



# ICAR- INDIAN INSTITUTE OF SPICES RESEARCH (Indian Council of Agricultural Research)

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**Note: All the communications must be addressed to the Administrative Officer by designation, Indian Institute Of Spices Research, Marikunnu P O, Kozhikode – 673012, Kerala ( The tender document is also being uploaded on the IISR website [www.spices.res.in](http://www.spices.res.in) and the other prospective bidders can make use of the document down loaded from the website)**

**No. F.4/266/Plan/20015-16/Stores**

**Dated: 10-9-2015**

## **TENDER NOTICE**

Sealed tender(s) **under two bid system** (i) Technical bids (ii) financial bids are invited by the Director ICAR-Indian Institute of Spices Research Kozhikode – 673012, from reputed Manufactures / Dealers for supply and installation of scientific equipment(s) / items (s) as below:

Sl.No.	Name of equipment(s)	Quantity	Amount of EMD
1	Chlorophyll Fluorescence meter	1 No.	2% of estimated value of the equipment
2	Laboratory incubator Shaker	1 No.	
3	Hot air oven	1 No.	
4	Horizontal Cylindrical High Pressure Sterilizer- Manual Operation ( Auto calve)	1 No.	
5	Laminar Airflow-Horizontal	1 Nos.	
6	Water Bath	2 No.	
7	Stereo microscope with photomicrography	1 No.	
8	PCR Machine with Gel Documentation and Electrophoresis Unit	1 No.	
9	Manual capsule filling machine with attachment	1 No.	
10	Solar Cooker Assembly	1 No.	
11	Spectrophotometer	1 No.	
12.	2 and 1.5 Ton Air conditioners (Split) with stabilizer	2 Nos.	
13.	Micro Pipettes	6 Nos.	

Tender form, detailed specification of the equipment, other terms and conditions of procurement etc. are available at our website: [www.spices.res.in](http://www.spices.res.in) or [www.eprocure.gov.in](http://www.eprocure.gov.in). The tender document must reach to this office on or before **30-9-2015 (3.00 PM)** along with non-refundable processing fee (Rs.200/-) and EMD (2 %) of estimated value of the equipment in the form of demand draft drawn in favour of ICAR Unit: IISR, Calicut. Technical bid will be open on the same day at 4.00 (PM) If there is an holiday on the date the same will be extended to next working day.

**-Sd-**

**Administrative officer**

## **SPECIFICATIONS OF THE LABORATORY EQUIPMENTS REQUIRED FOR IISR, CALICUT**

### **1. Chlorophyll Fluorescence meter – 1 No.**

- Should provide FV/Fm, Fm, Fo, and fluorescence Yield (or  $\Delta F/Fm'$ ), F & Fm')
- Should be suitable for light adapted as well as dark adapted measurements
- Should be able to measure PAR and leaf temperature
- Should have a fiber optic probe
- Should be compatible for simultaneous photosynthesis measurements (Optional)
- Battery charge should remain at least for 10-12 hrs.
- Should provide extra battery
- Should provide a minimum of 1 GB memory
- USB interface for Data transfer and software updates
- Should have at least 3 years warranty

### **2. Laboratory incubator Shaker**

Universal Platform: Flexible Polypropylene Rubber Clamps with inner metallic cup with interchangeable clamps to accommodate 250ml x 25 flasks or 100 ml x 36 flasks or 500ml x 16 flasks or 1 Litre x 9 flasks and 2 Litres x 4 flasks Capacity

- Standard Tray Size: 420 x 420 mm
- Shaking Frequency : 50 to 300 rpm (Continuously variable)
- Display of RPM : Digital
- Shaking Accuracy : +/- 2% of set value
- Temperature Range: 5°C above ambient to 65°C
- Heater Power : 1000 W
- Temperature Accuracy: +/- 0.5°C ,
- Temperature Indication: Digital
- Uniform Temperature in Cabinet:
- Diameter of Orbital motion: 25 mm
- Illumination: Incorporates Fluorescent & UV Lamps

- Digital Timer :
- Timer Setting : Programmable Feather touch keys
- Includes: Flexible Polypropylene Rubber Clamps (500 ml) reinforced with inner metallic cup for sturdy & rugged use for intact grip to perfectly hold the flask (16 Nos)
- The Equipment should be manufactured as per IS and certification Mark (ISO & CE certificate).
- Warranty – 3 years

