



ज्वार अनुसंधान निदेशालय  
**DIRECTORATE OF SORGHUM RESEARCH**  
(भारतीय कृषि अनुसंधान परिषद/Indian Council of Agricultural Research )  
राजेन्द्रनगर, हैदराबाद/Rajendranagar, Hyderabad-500030  
Phone: 24015349, 24018651, Fax no.24016378



## **TENDER NOTICE**

No: 1-509/2011-12/ST

Date: 04/07/2011

To

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Dear Sir,

We have a requirement of the goods & services as indicated below, you are invited to submit your most competitive tender for the same (equipment-wise separate tender must be submitted). All the relevant details are given below.

1. The last date for submission of quotation by **12:30 PM** on **27-07-2011**
2. Tender will be opened **at 1:30 PM on 27-07-2011**
3. **Rs.200/-** for each item / equipment separately as tender fees
4. **EMD @2%** on the quoted price should be enclosed with the quotation, Otherwise your tender will not be considered.
5. Demand drafts drawn in favour of **ICAR Unit – DSR Account**, payable at Hyderabad.
6. The validity of your quotation must be valid for a period of 90 days.

i) Description of the goods required and the required quantity :  
As enclosed in Annexure – 1

ii) Guiding specification and other technical details :  
As enclosed in Annexure – 2

iii) Terms of delivery : delivery at site, viz. Director,  
Directorate of Sorghum Research,  
Rajendranagar, Hyderabad – 500 030.

iv) Delivery period for goods : Within **6 to 7** weeks from the date of the purchasers signing the contract.

v) Erection / installation and commissioning (if required, depending on the goods ordered) are to be completed within **7 - 10** days of delivery of the goods at site.

- vi) Terms of Inspection by the purchaser's representative at **D.S.R. Rajendranagar, Hyderabad – 500 030.**
- vii) Training of purchaser's operator(s) for operating the goods ordered, as and if necessary 2 operator(s) is / are to be trained for a period of One week at purchaser's premises / supplier's premises for successfully operating the goods purchased. The training shall be completed by **One week.** Or depending on the operation of the equipment.
- viii) Price structure :
- a) The tenderer shall quote for the complete requirement of goods & services and for the full quantity as shown against a serial number in the list of requirements in Annexure – 1. Unless otherwise specified in Annexure – 1, the tenderers are, however, free not to quote against all the serial numbers mentioned in the list of requirements ( in case there are more than one serial number in the list of requirements).
  - b) The rates and prices quoted shall be in Indian Rupees or in foreign currency for imported equipments (FOB value).
  - c) All duties, taxes and levies payable by the supplier under the contract shall be included in the quoted price. The purchaser will not pay any such duties, taxes and levies separately. “However, sales Tax, as legally and contractually, leviable will be quoted separately by indicating the nature and the current rate of sales Tax, as applicable at the time of quoting. The Sales Tax will be paid extra at actual at the time of supply, provided the transaction of sale is legally liable to sales Tax and the amount of the sales Tax is contractually payable. If the supplier in its quotation does not ask for sales Tax extra, the same shall not be paid even if it asks for the same at a later date.
  - d) The rates and prices quoted by the supplier shall remain firm and fixed during the currency of the contract and shall not be subject to variation on any account, whatsoever, including statutory variations, if any. “However, sales Tax will be paid extra as per provision under Clause viii ( C ) above”
- ix) Receipt of goods & Terms of payment:
- a) Payment term for supply of goods, including erection / installation and commissioning (as and if applicable).  
Immediately on receiving the goods at site, the purchaser will verify the quantities of the items supplied as specified in the delivery challan of the supplier and also check for any superficial damage etc., in the goods so supplied and issue a provisional receipt accordingly. If the goods supplied do not require erection / installation and commissioning at site, the purchaser, within three working days of issue of the provisional receipt, will issue acceptance certificate (of the goods) to the supplier, provided the goods supplied are acceptable in terms of the contract. However, if the goods supplied also need erection / installation and commissioning, the purchaser will issue acceptance certificate within two working days, after successful erection / installation and commissioning. The supplier will then send its invoice along with the purchase's acceptance certificates and other accompanying documents to the paying authority for payment.

The paying authority will realize the full payment to the supplier as due in terms of the contract, within seven working days of receipt of supplier's invoice, purchaser's receipt certificate and other accompanying documents, provided the same are in order.

