductions from the security deposit may be made at the discretion of the Institute.
16. The complete details regarding the Institutions/ Corporations/ Bodies, etc. where the Firm/ Dealer has made the supplies during the last 2/3 years should also be furnished, along with the supply orders.
17. The Bidders should mandatory provide their full Bank Details, PAN Card No. , IFS code No., and TDS so as to ensure e-payment to them directly on satisfactory completion of the Supply.
18. The Director, ICAR Research Complex reserves the right to reject any tender in part or full, without assigning any reason thereof.
19. Legal jurisdiction for all disputes shall be within the purview of the Shillong Court.
20. **The Firm/ Agency run by the Non-Tribal should produce Trading License issued by the KHADC & also produce Municipal Trade License as applicable state to state & Tribals should provide Schedule Tribe Certificate, failing which the tender are liable to be rejected. Non submission of Trading License, tender rates shall be rejected / not to be considered. The participating the tender from State other than Meghalaya have to obtain KHADC before actual supplying of the materials.**
21. All bidders shall give an undertaking that they fully and unconditionally agree to abide by all the terms and conditions which, if needed, may be modified at the discretion of the Competent Authority, in supply order, for which confirmation from the supplier shall be taken. Non submission of the undertaking may lead to rejection/ non-consideration of the tender.
22. **The bidders should mandatory sign on every page of the Tender Document, which would show their unconditional acceptance of all the terms and conditions of the Tender Document.**
23. **Items should be supplied in time and with FOR destination (Umiam).**
24. Tenders shall be opened on **8<sup>th</sup> March, 2016 at 2:30 pm**, ICAR Research Complex for NEH Region, Umiam, Meghalaya – 793103. Interested bidders may attend the opening.
25. If the above mentioned closing /opening day of the tender happened to be non – working date due to Bandh/Strike as any other reasons, the tender will be received & opened on the following working day at the same time except on the 2<sup>nd</sup> (second) Saturday.
26. Other terms & conditions, as may be decided by the Competent Authority from time to time, depending upon the condition & requirement of the supply. The intimation in this regard, shall be provided well in advance & the bidder/ supplier shall be bound by the said terms & conditions.
27. For any query/ clarification, the undersigned may be approached at:  
Contact No.: 0364-2570363 (Tel- Fax)

E-mail : [kjoshiicar@yahoo.in/storesection@yahoo.in](mailto:kjoshiicar@yahoo.in/storesection@yahoo.in)