### **3. Hot air oven – 1 No.**

- Hot air oven capacity 225 L, with inner dimensions 60x 60x60 cm.
- Bottom heated, with digital temp. controller cum indicator & Air circulation fan;
- Three adjustable and removable SS shelves with glass wool insulation,
- Temperature range ambient to 200°C  $\pm$  5°C with an air circulation fan.
- Stainless steel inner and outer body with Insulation with 65mm. thick Glass wool.
- The Equipment should be manufactured as per IS and certification Mark (ISO & CE certificate).
- Warranty – 3 years

### **4. Horizontal Cylindrical High Pressure Sterilizer- Manual Operation ( Auto calve)**

- Capacity: 145 Litres
- Chamber Size: 400 dia x 1100mm depth.
- Temperature of 121oC
- Operating pressure: 1.2kg/cm sq
- Door plate : S.S 316.
- Shooting bolts, Steam generator : S.S 304.
- Stand : steel dully painted.
- Electrical operation on 400/440 volts, 3 phase, AC supply,
- Electrical Load : 9 KW
- Chamber, back plate and end ring : S.S 316.
- The jacket should be of B.Q. steel.
- The jacket should be insulated with glass wool and covered with S.S 304.
- The sterilizer should be provided with pressure locking type safety hinged door with silicon gasket.

- The Unit should be provided with multi port operating valve consisting of 5 positions- off/slow exhaust , vaccum dry , sterilization and fast exhaust .
- The sterilizer should be provided with all safety features like safety valve ,vaccum breaker , self Sterilizing vacuum dryer , pressure switch, gauges ,contactor, water level sensor .
- The Sterilizer should be manufactured as per IS and certification Mark (ISO & CE certificate).
- Warranty: 3 year

## **5. Laminar Airflow-Horizontal – 1 No.**

- Laminar Cabinets Inner Chamber & Outer Chamber made of stainless steel high efficiency particular air filters, to achieve the air purification upto 0.3 Microns in working area.
- Working area of Laminar airflow cabinets illuminated by fluorescent light; cabinets operated at 230V. Single Phase 50Hz. AC Supply.
- Dimensions of Working area 4 ft (L) x 2 ft (W) x 2 ft (H)
- Pre-filters made of high grade nylon net fixed in S.S. frame for first Stage air purification, through blower system.
- Closed Inner Chamber fitted with HEPA having very accurate performance rate of air filtration, rated 99.99%, The filter should filter all air borne molecules of particle size up to 0.3 micron in the working Area of air flow cabinet.
- Blower fitted with ¼ HP Motor, with RPM 1200 to 1400.
- The cabinet should be fitted with UV Germicidal lamp for sterilization.
- Front door :- Acrylic , sliding type
- Fitted with Manometer for Measurement of HEPA Filters Choking system.
- Facility to provide Gas Connection.
- Warranty: 3 years
- The Equipment should be manufactured as per IS and certification Mark (ISO & CE certificate).

## **6. Water Bath - 2 Nos.**

- Volume Capacity : 20.0 L
- Temp Range : 10-100 0C
- Temp. stability :  $\pm 0.05^{\circ}\text{C}/0.09^{\circ}\text{F}$
- Dimensions Bath opening depth : 290mm X 214mmX 200mm (W X L X D)
- Overall dimension : 380mm x 560mm x 825mm (W X L X H)
- Microprocessor PID control / automatic tuning / calibration.
- Digital timer for delayed ON / OFF. (from 1 min to 99 hr 59 min)

- Protection against over-temperature and low fluid level.
- Convenient memory function of up to three frequently used temperature settings.
- Digital LED display. (0.1°C resolution)
- Splash-proof keypad.
- Warranty: 3 year
- The Equipment should be manufactured as per IS and certification Mark (ISO & CE certificate).

## **7. Stereo microscope with photomicrography - 1 No.**

Apochromatic high resolution trinocular stereo zoom microscope

- Transmitted and incident light applications
- High ratio continuous zoom
- Ocular Eyepiece 10x/22-23 with minimum 160× higher magnification
- High resolution Apochromatic 1 x Objective
- Compact LED ring illumination
- Spotlight illumination with gooseneck
- Stage plate-black/white and transparent
- Trinocular for splitting light to photography with compatible high definition digital camera
- Digital camera with high definition live image recording of 1920x1080p, able to record in jpeg format of at least 5 mega pixels and also in video format.
- Camera control manually and computer aided.
- Image/video recording directly to computer or memory card with suitable software for 32/64 bit windows (XP/win7/Win8) and Mac OS with provision for future up gradation.
- C-mount adapter.
- Direct versatile measurement facility for live images as well for acquired images.
- Supported with a branded PC with I5 Processor, 4GB Ram, 19"LED Square Monitor, 1GB Graphics card, key board, mouse, UPS
- Dust cover for microscope.
- Graticule (optional)
- Camera lucida (optional)
- Illumination by LED ring light with dome (optional)

## **8. PCR Machine with Gel Documentation and Electrophoresis Unit – 1 No.**

96 well format, silver block or gold plated silver block for 96x0.2ml reaction tubes (preferably universal).