“While claiming reimbursement for sales Tax, the supplier shall furnish the following certificate duly dated and signed, on its bill”

“Certified that the goods on which sales Tax has been charged have not been exempted under the Central Sales Tax Act or State Sales Tax Act or the rules made there under and the charges on account of sales Tax on these goods are correct under the provisions of that Act or the Rules made there under. Certified further that we are registered as dealers for the purpose of Sales Tax in the State of ..... Under registration number ..... We further confirm that the amount of Sales Tax shown in the bill against this contract is correct in terms of above provisio”

- b) Payment for training of purchaser's operator(s) if a applicable.

After release of payment to the supplier as per sub-para (a) above and after successful completion of training of the operator(s) in terms of the contract, the purchaser will immediately issue a certificate to this effect to the supplier. The supplier will thereafter send its invoice for training charges, along with the above certificate to the paying authority. The paying authority will release the payment to the supplier in terms of the contract within seven working days of receipt of supplier's invoice provided the invoice and the accompanying documents are in order.

- x) Paying Authority :             Director,  
  Directorate of Sorghum Research,  
  Rajendranagar, Hyderabad – 500 030.

- xi) Liquidated Damage Clause :

If any time during the performance of the contract, the supplier encounters conditions hindering timely delivery of the goods, the supplier shall promptly inform the purchaser in writing the fact of the delay and the likely duration of the same. After receipt of supplier's communication, the purchaser shall decide as to whether to cancel the contract for the un-supplied portion after the existing delivery period, or to extend the delivery period suitably by issuing an amendment to the contract. If the supplier fails to deliver the goods and / or perform the services within the contractual delivery period for reasons other than circumstances beyond supplier's control (which will be determined by the purchaser) and the purchaser extends the delivery period, the purchaser will also deducted from the contract price, as liquidated damages, a sum equivalent to 0.5% (half per cent) of the delivered price of the delayed goods or unperformed services for each week of delay or part thereof until actual or performance. The maximum limit of such deduction will, however, be 10% (ten per cent) of the contract price of the delayed goods or services.

Further, during such delayed period of supply and or performance, the supplier shall not be entitled to any increase in price and cost, whatsoever, on any ground. However, the purchaser shall be entitled to the benefit of any decrease in price and cost on any ground, whatsoever, of the goods & services, supplied during the period of delay.

The purchaser's letter (to the supplier, with copies endorsed to others concerned) extending the delivery period will be subject to the above condition.

xii) a) Warranty Clause : **One year from date of installation of the equipment / Item.**

b) **Performance Security** :

The successful bidder will have to pay Performance Security within 21 (twenty one) days after the issue of purchase order by the purchaser, the supplier, shall furnish performance security to the purchaser for an amount of 10% (ten per cent) of the contract value, valid up to 60 (sixty) days after the date of completion of the contractual obligations by the supplier, including the warranty obligations. However, EMD will be returned on receipt of security amount.

xiii) Dispute Resolution Mechanism

If any dispute or difference arises between the purchaser and the supplier relating to any matter connected with the contract, the parties shall make every effort to resolve the same amicably by mutual discussions. However, if the parties fail to resolve the dispute or difference by such mutual discussion within 30 days, either the purchaser or the supplier may give notice to the other party of its intend on to refer the same to arbitration. The arbitration shall commence thereafter. The arbitration shall be conducted by a sole arbitrator, who will be appointed by the Secretary, ICAR and the procedure to be followed in this respect will be as per the Indian arbitration and conciliation Act, 1996. The venue, of the arbitration shall be the place from where the contract is issued.

2. **You are also required to fulfill the following conditions and furnish the details as indicated in subsequent paragraphs.**

- a) At the time of awarding the contract, the purchaser reserves the right to increase or decrease by up to 25%, the quantity of goods & services as specified in the list of requirement, without any change in the unit price or other terms & conditions.
- b) Please furnish a certified copy of your latest ITCC (Income Tax Clearance Certificate).
- c) Please indicate if you are currently registered with any Govt. organization and if registered, furnish all relevant details.
- d) Please state whether business dealings with you presently stand banned by any Government organization and, if so, furnish relevant details.
- e) A supplier shall not submit more than one quotation for the same set of goods.