Sd/- S. V. Ngachan  
DIRECTOR



**'A'.List of Major Equipments/Instruments with specifications under NICRA Project**

Sl. No	Items	No. of units	Specification
1	Protein separation system and characterization facility including 2D electrophoresis, gel imaging and documentation with necessary software and all accessories	1	<p><b>Fraction Collector &amp; Accessories</b></p> <ul style="list-style-type: none"> <li>a. Fraction collector: The collector should be able to hold 80 to 120 tubes of 10-15 ml capacity along with provision for holding the micro centrifuge tubes (0.5-1.5ml). With time or drop mode, (to collect 1 drop to 9 ml or more). Provision for manual as well as automated advance of tubes.</li> <li>b. Pump: Bi-directional, peristaltic variable speed pump. Digital flow rate display in ml/min and time or volume progression. Fully compatible with software/ chart plotter.</li> <li>c. UV Monitor: Dual wave length (250/290nm) monitor for flow through monitoring with 2 or less mm path length flow cell compatible with above system.</li> <li>d. Gradient Monitor: External flow cell for placement flexibility, real time monitoring of conductivity, with compatible connections.</li> <li>e. Suitable software to run the above system for online monitoring and data recording with desktop and printer.</li> </ul> <p><b>Western Blot Apparatus (Semi dry blot system)</b></p> <ul style="list-style-type: none"> <li>a. Should be suitable for gel size of 10 x 10 cm and 24 x 16 cm</li> <li>b. Capacity to accommodate for mini and midi PAGE gel.</li> <li>c. Should be able to transfer in 15-60 min</li> <li>d. Single-step locking/ screw lock system.</li> <li>e. Platinum coated titanium anode and stainless steel cathode plate electrodes.</li> <li>f. Should accommodate various gel stack thickness (0.25 mm- 10 mm) and produce</li> <li>g. Uniform pressure on the blotting sandwich during transfer.</li> <li>h. Should come with agarose gel support frame to do transfers for DNA and RNA also in addition to Protein transfer. Pre-installation requirement should be mentioned in the bids.</li> </ul> <p><b>Power pack for semidry blot system</b></p> <ul style="list-style-type: none"> <li>a. Output maximum (range should be programmable) of 250 V, 700–1000 mA, and 150-300W.</li> <li>b. Microprocessor controlled constant voltage, constant current with automatic crossover.</li> <li>c. Four output terminals pairs to run four systems at a time.</li> <li>d. Timer fully adjustable.</li> <li>e. Real time editing function.</li> <li>f. LED display</li> <li>g. Safety features: No-load detection, sudden load change detection, overload/short circuit protection, input line protection, auto power backup. Input protection of fuse on both hot and neutral.</li> <li>h. Auto recovery after power failure.</li> <li>i. Pause/ resume function. Pre-installation requirement should be mentioned in the bids.</li> </ul> <p><u>Instrument Warranty</u>: 3 years comprehensive warranty and 2 years non-comprehensive warranty should provide at free of cost. Any items required to complete the system may be quoted.</p>
2	Blood/Serum Auto-analyzer	1	<p><b>Equipments should have the following features</b></p> <ul style="list-style-type: none"> <li>➤ 20 parameters +3 Histograms for WBC, RBC and PLT</li> <li>➤ 3 Counting mode: whole blood, Pre-diluted blood and peripheral blood</li> <li>➤ LCD display with Touch Screen and Mouse Operation</li> </ul>

			<ul style="list-style-type: none"> <li>➤ Throughput: 60-80 sample per hour</li> <li>➤ External AC adapter avoids electronic noises, enhancing accuracy</li> <li>➤ Should be stored up to 40,000-50,000 sample results</li> <li>➤ Working model should have dual-channel testing</li> <li>➤ Aperture for WBC: 70-80µm and RBC/PLT: 40-50µm</li> <li>➤ Result should give in less than one minute</li> <li>➤ Sample volume as low as 40µl for blood gases</li> <li>➤ Sample Volume for whole blood 9.8uL, pre-diluted blood 20uL, peripheral blood 9.8uL</li> <li>➤ Operating Environment: 15°C-35°C, Humidity&lt;80%</li> <li>➤ Boot check: Self check for hardware, alarm for disorder</li> <li>➤ Input/output: RS-232, USB, LAN, Keyboard and mouse interface</li> <li>➤ Printout: Thermal printer,55mm width paper</li> <li>➤ External printer optional</li> <li>➤ Power supply: AC220V ± 22V, 50Hz ±1Hz</li> <li>➤ Dimensions: 325 x 370 x 545 mm</li> </ul> <p><b>Parameters to be measured:-</b></p> <ul style="list-style-type: none"> <li>➤ WBC, RBC, HGB, MCHC, MCH, MCV, HCV, HCT RDW-CV, RDW-SD, PLT, MPV</li> <li>➤ PDW, PCT, P-LCR, LYM#, MID#, GRA#, LYA#, LYM%, MID%, GRA%,</li> <li>➤ CARRYOVER: WBC/RBC/HGB/&gt;0.5%, PLT&lt;1.0%</li> <li>➤ pH, pCO<sub>2</sub>, PO<sub>2</sub>, SO<sub>2</sub> %, Hematocrit, Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>/Ca<sup>++</sup>, Mg<sup>++</sup> Glu, Lactate</li> </ul> <p><b>Accuracy (CV):</b></p> <ul style="list-style-type: none"> <li>➤ QC: Comprehensive QC program, forming and printing the histogram automatically.</li> <li>➤ Performance index : Precision (CV) Linear rang</li> <li>➤ WBC≤2.0% 4.0-15.0×10<sup>9</sup>/L</li> <li>➤ RBC≤2.0% 3.5-6.0×10<sup>12</sup>/L</li> <li>➤ HGB≤1.5% 11-18g/dl</li> <li>➤ PLT≤4.0% 120-500×10<sup>9</sup>/L</li> <li>➤ MCV≤1.0% 80-110fL</li> </ul> <p><b>Instrument Warranty:</b> 3 years comprehensive warranty and 2 years non-comprehensive warranty should provide at free of cost</p>
3	Multi parameter monitoring system	1	<p><b>Equipments should have the following features:</b></p> <ul style="list-style-type: none"> <li>➤ High resolution 12-15" touch screen colour TFT LCD display</li> <li>➤ Upto 7 lead ECG display (12 lead ECG display optional)</li> <li>➤ Standard configuration of ECG, Respiration rate, Temperature, NIBP</li> <li>➤ Nellcor or Masimo SpO<sub>2</sub></li> <li>➤ Drug dose, Hemodynamic, Renal profile (nephridium), Ventilation, Oxygenation calculations and OXY CRG software</li> <li>➤ HL7 connectivity</li> <li>➤ Alarm event review-Crisis and warning</li> <li>➤ Thermal recorder (optional)</li> <li>➤ Full parameter storage function while power off with rechargeable battery</li> <li>➤ CNS: Wired/wireless</li> <li>➤ CNS: Wi-fi (optional)</li> <li>➤ Pacemaker detection function</li> <li>➤ ETCO<sub>2</sub> (Mainstream / Sidestream / Microstream )</li> <li>➤ Multigas monitoring</li> <li>➤ Cardiac output (ICG)</li> <li>➤ Dual IBP</li> <li>➤ BIS</li> <li>➤ EEG</li> <li>➤ Upgradable to ETCO<sub>2</sub> (mainstream / sidestream / microstream), dual IBP cardiac output, thermal recorder, multigas monitoring and second temperature (Rectal)</li> </ul>