- Sample volume range: 5-100µl range
- Block temperature range: 4°C to 99°C and above
- Capable of testing various temperatures from 30-99°C
- Temperature accuracy:  $\pm 0.2^{\circ}\text{C}$
- Temperature uniformity:  $\pm 0.3$  to  $\pm 0.5^{\circ}\text{C}$
- Temperature calibration of the block as per international standards.
- Calibration will be required every year.
- Peltier based PCR system with evaporation control
- Fast heating and cooling rates with average heating/cooling rate: approx.  $5^{\circ}\text{C}/\text{sec}$
- Lid temperature range 37-110°C
- Auto restart facility
- Internal memory storage of at least 100 complete PCR methods should be available.
- Should have programmed methods for hot start PCR, cycle sequencing, long PCR, touchdown PCR.
- Power  $220 \pm 10$  volt; 50-60Hz
- 2 KVA off-line UPS (Suiting the machine)
- Gel documentation unit and mini submarine horizontal gel electrophoresis system with power pack having user selectable DC output
- The machine should be duly certified/authorized for PCR process and the OEM / vendor should attach the certificate for the same.
- Warranty: 3 years
- After sales, service and support should be available.

## **9. Manual capsule filling machine with attachment – 1 No.**

- Manual Capsule filling machine with attachment -1
- 600 x 400 x 450 (l x w x h)
- Wt: 78 kg (approx)
- Output: 9000 capsules/ hour
- Attachment: Loading machine: 750 x 450 x 870 (l x w x h)
- with speed of one loading tray in 30 seconds

## 10. Solar Cooker Assembly – 1 No.

**Solar cooker with fully automatically tracked solar collectors to cook 50 kg of fresh turmeric per batch in 20-30 minutes.**

### i. Cooking vessel details

Capacity of the vessel	: 50 kg of fresh turmeric/ batch
Cooking time	: 20-30 min
Material of construction	: SS304
Other requirements	: The vessel to be insulated with air jacket to save heat energy without disturbing the curing process

### ii. About Solar Collector

Collector	: Parabolic trough enclosed collector with mirror area of 2.5 square meter and aperture area of 2.09 square meter.
No of Collectors	: 16 modules (4 x 4) with 32 square meter of aperture area
Focal distance	: 280 mm
Concentration ratio	: 10 sun
Acceptance angle	: 15° to 4 °

### Receiver Parameters

Absorptive surface	: Black chrome (91% and 9% absorption & emissivity) Air jacket receiver
Diameter of absorber tube	: 33.7 mm

### Mirror & Support Structure

Structural backing	: Closed sections CRW IS 4923
Reflective surface	: Anodised Aluminium
Solar weighted reflected	: 90% of specular reflectivity

### Tracker Controller

Controller communication	: GPS& Micro controller based single axis tracking
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### Performance

Thermal efficiency	: about 63% at 100 °C
Optical efficiency	: > 75%

Steam generation specification	: 50 kg dry saturated steam per hour (150°C / 3.5 bar saturated steam)
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Maximum working temperature with heat transfer fluid: 175°C

**Other requirements:** Water holding tank, required pipes for conveying water and steam, alternate electrical back up and other the other accessories required for complete installation of the plant in working condition. **MNRE subsidy (if any) may be indicated.**

### **11. Spectrophotometer – 1 No.**

- PC based double beam UV-VIS Spectrophotometer (190 nm-1000nm 0.5 to 6.0 nm adjustable B/W) with operating software, Warranty: 3 years, The Equipment should be manufactured as per IS and certification Mark (ISO & CE certificate) Installation and service facility at KVK, IISR, Peruvannamuzhi Kozhikode.

### **12. Air conditioners (Split) 2 Ton with stabilizer - 2 Nos.**

- 2 ton air conditioner (split) with stabilizer including installation charges. Minimum of 3 star rated; 100% copper tubing. Air director control, auto off timer, auto on timer, economic sleep mode, dry mode, auto fan speed, auto swing, self clean, auto restart LED display, temperature display on/off. with remote control.