- f) The supplier shall at all times indemnify the purchaser, at no cost to the purchaser, against all third party claims of infringement of patent, trademark or industrial design rights arising from the use of the goods or any part thereof, with respect to the goods quoted by the supplier in its offer.
  - g) The tender(s) as well as the contract shall be written in English language. All correspondence and other documents pertaining to the quotation(s) and the contract, which the parties exchange, shall also be written in English.  
The tender and all correspondence and documents relating to the tender exchanged between the bidder and the purchaser may also be written in Hindi language provided that the same is accompanied by an English translation, in which case, for the purpose of interpretation of the quotation, the English translation shall govern.
  - h) Please mention your Tax Identification Number ( TIN ) along with a copy certificate of Registration.
  - i) The contract shall be governed by the laws of India and interpreted in accordance with such laws.
  - j) **The Tender / offer shall remain valid for acceptance for a period not less than 90 days after the specified date of opening of the offer.**
3. Separate Tenders for each equipment shall be submitted in sealed envelopes. The envelope shall be addressed to the Director, D.S.R. Rajendranagar, Hyderabad – 500 030. ( Purchaser ) and it should also bear the tender enquiry number and the words “DO NOT OPEN BEFORE at **1.30** PM on **27-07-2011** (\* The time and date of opening of the tenders). These envelopes should then be put inside another envelope, which will also be duly sealed. The outer envelope will bear the full address of the purchaser. The supplier must ensure that its tender (i.e quotation), duly sealed as above , reaches the purchaser at least one hour before the time and date of opening of tenders. The supplier may, at its choice, send the tender by Regd. Post or by speed post. Alternatively, the supplier may also hand deliver the tender to the purchaser in which case it has to be dropped in the tender box kept in the office. No receipt will be issued separately.
4. The tenders, which are received late i.e. after **12.30** PM on **27-07-2011** by the purchaser will be ignored. Further, the purchaser does not accept any liability and responsibility for the tenders in case the same are not properly sealed & marked and / or sent as above.
5. The tenders, which are received on time ( as per para 3 above ), will be opened at purchasers office at **1:30** PM on **27/07/2011** (date). The purchaser will open the tenders in the presence of the tenderers duly authorized representatives, who choose to attend the tender opening.
6. The purchaser will evaluate and compare the tenders which are substantially responsive i.e which are properly prepared & signed and meet the required terms, conditions, specification etc. The purchaser will award the contract to the supplier whose tender will be determined to be responsive and offering the best evaluated price.
7. Notwithstanding the above, the purchaser reserves the right to accept or reject any tender or annul the tendering process and reject all tenders at any time prior to award of the contract, without assigning any reason, whatsoever, and without incurring any liability or obligation, whatsoever, to the affected tender or tenders.

8. Please submit your tender accordingly. You shall sign all the pages of your tender. Your price tender may be furnished in the format enclosed as Annexure 3.

You are also required to return this original tender enquiry (all the pages), as it is, duly signed by you on every page, for our record. You may retain a photocopy of this tender enquiry for your record.

Encl : Annexures 1,2 & 3.

Yours faithfully,

(W.Srinivas Bhat)  
Sr. Admn. officer I/c.

**LIST OF REQUIREMENTS**

S No.	Description of Goods and allied services	Accounting Unit	Quantity
01	Electronic Precision balance	1	1
02	Electronic top load balance	1	1
03	Deep Freezer -20° C	1	1
04	UDY Grinding mill with accessories	1	1
05	Speed vac	1	1
06	Moisture Meter	1	1
07	Flash evaporator	1	1
08	Fermentor	1	1
09	Lyophilizer	1	1
10	Deep Freezer - 80° C with Stabilizer	1	1
11	Fibertech	1	1
12	Saccharimeter	1	1
13.	Tray dryer	1	1
14	Roller flaker & steam cooker	1	1
15	Drum roaster	1	1
16.	Roti making machine	1	1
17	Blender	1	1
18	Rotary oven	1	1
19	Packing machine	1	1
20	Metler balance	1	1
21	Moisture analyzer	1	1
22	Soxhlet	1	1
23	Incubator	1	1
24	Germinator	1	1
25	HPLC with accessories	1	1

**SPECIFICATIONS & OTHER TECHNICAL DETAILS  
OF THE ITEMS AND SERVICES (SHOWN IN ANNEXURE - 1)**

(If any Tenderer is having equipments of higher/latest specifications than our specifications, kindly quote for them also in the tender)

<b>S No.</b>	<b>Name of the equipment</b>	<b>Qty. (No.)</b>	<b>Detailed technical specifications</b>		
<b>01</b>	Electronic precision balance	<b>01</b>	Readability	mg	0.001
			Weighing Capacity	g	6.1
			Tare range (subtractive)	g	- 6.1
			Repeatability	<±mg	0.001
			Linearity	<±mg	0.004
			Corner load (test load [g])	mg	4 (2)
			Min. initial weight*	mg	2
			Sensitivity drift between +10 to +30°C	±ppm/K	1
			Typical stabilization time	s	< 5
			Typical measurement time	s	< 8
			External standard calibration value (min. accuracy class)	g	5 (E2)
			Display result (depending on the set filter level)		0.1 – 0.4
			Weighing pan size d	mm	30
			Weighing chamber height	mm	70
			protection	Protected against dust and water	
<b>02</b>	Electronic top load balance	<b>01</b>	Readability	mg	0.01
			Weighing Capacity	g	220
			Tare range (subtractive)	g	- 220
			Repeatability	<±mg	0...60 g: 0.015 60...220 g: 0.025
			Linearity	<±mg	0.1
			Corner load (test load [g])	mg	0.15 (100)
			Min. initial weight*	mg	20
			Sensitivity drift between +10 to +30°C	±ppm/K	1
			Typical stabilization time	s	< 2
			Typical measurement time	s	< 6
			External standard calibration value (min. accuracy class)	g	200 (E2)
			Display result (depending on the set filter level)		0.2
			Weighing pan size (W + D)	mm	85 + 85
			Weighing chamber height (draft shield DU)	mm	261
			protection	Protected against dust and water	