			<b>Instrument Warranty:</b> 3 years comprehensive warranty and 2 years non-comprehensive warranty should provide at free of cost.						
4	Wood chipper & biomass shredder	1	Shredder cum chipper powered by III phase electric motor chip and shreds upto 50mm diameter, working capacity of around 1000 kg/hr with interchangeable sieve for desired output size from feeding materials dimension upto 350 mm having ability to shreds leaves and scrub also.						
5	Spectro Radiometer with all accessories	1	<p><b><u>Spectro-radiometer</u></b>  <b>Specifications:</b>  <b>Wavelength Sensitivity:</b> 220 to 1100 nm  <b>Irradiance Calibration Range:</b> 300 to 1000 nm  <b>Wavelength Resolution:</b> minimum 1.5 nm  <b>Detector Type:</b> CCD, 2048 pixel  <b>Grating Type:</b>Holographic &amp; aberration-corrected, 590 g / mm  <b>Digitizer:</b>16-bit  <b>Signal to Noise Ratio:</b>1000 : 1  <b>Stray Light:</b>0.02 % at 435 nm; 0.2 % at 220 nm  <b>Software:</b> Windows compatible (should be included)  <b>Computer Interface:</b>USB2  <b>Power Requirement:</b>100 mA at +5 VDC, supplied via USB cable  <b>Operating Temperature:</b>0 to +60 °C or more on both sides  <b>Optical Cable:</b>2 m armored fiber-optic  <b>Base Unit Size:</b>69 x 100 x 150 mm  <b>Mass:</b>900-1000 g  <b>Measurement Repeatability:</b>&lt; 1 %  <b>Calibration Uncertainty:</b>± 10 %  <b>Detector Integration (Exposure) Range:</b>1 ms to 65 s  <b>Directional (Cosine) Response:</b> 80° zenith angle: ± 5 %  <b>The unit should include:</b></p> <ol style="list-style-type: none"> <li>1. Spectroradiometer unit (including field carrying case) with data retrieval software &amp; calibration files</li> <li>2. Fiber Optic cable (minimum 2 meters)</li> <li>3. Cosine corrected radiometric head with black cap</li> <li>4. Bubble leveling plate</li> <li>5. 16 GB USB drive with Black USB cable</li> <li>6. Reflectance wand</li> <li>7. Compatible data retrieval system</li> </ol>						
6	Gas Chromatography with all accessories	1	<p>The item should have fully automated electric pneumatic control with microprocessor based gas chromatography system for analysis of green house gases (GHG) in a single injection technique through automatic gas sampling and backflush heated valve.  The GC should be able to analyze GHG like</p> <table> <tr> <td>Methane (CH<sub>4</sub>)</td> <td>0.5ppm to 300000 ppm</td> </tr> <tr> <td>Carbon Dioxide (CO<sub>2</sub>)</td> <td>0.5 ppm and above</td> </tr> <tr> <td>Nitrous Oxide (N<sub>2</sub>O)</td> <td>50 ppb and above</td> </tr> </table> <p><b><u>Column Oven</u></b></p> <ul style="list-style-type: none"> <li>➤ Column Oven Size should be 15 ltrs or more</li> <li>➤ Operating Temperature range: Ambient +5 °C to 460 °C or better</li> <li>➤ Temperature Set Point Resolution: 1°C - 3°C</li> <li>➤ Number of Ramps/Plateaus: 7/8 or more</li> <li>➤ Maximum Heating Rate: 40-45 °C/min or more</li> <li>➤ Oven Cool-Down (22°C ambient): 400 °C to 50 °C in &lt; 5-7 min or better</li> </ul> <p><b><u>Detector</u></b></p> <ol style="list-style-type: none"> <li>1. Flame Ionization Detector (FID) with Automatic Electronic Gas Flow Controller – Qty 1 <ul style="list-style-type: none"> <li>• MDL: &lt;3 pg C for C9 hydrocarbon or better</li> <li>• Linear Dynamic Range: &gt;107-110 or better</li> </ul> </li> </ol>	Methane (CH <sub>4</sub> )	0.5ppm to 300000 ppm	Carbon Dioxide (CO <sub>2</sub> )	0.5 ppm and above	Nitrous Oxide (N <sub>2</sub> O)	50 ppb and above
Methane (CH <sub>4</sub> )	0.5ppm to 300000 ppm								
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Nitrous Oxide (N <sub>2</sub> O)	50 ppb and above								