### **13. Air conditioners (Split) 1.5 with stabilizer- 2 Nos.**

- 2 Ton air conditioner (Window) with stabilizer including installation charges. Minimum of 3 star rated; 100% copper tubing, auto off timer, auto on timer, economic sleep mode, dry mode, Selectable Fan Speeds, Turbo Mode, auto swing, auto restart LED display, temperature display on/off, with Remote control.

### **14. Micro Pipettes – 1 each**

- Pipette volumes (0.1–2.5  $\mu$ L; 0.5–10  $\mu$ L; 10–100  $\mu$ L; 20–200  $\mu$ L; 100–1 000  $\mu$ L; 0.5–5 mL) – one each with suitable accessories
- High precision and accurate single channel variable volume micro-pipette
- Fully autoclavable
- Color coded and volume labeled for quick identification of the volume size/tip size
- Ergonomic design with single-button operation
- 4-digit display for exact volume setting with volume lock
- Movable parts and external edges made from stainless steel with spring loaded tip cone
- Internal RFID technology

## **I. GENERAL TERMS AND CONDITIONS**

- 1. Submission of Tender/quotations: (TWO BID SYSTEM)** Tenders/quotations for technical and financial aspects should be furnished separately in closed envelopes superscribing as **technical bid for supply of ..... (Equipments name)** and **financial bid for supply of ..... (Equipments name)** in the prescribed format enclosed. Both the technical and financial bids envelopes may be put in one envelop and name of item may be written on the outer cover also for each equipment/item. **Quotation for each item to be furnished separately.**
- 2.** Last date and time of receipt of quotation is on **30-9-2015 (3.00 pm)**. Quotations received after the due date will not be accepted.
- 3. Processing fee-** Processing fee **Rs. 200/-** should be furnished in the form of DD drawn in favour of ICAR Unit IISR, Calicut along with **Technical bid** which is **non refundable**. Quotation without processing fee will be rejected.
- 4.** Detailed specifications such as make and other distinguishing marks with respect to the standard/quality of the item(s) wherever necessary should be indicated in the quotation.
- 5.** If the article(s) is/are taxable the rate of tax should be indicated separately, otherwise it would be treated as non taxable item.
- 6.** The rate should be FOR destination (**Indian Institute of Spices Research, Marikunnu P.O, Calicut 673 012**) and should include all charges such as packing, forwarding, loading/unloading. The insurance charges, if any, are to be borne by the suppliers.
- 7.** The quotation should be kept valid for a minimum period of **Six months** from the date of closing
- 8. EMD: (2% of estimated value of the equipment) Must be furnished** in the form of Demand Draft/Fixed Deposit Receipt/ Bank Guarantee in favour of Director, IISR payable at Calicut. No other form of deposit will be accepted. There will be no exemption for paying earnest money. However, Firms registered with the Central Purchase Organization/NSIC only are exempted from submitting bids without EMD (**proof of registration must be attached there for without which it will not be considered**). In case, if any tenderer fails to deposit the Earned Money the tender will be rejected straightway.
- 9. Performance Security:** The successful bidder will have to submit Performance Security as demanded by the Institute (normally 5% value of the item) in the form of Demand Draft/ Fixed Deposit Receipt/ Bank Guarantee in favour of the Director, IISR within 15 days from

the date of issue of supply order. The security will remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligation. The performance security will be forfeited and credited to the institute account in the event of breach of contract by the supplier in terms of the contract. Performance security will be refunded on demand to the supplier without any interest, what so ever after it duly performance and completes the contract in all respect but not later than 60 days of completion of all such obligations under the contract.

#### **10. Mode of Payment:**

- a. **FOR INDIGENOUS SUPPLIES:** - Payment will be made on line to the firm/party on receipt of the articles in satisfactory condition, installation or commissioning , performance of the equipment and after certification by Scientists concerned.

**Advance payment is not permitted.**

- b. **FOR IMPORTS:** - The payment shall be made through irrevocable Letter of Credit (L.C.). L. C will be opened on 100% value of the equipment/item on FOB value and 90% shall be released on presentation of complete and clear shipping documents. Rest 10% will be released only after satisfactory installation and commissioning of the equipment. This will not include commission to the Indian Agent. Payment to the Indian agent will strictly be made in Indian Rupees after satisfactorily commissioning of equipments. All bank charges outside India will be borne by the supplier. In case the delivery date of the contract is extended to take care of delay in supply, for which the supplier is responsible, the tenure of the letter of credit so extended, the expense incurred therefore such extension is to be borne by the supplier.