S No.	Name of the equipment	Qty. (No.)	Detailed technical specifications
03	Deep freezer (-20°C)	01	<p>Liters : 400 to 700 Ltrs  Input power : 700 W  Temp. Range : -10~40 °C  Voltage : 220~240V/50Hz  Temperature control : Microprocessor Control  Over temperature and Under temperature : Audible and visual alarm  Cabinet : Upright  Foam insulation urethane : High-density CFC-free  Compressor : Good quality compressor  Door Lock : 1  Shelves/Drawers/Baskets : ¾</p> <ul style="list-style-type: none"> <li>• Upright, Programmable</li> <li>• Microprocessor Controlled</li> <li>• Digital Temperature Display with LED</li> <li>• Safety alarms of both Audio/Visual for malfunctions</li> <li>• Built in Voltage Compensator</li> <li>• External voltage stabilizer</li> </ul>
04	UDY Grinding mill with Accessories (Lab mill)	01	<p><b>Operation:</b> Belt drive 1:6, 16,800 rpm  <b>Capacity:</b> 300 g in 30-50 seconds depending on moisture content  <b>Power requirement:</b> To suit all standard power supplies (specify voltage and frequency on ordering)  <b>Dimensions (H X D XW):</b> 545 X 460 X 240 mm  <b>Net weight:</b> 28 kg</p>
05	Speed vac	01	<p>Rotational vacuum concentrator (SPEED VAC)</p> <ol style="list-style-type: none"> <li>a) Device should have a digital display of cooling type or connection to cooling-traps (-50 C, to -80 C). It should allow easy connection with the freezer dryer.</li> <li>b) It should accommodate rotors capable of holding tubes with different capacities (1.5/2.2 ml and 10-15 ml).</li> <li>c) It should possess an organic solvent resistant cover.</li> </ol>

<b>S No.</b>	<b>Name of the equipment</b>	<b>Qty. (No.)</b>	<b>Detailed technical specifications</b>
<b>06</b>	Moisture meter	<b>01</b>	<p>Commodity calibration: Food Grains, Pulses, Oil seeds &amp; Vegetables Seeds etc.; Range: 3.5 to 40%; Consistency: <math>\pm 0.2\%</math>; Principle of measurement: Resistance; Temperature compensation: Automatic with PT – 100 temperature sensor; Error conditions: under range, Over range etc.; Display: 2X16 character alphanumeric LCD display.; Low Battery indication: displayed on LCD display, No display of Moisture percentage in case of low battery.; RS 232 Port: it has the facility to print Moisture% age, Temperature, Commodity name, date can be transferred to PC through RS 232 port.; Calibration check &amp; Error Correction: Provision to check the calibration as and when desired as per 5.3 clause of IS: 8824-1978 part-1. Correction of deviation from factory reading against standard reference &amp; Temperature calibration can be done in very user friendly way.; Auto Calibration: Automatic on LCD using a simply key operation. (Without opening the equipment or using a screw driver.) When reading in a Moisture meter gets disturbed with a passage of time there is a provision of checking this and correcting this to factory settings. Provision for recalibration with standard calibrator is also given; Hot keys: Hot keys for three crops which are programmable. Key pad: Membrane type keypad; Averaging: Customer can have averaging of number of readings of moisture Percentage through a key.; Recall Facility: Last reading Recall facility; Curve Programming/New Commodity Calibration: it has facility to calibrate new commodity with reference to customers own standard method.; Data Logging: It has facility to calibrate new commodity with reference to customers own standard method.; Data Logging: It has facility to record data, which includes Moisture percentage, Temp. Commodity Name, Commodity code with date &amp; time; Data storage capacity: It has memory of 200 readings; Power: 9V DC Adaptor for AC mains or 6(R-20 type) dry cells.; Size(LxBxH in cm): 30x18x19cm (Approx); Weight: 9.5 kg (APPROX).</p> <p>Measuring the electrical conductivity of seed, bearing a fixed relation with moisture content of the given material, which is measured using a superior solid state technology and displayed on the screen. Suitable for measuring moisture of seeds, With LCD display, operating on 1.5 Volt battery; Sensitivity: <math>\pm 0.5\%</math>; Temperature correction: <math>\pm 0.2 \%</math>; Dimension: 165 mm X 95 mm X 40 mm (L X W X D); Weight: 1.5 kg</p>