- Maximum Temperature: 450 °C or more

2. Methanator for trace level (0.5 ppm to 0.5%) Carbon Dioxide Analysis – Qty 1
2. Electron Capture Detector (ECD)with Automatic Electronic Gas Flow Controller – Qty 1

Radioactive Source: 370 MBq equal to 10 mCi, Ni

MDL:  $<1 \times 10^{-13}$  g/s Lindane or better

**Sensitivity:** 0.05- 0.1 pg/s Lindane or better

**Linear Dynamic Range:** >100

**Maximum Temperature:** 380-400 °C

**Heated Auto Gas Sampling Valve & Heated Valve Oven**

**Suitable heated Automatic Gas Sampling Valves for Gas Sample Injection & backflush with Sample Injection loop** –10 port Qty 2 , 6 Port – Qty 1 heated Automatic Gas Sampling Valves in separate heated Valve oven

**Separate Heated Valve Oven** – Qty 1

**Packed Columns**

Column packed SS HS-Q 80/100 3M 2.0MM ID 1/8" OD or equivalent - Qty 2 &

column packed SS PQ-Q 80/100 1M 2.0MM ID 1/8" OD or equivalent - Qty 2

**Software**

Suitable licensed Chromatography Management Software 32 bit windows 2000 / XP based chromatography integration software with PC, Printer to manage the entire work from software.