- 11. Guarantee/Warranty:** The equipments supplied should have guaranteed for minimum period of **three years**. Warranty Terms period will start from the date of installation of items. In case at installation stores/part of stores are found defective /damaged during or after delivery, the suppliers will replace or repair the store under warranty at consignee's location in India, free of cost, or if any case it is required to sent back to the foreign manufacturer Bank Guarantee equivalent to the cost of equipment is required to be submitted before lifting the equipment. All expenses in this regard will be borne by the supplier.

#### **12. Liquidated Damage clause:**

0.5% (half percent) of the contract price of the delayed goods for each week of delay, up to maximum 10% of the purchase of the delayed goods.

**13.** The Director reserves the right to accept or reject any or all the quotations without assigning any reason.

**14. Late /Delayed tenders** shall not be considered.

**Additional Terms and condition for imported items.**

- a. **Shipment** -- By air to Cochin ( Kerala, India ) partial shipment prohibited, Transshipment allowed.
- b. **Insurance** – Will be arranged by this Institute.
- c. **Air freight** – Will be paid by this Institute in Indian rupee.
- d. **Agency Commission** – Agency Commission will be paid in Indian rupees only to the local agent after receipt of the items. Percentage and amount of agency commission should be indicated clearly and shown deducted in the invoice.
- e. Quotation may be given on **FOB basis**.

**TECHNICAL COMPLIANCE STATEMENT**

To: The Director,  
Indian Institute of Spices Research,  
Marikunnu, P.O,  
Calicut- 673 012.

Sir,

I/We have pleasure in furnishing our quotation along with technical specifications for supply of following equipments/stores intended by you. I/We agree to the terms and conditions of supply given in the tender form. The rates quoted are for supply of items at site: **INDIAN INSTITUTE OF SPICES RESEARCH, MARIKUNNU P.O., CALICUT.**

**Processing Fee Rs. 200/- (DD No..... dated ..... ) and EMD 2 % of estimated value of the equipment Rs..... (DD No.....dated.....) are enclosed .**

**Name of Equipment : Equipment Name**

<b>SL No.</b>	<b>Technical Specifications as per Tender documents</b>	<b>Specification offered</b>
1.		

Mark **(yes)** if specification offered is as per tender or better, if not specify the specify the specification offered. An item by item commentary on the purchaser's Technical Specification demonstrating substantial responsiveness of the goods and services of those specification or a statement of deviations and exceptions to the provision of the Technical Specifications. ( **Technical literature/brochures/manuals should be attached along with this format**)

**Please note:**

Compliance/Deviation statement comparing the specification of the quoted model to be required specifications. This statement should also give the last page of technical literature where the relevant specification is mentioned. Bid must have supporting documents (technical) literature of copies of relevant pages from the service manual or factory test (data) for the points noted above, failure regarding which may result in **rejection of bid**.

**SIGNATURE WITH STAMP OF THE BIDDERS**

**FINANCIAL BID**

From:

To: The Director,  
Indian Institute of Spices Research,  
Marikunnu P.O.,  
Calicut- 673012.

Sir,

I/We have pleasure in furnishing our competitive rates and terms for supply of the following equipments/stores intended by you. I/we agree to the terms and conditions of supply given in the tender form.

Sl No.	Category No. /ID NO.	Cost/Unit	Amount (Rs.)
			Rs. -----
	Agency Commission ( _____ %)		Rs. -----
	Installation charges/other charges if any		Rs. -----
	TOTAL		Rs. -----
	Year wise AMC charges (rate for 1 year/2years/3year/s4 years/5years to indicated)		Rs. -----

Yours faithfully,

**Signature of the authorized officer.****N.B.**

1. FOR IISR, Calicut rate in respect of Indian items to be furnished.
2. Indicate special discounts, taxes payable extra and any other condition deserving.
3. Cost in foreign currency and Indian rupees are to be indicated clearly. In case you offer for both the Indian and Foreign item please furnish the same separately.
4. If DGS&D rates are available quote that also.

**PERFORMANCE STATEMENT FOR LAST 3 YEARS**

Sl.No.	Name of the items	Name of the office by whom order was placed	Order No. & date (Please enclose copy of supply orders)	Value of supply order	Delivered in time or not	If not please specify the reason	Attach satisfactory working report from each office (Yes/No)

**Signature of Tenderer with office seal**