S No.	Name of the equipment	Qty. (No.)	Detailed technical specifications
07	Flash evaporator	01	<p>Main Unit</p> <ol style="list-style-type: none"> <li>1. Sample volume Range: 50 ml to 3000 ml</li> <li>2. Rotation Speed : 20-240 rpm</li> <li>3. Rotation Speed Display :LCD</li> <li>4. Hand/Motor lift: Motor fit</li> <li>5. Supply voltage: 230V, 50Hz</li> <li>6. Lifting stroke: 160 mm</li> <li>7. Head Tilt Angle: 0-60<sup>0</sup></li> <li>8. Motor power :40W</li> <li>9. Automatically lifting up when no electricity</li> <li>10. Dimension: 380 mmLx340mmWx692 mmH</li> </ol> <p>HB-03 plus Heating bath</p> <ol style="list-style-type: none"> <li>1. Bath Temperature Range : Ambient ~180<sup>0</sup>C</li> <li>2. Temp. control Mode: PID control &amp; LCD display</li> <li>3. Overheat cut-off protection: 190<sup>0</sup>C</li> <li>4. Temperature stability : ±1<sup>0</sup>C</li> <li>5. Bath volume: 5L</li> <li>6. Material bath: stainless steel with Teflon coating</li> <li>7. Heating power: 1300W</li> <li>8. Collection Vessel : 1000 ml</li> <li>9. Rotation flask: 1000 ml</li> <li>10. Condenser type : Vertical type and water refrigerating</li> </ol>
8	Fermentor	1	<ul style="list-style-type: none"> <li>● <b>Basic Unit with MicroDCU controller</b></li> <li>● Bench top housing, built into Basic Unit with Digital Fermenter Control-Board, Amplifiers for Temperature, pH , pO<sub>2</sub> and foam</li> <li>● Operation via PC Software</li> <li>● Stirrer drive with maintenance free motor, digital speed measurement and speed range at aeration for 1 L, 2 L and 5 L vessel with varied rpm</li> <li>● Temperature control system for temperature up to 60 °C</li> <li>● Connector for heating blanket and cooling water control valve</li> <li>● Aeration system depends on package configuration</li> <li>● Controlled gases required with three (3) configurable peristaltic pumps</li> <li>● Power supply: 230 VAC</li> </ul> <p>PC Notebook with advanced configuration for operating fermentor</p>

S No.	Name of the equipment	Qty. (No.)	Detailed technical specifications
9	Lyophilizer	1	<p>Bench Top Freeze Dryer</p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Ability to condense up to 2 liters of ice in 24 hours with an overall condenser capacity of 3 liters total.</li> <li>• Sentry 2.0 controller for monitoring critical freeze drying parameters such as condenser temperature and vacuum.</li> <li>• Refrigeration system with CFC-Free refrigerants and two temperature options of <b>-55<sup>0</sup>C &amp; -75<sup>0</sup>C</b></li> <li>• Space saving footprint</li> <li>• Manifold not included in height Average Time to 100 mtorr (0.13 mbar) is 15 Minutes.</li> <li>• Leybold 2.5E Vacuum Pump - 65 LPM - 2-stage w/gas ballast</li> <li>• 8 - Port Stainless Steel Vertical Manifold</li> <li>• Required acrylic adapter plate for Stainless Steel Manifolds</li> </ul>
10	Deep Freezer - 80° C with Stabilizer	1	<p><u>Technical Specifications</u></p> <p>Liters : 400 to 800 Ltrs  Input power : 1.63HP  Temp. Range : -50~-86 °C  Voltage : 220~240V/60Hz  Temperature control : Microprocessor Control  Over temperature and Under temperature : Audible and visual alarm  Cabinet : Upright  Foam insulation : High-density CFC-free urethane  Compressor : Good quality compressor  Door Lock : 1  Shelves/Drawers/Baskets : ¾</p> <ul style="list-style-type: none"> <li>• Upright, Programmable</li> <li>• Microprocessor Controlled</li> <li>• Digital Temperature Display with LED</li> <li>• Safety alarms of both Audio/Visual for malfunctions</li> <li>• Built in Voltage Compensator</li> </ul> <p>External voltage stabilizer</p>