**Performance Specifications**

Typical Retention Time Repeatability: 0.005- 0.008 min or better

Typical Peak Area Repeatability: <1-2% RSD or better

Automatic Electronic Carrier Gas Controller – Qty 5 no.s

Pressure Range: 0–150 psi or more

**Modes:** Constant Pressure, Constant Flow and Programmable Pressure mode

**List of items –**

1. Gas chromatograph basic Unit with LCD & Keypad – Qty 1
2. Automatic Electronic Flow/Pressure controller – Qty 5
3. Detector ECD with Automatic Electronic Flow Controller– Qty 1
4. Detector FID with Automatic Electronic Flow Controller – Qty 1
5. 10 (Ten) Port Automatic Gas Sample Injection & Backflush Valve Heated with Sample Injection loop – Qty 2
6. 6 (Six) Port Automatic Detector Selection Valve Heated – Qty 1
7. Separate Heated Valve Oven for Automatic Gas Sampling – Qty 1
8. Methanator Catalyst for Trace level CO & CO<sub>2</sub> Analysis – Qty 1
9. Licensed Chromatography Software along with computer & printer – Qty 1 set
10. Suitable Columns for total analysis – COLUMN PACKED SS HS-Q 80/100 3M 2.0MM ID 1/8" OD or equivalent - Qty 2 & COLUMN PACKED SS PQ-Q 80/100 1M 2.0MM ID 1/8" OD or equivalent - Qty 2
11. 5-6 KVA – Online UPS with maintenance free batteries for 30-60 min. backup – Qty 1
12. Calibration Gas Standard for Methane & Carbon Dioxide 0.5-0.8 Ltrs Water Capacity – Qty 1 & Nitrous Oxide 0.5-0.8 Ltrs Water Capacity – Qty 1

**Consumables & Spares**

All necessary consumables & spares like all Gases with regulators, Tubing, Nut & ferrule, Gas Purification panel for all gases to install this equipment.

1. UHP Grade Nitrogen Gas with Double Stage SS Diaphragm Regulator – Qty 1
2. UHP Grade Hydrogen Gas with Double Stage SS Diaphragm Regulator – Qty 1
3. UHP Grade Zero Air Gas with Double Stage SS Diaphragm Regulator – Qty 1
4. Gas Purification Panel for all gases with Moisture, Hydrocarbon & dedicated Oxygen filter for carrier gas – Qty 1 set
5. GC Startup /Installation Kit – Qty 1

**UPS**

5-6 KVA, 230VAC & 50-55 Hz, Single phase input & Single phase output online UPS

			<p>with maintenance free batteries for 30-40 min. backup –Qty 1</p> <p><b>Calibration Standard</b>  Calibration Gas Standard for Methane &amp; Carbon Dioxide 0.5 ltrs. Water Capacity – Qty 1  &amp; Nitrous Oxide 0.5 ltrs. Water Capacity – Qty 1</p> <p><b>Warranty</b>  1 Yr warranty followed by two years of additional CMC</p> <p><b>Special Condition:</b> The bidder needs to have past experience of supplying similar system in any ICAR labs/Agricultural University. Please attach the performance certificate along with the offer as well.</p>
7	Environmental controlled chambers  (For studies on effect of environmental stresses on crop plant/ animals)	1	<p>1 Unit comprising of 3 modules and each module should have the following features:</p> <ul style="list-style-type: none"> <li>➤ Working size -1500mm x 2100mm x 2400mm (7' x 8' x 12')</li> <li>➤ Working temperature - +4 degrees Celsius from ambient temperature/ above ambient temp upto 55°C</li> <li>➤ Working humidity - 20% to 95%</li> <li>➤ Temperature accuracy - ±0.5°C</li> <li>➤ Humidity accuracy - ± (2-3%)</li> <li>➤ Temp. Controller - PLC based PID controller (including sensor)</li> <li>➤ Humidity Controller - PLC based PID controller (including sensor)</li> <li>➤ Humidity source - Generation of water vapour</li> <li>➤ Dehumidification- Based on absorption of water particles</li> <li>➤ Heating- By heater &amp; blower fitted in side chamber</li> <li>➤ Cooling system- Split type cooling system consisting of CFC free ISI marker ISO9001 certified silent sealed compressor and CE certified motor and ECO friendly refrigerant</li> <li>➤ Insulation- 80mm sandwiched puff insulated panel having high density (40kg/m<sup>3</sup>)</li> <li>➤ Inner wall- S.S.304 quality steel</li> <li>➤ Outer wall - G.I. precoated steel white finished</li> <li>➤ Flooring - S.S. 304 quality sheets</li> <li>➤ Air circulation - By fan mounted on top of roofing side chamber.</li> <li>➤ Illumination - By bulbs &amp; CFL fitted in side chamber on top, timer.</li> <li>➤ CO<sub>2</sub> Measurement - IR based CO<sub>2</sub> analyser</li> <li>➤ Range - Fresh air port that will supply clean air inside chamber as per door programme from panel. It includes HEPA &amp; prefilter &amp; fan blower. Time programme for opening the port hole.</li> <li>➤ Door - Large door 4'x 6' (WxH) fitted with large looking window 2' &amp; 4' size glass sealed with gasket and locking arrangement with heavy duty hinges.</li> <li>➤ Mounting - Mounting on sturdy wheel and locking system</li> <li>➤ Cleaning of Chamber - By water jet from door side</li> <li>➤ Drying of chamber - Using heating system provided inside chamber</li> <li>➤ Sterilisation facility - UV sterilisation fitted inside after cleaning of chamber</li> <li>➤ Power supply - 220-240, 4600VA with minimum 4 hours back up system for continuous running</li> <li>➤ Loading stand - 4; x 2' tapered stand outside the chamber</li> <li>➤ Control panel - HMI that displays all parameters along with alarm and set &amp; actual value of all parameter.</li> <li>➤ Accessories - hard ware and software for smooth operation of CO<sub>2</sub> environmental chamber</li> <li>➤ Multigas analyser for - Analysing CO<sub>2</sub>, O<sub>2</sub>, CH<sub>4</sub> &amp; H<sub>2</sub></li> </ul> <p><b>Instrument Warranty:</b> 3 years comprehensive warranty and 2 years non-comprehensive warranty should provide at free of cost.</p>