S No.	Name of the equipment	Qty. (No.)	Detailed technical specifications
11	Fibertech	1	<p>Fully Automatic Fiber extraction based on Fiber Bag Technique for analysis of CF / ADF / NDF.</p> <p>Features: 12 samples simultaneous extractions, Automatic programmable addition of Acid, Alkali &amp; water for rinsing, Automatic programmable suction of waste solutions (Acid, Alkali &amp; rinsing Water); 10 program library memory. Automatic Lift mechanism. Automatic sequential operation of Acid, Rinsing, Alkali &amp; Rinsing process with programmable controller. Ceran Hotplate, Optical &amp; Acoustical error message. Possibility of performing Cold Extraction. System to be supplied with Compressor, 12 glass spacers, SS Vessel and 1000 fiber bags.</p>
12	Saccharimeter	1	<p><b>Measuring Mode:</b> °Z (°ISS), °S, Optical Rotation or User Defined Scale</p> <p><b>Measuring Range:</b> ± 225°Z</p> <p><b>Resolution:</b> 0.01°Z</p> <p><b>Reproducibility:</b> 0.02 °Z</p> <p><b>Accuracy:</b> 0.01 °Z up to 5 °Z 0.02 °Z above 5°Z</p> <p><b>Optical wavelengths:</b> 589 nm to 880 nm, std.</p> <p><b>Response Time:</b> 2.88°Z/sec. slewing rate &amp; 2 sec. nominal settling time</p> <p><b>Light Source:</b> Tungsten-halogen ^V, 20W Avg. 2,000 hr. life</p> <p><b>Sample chamber:</b> Accept sample tubes up to 200 mm</p> <p><b>Communication interface:</b> Two RS 232 Serial Ports, One Parallel Printer Port and one Auxiliary Port</p> <p><b>Calibration:</b> Automatic calibration</p> <p><b>Display:</b> Graphics LCD 320 X 240 dots cold fluorescent back lit – sign for levo rotations, Automatic Sensitivity</p> <p><b>Control:</b> Permits measurement for sample transmittance as low as 0.01% or up to O.D 4.0</p> <p><b>Compensation:</b> Temperature of the sample can be corrected to a reference temperature via keyboard, cell chamber or 31T temperature cell</p> <p>Temperature Display: Accurate ± 0.5°C Resolution 0.1 °C</p> <p><b>Calender/Clock Functions :</b> Battery-backed clock. Time and data sent to computer and printer, (latest cionfigured PC and printer to be provided along with instrument)</p> <p><b>Input power:</b> 220 V, 50/60 Hz</p>

S.No	Name of the equipment	Qty	Detailed technical Specifications
13	Tray dryer	1	Standard make of Double door with 96 aluminum trays. Heat Load : 15 KW, 2 HP motor, Suitable to Dry Pasta/vermicelli with Automatic Temperature Controller. Inner Side G.I Outer Side CRCA.
14	Roller flaker & steam cooker	1	Standard make of flaking through rollers capacity 100-150 kg/hr, with steam cooker capacity 300 kg/batch for partial cooking before flaking, power 3 HP easy to operate.
15	Drum roaster	1	Capacity 50-100 kg/hr for roast sorghum grain, drum type made with SS fitted with electronic variable speed geared motor, automatic and motorized arrangements for tilting of facilitate feeding and discharge of the material, temperature range from ambient to 300 C, with digital controller (Standard make).
16	Roti making machine	1	Standard make of semi automatic hydraulic Chapathi Pressing machine, chapathi Machine - 500 Nos / hr. Machine 4 Hp Motor (Power Pack) & 40Kg Dough Kneader with 2 Hp motor is used Heaters - 7 , 9.5 HP
17	Blender	1	Standard make of ribbon blender, Mixer capacity ranging from 50 to 150 kg/batch. It should be available in GMP Model, with stainless steel and control panel to operate easily, power 0.5 or 3 HP.
18	Rotary oven	1	Standard make of double-layer tempered glass door.S.S and with the removable furnace With hot air circulation and rotary trolley with 32 trays, product should be baked evenly. Operation with electrically as well as diesel and LPG.
19	Packing machine	1	Standard make of nitrogen flushing machine. Production speed: 20 to 1030 Pouches /min, Pouch Dimension: Length: 75mm to 300mm. Width: 75mm to 280mm, Compressed Air Required: 10 CFM @ 6 Bar Power Supply: 220 V AC, Single Phase, 50 Hz, 2.5 KW Speed depends on: Size of the pouch, Degree of vacuum required, Packing material laminated and PPE. Horizontal nitrogen filling.