**'B'.List of Minor Equipments/Instruments with specifications under NICRA Project**

Sl.No.	Item	Specification
1.	Nitrogen analyzer (Fully automatic N digestion and distillation unit)	<p><b>A. Automatic Macro Block PC Compatible Digestion System</b></p> <ul style="list-style-type: none"> <li>• Twenty Place 250 ml capacity PC Compatible Block Digester with Casted Aluminium Alloy Heaters</li> <li>• Direct USB Port for PC/Laptop Connectivity, TFT Graphic Touch Screen Display.</li> <li>• Unique wireless mouse to operate touch screen without PC at a distance of 2 mtrs from equipment.</li> <li>• 70 programs &amp; 12 sequence steps, PC chart software, Live graphical representation of time/temp.</li> <li>• Live Schematic process flow feature with display of various stages with facility to have print options</li> <li>• Software enables multiple unit monitoring with multi user login feature</li> <li>• Inbuilt software program for micronutrient, macro nutrient, trace element analysis.</li> <li>• Upgradeable to Remote Control Module for wireless data monitoring, control and transfer to PC at a distance of 30 mtrs from equipment, Unit should be upgradeable to Data Logger Module &amp; Auto lift module.</li> </ul> <p><b>B. Automatic Scrubber System</b></p> <ul style="list-style-type: none"> <li>• <b>Four Stage Fully Automatic Microprocessor based acid neutralization scrubber</b> with digital display integrated online with motherboard of digestion with inbuilt water recirculation pump.</li> <li>• Should automatically start on operation of digestion system,</li> <li>• Auto stop on completion of digestion cycle with a delay time of 5 minutes to remove residual fumes</li> <li>• Auto waste disposal &amp; auto drain of tank water after pre programmable consecutive operations,</li> <li>• Incorporates indication of drain cycles, low level indication and high level indication,</li> <li>• Auto fill error in case of absence of inlet water in tank and the system automatically switches off with alarm. Inbuilt auto error diagnostic and safety features.</li> </ul> <p><b>C. Automatic Distillation System</b></p> <ul style="list-style-type: none"> <li>• Autosequencing Programmable Microprocessor based Distillation with inbuilt software, Colour Touch Screen high resolution TFT LCD Display, Large 4.3" screen</li> <li>• Auto Intelligent run of programmable steps, Addition of Boric Acid, Dilution, KMNO4 for Available Nitrogen, Alkali, Steam Processing, Residue Removal, Process over indication with alarm with inbuilt delay time features, Auto Titration Connectivity feature for upgradation, Aspiration of Receiver Residue.</li> <li>• Flow diagram display to show live sequencing steps at each stage of process, Facility to program and control distillate volume for determination of available nitrogen</li> <li>• Inbuilt safety features with CE Certification to fulfill requirement of Good laboratory Practice.</li> <li>• Auto sensing of "NO WATER" condition in condenser &amp; steam generator with alarm &amp; signal to alert user.</li> <li>• Auto deactivation of operation after warning on no water condition in case of user non availability</li> <li>• Enables Automatic monitoring and measuring of high temperature in distillate with sensor for auto warning signal and safety alarm to alert user to control distillate temperature.</li> <li>• Continuously measured temperature is displayed digitally.</li> <li>• Auto door open warning indication, Auto tube insert error indication. Auto deactivation of System on error diagnosis, Adjustable steam power, Auto online water saving mechanism, Auto reagent Level Sensor with Alarm for Reagents, Stainless steel non corrosive steam Generator</li> <li>• Automatic calculation of results on input of titre value in terms of percentage of Protein/N2. Data table export to excel, Inbuilt Automatic Printer for direct print out of results without connecting to PC.</li> <li>• Automatic water level monitoring &amp; Peristaltic pump for reagents addition</li> <li>• Electrical Requirement - 220 - 230V/50Hz.</li> </ul> <p>Company should have good performance track record of After Sales Service. References of users of similar equipment supplied in North East to be enclosed. Brochure with details of the equipment offered together with all technical details. The instrument shall strictly confirm to the specifications with relevant brochure. The Supplier should be ISO certified, CE Certified, The company should be reputed supplier / manufacturer and should not be blacklisted or should not have any adverse remarks in the past. Spares should be made available for minimum period of 10 years after the warranty period by the supplier for uninterrupted working of the instrument. The bidder should enclose the chental list with contact address along with Phone/Fax for reference for the quoted item.</p>
2.	Micro fine grinder/ Grinding Mill	<ul style="list-style-type: none"> <li>• Continuously operating inline grinder with a speed range of 3.000 - 6.500 rpm.</li> <li>• Circumferential speed of 24.5 m/s or more</li> </ul>



	<ul style="list-style-type: none"><li>• Feed grain size should be more than 10-15 mm</li><li>• Working surface made of stainless steel of grade 1.4308 (German standard) or CF-8 (AISI standard) (with 18-20 per cent chromium, 8-10 percent nickel; &lt;1= 0.70 percent carbon having tensile strength of &gt; 600 M Pa)</li><li>• Mill feed can be cooled in milling chamber with dry ice</li><li>• Motor rating input should be 1000 W or more</li><li>• Should be able to crushing fibrous substances such as paper and vegetation and plastic into fine powder</li><li>• The ultimate fineness of sample should be equal or less than 0.5 mm and grinded samples should pass through interchangeable sieves</li><li>• Protection class IP22 or better according to DIN</li><li>• Should include cutting-grinding head as an attachment</li><li>• Should have capacity to attach impact grinding head</li><li>• The grinding head should be easily interchangeable for cleaning with water or other suitable solvents</li><li>• Should include Sieve of 0.5 mm</li></ul>
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