## Analytical equipments

S.No	Name of the equipment	Qty	Specifications
20	Metler balance		Readability 0.1mg, massing range 0-205 g, tare range 0-205g, Reproducibility (standard deviation) 0.1 mg, linearity +-3 mg, linearity relative to 10g +-0.1mg, Stabilization time (typically) 5 sec, Integration time (adjustable) 1.5/3/6 sec
21	Moisture analyzer		Fast halogen element provides uniform infrared heating up to 200 C, superior analytical performance with readability of 0.001g to 0.01g and capacity 45 g, software for ease of operation for rapid results.
22	Soxhlet		Temperature Range: 35°C Ambient to 300°C, Temperature Controller: Microprocessor based PID Controller with Auto tuning facility. Temperature Setting: Feather touch membrane keys, Fully Automatic PC Compatible System, Direct USB Port for PC/Laptop connectivity, Two line bright digital LCD Display Auto sequential extraction with auto phase change over of boiling, condensation, rinsing and recovery phases Auto alarm for recovery phase Auto switch at end of extraction procedure Automatic collection of recovered solvent, Extraction Beakers (6 Nos.)
23	Incubator		Double walled in construction, model of quality stainless steel and exterior should have a finish of non-corrosive paint, walls suitably insulated on all sides including the door frame, temperature range from 0-50degree centigrade, capacity 240 liters or more, three interval shelves, temperature range 5-60C, temperature uniformity +-C, capacity 580x510x970mm, suitable voltage stabilizer power 220 volts/60hz, one year warranty from the date of installation.
24	Germinator		Capacity: 10 cu ft; chamber size 540 x 895 x 488mm; inside chamber SS grade 304 of 27SWG; outside chamber: mild steel of 20 SWG; display 2x16 characters LCD display with backlit, light levels off 25%, 50%, 75%, 100% light 2.5-8 tubes, no of trays 8 adjustable aluminum trays with lighting arrangements on both sides. Tray size 475 mm x 475 mm, germination area 1.8m <sup>2</sup> , humidity: natural humidity with water inside, humidity sensor, non condensing type, temperature: PID control 5oC-45oC, temperature sensor PT 100; compressor: hermetically sealed type of standard make

25.

SUPPLY, DELIVERY, INSTALLATION OF 1 UNIT OF  
HIGH PERFORMANCE LIQUID CHROMATOGRAPH SYSTEM (HPLC)

1. Solvent Delivery System for Micro, Analytical, Semi-Prep flow rates ----- 2 No's

- High Pressure 2no's Independent pumps.
- The flow rate should be set between 0.001 to 10 ml/min from micro to semi-preparative flow rates for each pump with a total flow of 20ml/min under Binary mode
- Flow rate accuracy should be  $\pm 1\%$
- Flow rate precision should be less than  $\pm 0.1\%$  RSD
- Pressure setting range should be 1-40 MPa
- It should have up-to 20 storage files
- Maintenance kit & Automatic Rinsing kit must be supplied
- It must have a leak sensor as safety feature
- It should have functions for maintenance and validation which are accessible by a dedicated operation button

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2. Dynamic Gradient Mixer - 1 no.

- Mixing volume changeable in 3 steps
- Suitable for Analytical & Semi-preparative mixing volumes
- Dynamic mixing

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3. PDA detector - 1 no's

- Wavelength range: 190 - 800nm.
- Sensitivity should be equal to or better than:  $0.3 \times 10^{-5}$  au
- Drift:  $< 5 \times 10^{-4}$
- Built in temperature controlled flow cell.
- PDA should have optimized bandwidth 1.2nm & 8nm for high resolution and high sensitivity simultaneously.
- Built in mercury lamp for auto validation

4. Refractive index (RI) Detector

1 No.

- Refractive Index Range -1 to 1.75RIU
- Noise Level  $-2.5 \times 10^{-9}$  RIU max
- Drift  $-1 \times 10^{-7}$  RIU/hour max
- Max operating Flow rate -20ml/min (150ml/min with option)
- Temperature control of cell unit  $-30^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  ( $1^{\circ}\text{C}$  step)
- Cell volume  $-9 \mu\text{L}$
- Operating Temperature range  $-4^{\circ}\text{C}$  to  $35^{\circ}\text{C}$
- Response -0.05 to 10 sec, 10 steps
- Zero adjustment -Auto zero, auto optical zero, fine zero
- Cell pressure -2 MPA (approx.20kg f/cm<sup>2</sup>;cell unit)
- Power Requirements -AC 110V, 230 V, 150KVA, 50/60 HZ.



## 5. Online Degasser

1No.

- No.of degassed solvents -3
- Degassed flow line capacity - 380ul
- Operating Temp. range - 4 deg C to 35 deg C

## 6. Column Oven

1No

- Type - Block heating type
- Temp.Setting range -4 deg C to 80 deg C 1Deg C step
- Temp. control Precision -+\_1deg C
- Temp Control range - (Ambient temp -15 deg C) Ambient Temp to 60 deg C
- Temp control mechanism -pre- heating 10ul X 2channel
- Columns accommodable -25cm (2 columns Max)
- Time program -Temp. Setting changes, Oven ON/OFF  
320 steps, 01-999.9 min
- Ambient Temp range - 4-35 deg C

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## 7. Manual Injector with auto trigger - 1Set

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- **Rheodyne injector model 7725i with auto trigger and 20ul loop**
- **Injector mounting plate**
- **Micro Syringe 25ul**

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## 8. System Controller along with 21 CFR Part 11 Compliance Chromatography software --

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- Central control of pumps, detectors, auto-injectors. Oven & complete modules of each System through software.
- Software under WINDOWS XP platform on 32 bit technology
- Digital acquisition & processing system ensures speed & stability of data
- Single access point for system administration, data acquisition, post run analysis and long -term data management.
- Instrument should provide 21 CFR part 11 compliance for electronic signatures and record security

## 9. Reservoir Tray:

- Tray to place Mobile phase bottles

## 10. Columns:

- Columns suitable for the Analysis of Phenolic acids, Mycotoxins, Sugars, Antioxidants and Alkaloids

- **11. Branded PC, Printer**

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- For operation of the HPLC system, PC and printer are required

- **A. PC:**

- Processor : Intel Core i3-530
- Hard Disk : 500 GB
- RAM : 4 GB DDR3 SD and 1GB DIMMs.
- power supply : 250W
- Software : Windows XP Professional
- Dimension : 14.9 x 4.2 x 17.01 inches.

- **B. Printer:**

- Brand : color printer with xerox and scanner (Advanced model)

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- **12. Suitable UPS with 30 minutes Battery back-up --- 1 No**

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- **13. Accessories**

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- **Sample & Solvent filtration assembly with Aqueous & Organic Membranes (100 no. each) along with**
  - **Vacuum Pump for filtration & degassing of mobile phase & sample., Bath Sonicator**

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- **14. Others**

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- The supplier must provide training for the users of the instruments at site.
- The supplier must demonstrate that it has a proven appropriate set-up and capability to provide after-sales service efficiently and effectively.
- Software upgrades like version ups, if any, should be done without any cost.
- All modules must be GLP compliant
- A declaration of System Validation certificate must be provided

- **Optional**

- **15. Auto Sampler**

- **1 No.**

- Loop Injection Method - Total volume sample injection and variable Injection volume
- Injection volume setting range - 0.1 ul to 100ul (standard)
- Number of processed samples -175 (1ml Vials),105 (1.5ml vial),50 (4ml Vail)
- Injection volume accuracy - 1% max
- Injection volume precision -RSD :0.3 % max
- Cross contamination - 0.005 % max (Naphthalene,chlorhexidine)
- Number of repeated injections - 30 Max. per sample
- Needle rinsing -Set freely before and after sample injection
- Operating pH range - pH1 to pH14
- Operating Temperature range - 4deg C to 35 deg C
- Power requirements -AC110V,230V,50/60HZ

**16. UV/Vis detector**

**- 1 no's**

- Wavelength range: 190 - 700nm.
- **Built in temperature controlled flow cell.**
- Accuracy: +\_1 nm max
- Precision :0.1 nm max
- Noise :  $0.25 \times 10^{-5}$  AU

FORMAT OF TENDER PRICE

Serial No.	Description of goods & allied services	Specifications	Accounting unit	Qty	Quoted unit Price in Rs.		Total amount in Rs.
					In Figures	In words	

Grand Total Cost Rs.

We agree to supply the above goods & allied services. We confirm that the same will meet the description, specification and other technical details as required in the tender enquiry.

“ Details of applicable Sales Tax to be paid extra and the current rate of the same:

We confirm, that we agree to all other terms & conditions of your tender enquiry including the terms of delivery, period of delivery and warranty provision.

We have furnished all the information, as required in the tender enquiry and attached the relevant documents.

(In case a tenderer desires to put some additional / modified stipulations, terms & conditions etc. the same may be clearly indicated).

We confirm that our offer will remain valid for acceptance for **90** days after the date of opening of tenders.

.....

(Signature, name and designation of the authorized executive of the tendering firm)

For and on behalf of .....  
(Name and address of the tendering firm)

.....  
(Seal of the tendering firm)

Date :

Place: