



KERALA AGRICULTURAL UNIVERSITY  
Cocoa Research Centre  
Vellanikkara, Thrissur - 680 656.

No.CRC/CCRP-11/20-21

Date: 30.01.2021

**TENDER NOTICE**

Sealed competitive tenders are invited for the supply of equipments  
(Specification attached)

Sl. No.	Equipment	Cost of tender form (Rs.)
1	Ultra low temperature freezer (vertical type)	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable
2	Vertical laminar air flow system without biosafety:	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable
3	Vertical laminar air flow system with biosafety	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable
4	Portable Chlorophyll meter	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable
5	Horizontal electrophoresis system (mini & wide mini types) with power supply	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable
6	Water purification system for molecular biology work	0.2% of the cost of tender rounded to the nearest multiple of 100, subject to a minimum of 400/- and maximum 1500/- + GST as applicable

Tender forms can be down loaded from KAU website ([www.kau.edu/tenders](http://www.kau.edu/tenders)). On submitting the tender form, the cost of the tender form as mentioned above may be drawn by DD in favour of **“The Professor and Head, Cocoa Research Centre, Vellanikkara, KAU P.O, Thrissur - 680 656”** payable at **State Bank of India, KAU branch, Vellanikkara, Thrissur** should be enclosed.

EMD @ 1% of the quoted amount should be as separate DD drawn at the same address along with an agreement executed in Kerala stamp paper worth Rs100/- should be enclosed with the tender. The name of the equipment for which the rate is quoted, notification number and date of opening of tender should be written on the top of the envelope. Sealed tenders addressed to **“The Professor and Head, Cocoa Research Centre, Vellanikkara, KAU P.O, Thrissur - 680 656”** should reach this office on or before 2.00 pm on 15/02/2021 (Saturday) and will be opened at 3.00 pm on the same day in the presence of such of the tenderers or their authorized representatives. The tenders received after the stipulated date and time will not be accepted in any circumstances.

All terms and conditions prescribed for Government tenders as amended from time to time are applicable in this case also. The under signed has the right to accept or reject any or all tenders without assigning any reason thereof.

Further details can be had from the under signed during the office hours between 10.00 am and 5.00 pm (9746718755) and also through KAU web site.

**Terms and conditions:**

- \* All equipments should have a minimum of two year of manufacturer warranty and three year of AMC from the date of complete installation and not from the date of delivery.
- \* Items should be delivered to “Cocoa Research Centre, KAU, Vellanikkara, Thrissur - 680 656”
- \* The products should be internationally branded and CE certified.
- \* The firms or companies quoting the price should have service personals or centers or service support based in Kerala should have quote from manufacturer for the quoted model and the supporting document should be submitted.
- \* The firms or companies quoting the price should submit the brochure for the model from the manufacturer including web link and the country of origin of the equipments.
- \* The price quoted should be inclusive of all taxes, costs for clearance, transportations, loading and unloading etc.
- \* On receipt of purchase order from this office, the tenderer should execute another agreement in Kerala Stamp Paper worth Rs.100/- (Rupees one hundred only) and furnish a security deposit of 5% of the cost of the equipment quoted in the form of term deposit/ bank guarantee / demand draft drawn in favour of “The Professor and Head, Cocoa Research Centre, Vellanikkara, KAU P.O, Thrissur - 680 656” payable at the State Bank of India, Vellanikkara, Thrissur, KAU branch. The format of the agreement can be downloaded from the above website given in item 1. Firms who are exempted from payment of EMD should furnish copy of the currently valid certificate from the Store Purchase Department, Govt. of Kerala
- \* All Taxes, duty, freight etc. as applicable may be specified in the tender.
- \* Rates quoted should be valid for a minimum period of 180 days from the date of opening the tender.
- \* Users list of the equipments are to be enclosed while submitting the tender
- \* Delivery: Within **two weeks** from the date of receipt of purchase order.
- \* The equipment should be delivered and installed at the “Cocoa Research Centre, Vellanikkara, KAU P.O, Thrissur - 680 656” at your own expenses and any packing, forwarding, freight, loading/unloading/handling or installation charges will be met by the firm.

**Sd/  
Professor and Head & P.I. of Project**

**Specifications for equipments**

**1. ULTRA LOW TEMPERATURE FREEZER (VERTICAL TYPE):** should have the minimum capacity of 400 L, should be High Energy Efficient model (energy saving min. 30%, Programmable temperature range up to  $-86^{\circ}\text{C}$  in increment of  $1^{\circ}\text{C}$ , should have two compressors, Pull down time should be around 5 hours, power consumption should be less than 9 KWh per day, System Monitoring & Reporting Technology Software built-in for fault diagnosis or set point variance, polished 304 L stainless steel (SS) interiors, should have vacuum insulation panel combined with Polyurethane foam of 130 mm thickness, heated air vent to prevent vacuum formation, Non-volatile memory & Auto re-start with battery backup, password protection for temperature & alarm set-points, five compartments with four adjustable height SS shelves, the system should have optional facility for  $\text{CO}_2$  and  $\text{LN}_2$  backup systems, the system should have provision for soft ware to control & monitor up to 30 freezers simultaneously, it should be CFC Free and HCFC free refrigerants with biodegradable oil compressor, the freezer should be CE and UL certified. Optional: SS racks (10) and cryogenic boxes (50).

**2. VERTICAL LAMINAR AIR FLOW SYSTEM without Biosafety:** Classification: Class 100; Main Filter: Minipleat HEPA, particle retention size: up to 0.3 micron, Efficiency: 99.999%; Prefilter: Particle retention size: up to 10 micron; Work table: SS304; Cabinet: In GI with PU coating; UV light: UV lamp of suitable length; Illumination: FL lamp of suitable length; Switches: on/off for blower UV/FL; Pressure gauge: Inclined liquid column manometer; Pet cock: SS petcock for air/gas; Working size: 120 x 60 x 60 cm (optional: suitable stabilizer)

**3. VERTICAL LAMINAR AIR FLOW SYSTEM with Biosafety:** Clean Air Biosafety Cabinet Class II Type B2. 100% contaminated air is exhausted to the atmosphere after HEPA filtrations without recirculating in the cabinet. Double skin PU coated GI/SS 304 construction, Removable working table, waste liquid collection tray, UV resistant PC front door, UV on/off integrated with door close/open, Hour meter for UV Lamp, Microprocessor controller to control and display of all operation with remote control operation, Air balancing: 0% recirculation & 100% exhaust, Working Size: 3' x 2' x 2', Face velocity: 100 FPM, Bio-safety level: 2, 3, With PC front door, Minipleat HEPA filter, built-in exhaust & ducting, Power point, Power cord, leveling jack, Stainless steel work table and with, Magnehelic gauge, **Warranty:** Two years + minimum 3 year AMC.

**4. PORTABLE CHLOROPHYLL METER:** With battery power source. Instrument should be able to measure chlorophyll content of leaves using the method of optical density difference between two wave lengths from an LED source. The receptor should have an LCD display with storage capacity for at least 30 observations. The instrument should have

Accuracy	+ 1.0 unit
Repeatability	+ 0.3 units
Reproducibility	+ 0.5 units
Temperature drift within	+ $0.04^{\circ}\text{C}$

**5. HORIZONTAL ELECTROPHORESIS SYSTEM (MINI and WIDE MINI TYPES) WITH POWER SUPPLY: Mini type:** Horizontal electrophoresis system should be able to run the gel size

of 7x10cm with safety lid with sample throughput of 8-30, System should include UV transparent gel tray with integrated fluorescent ruler, System should include tape free gel casting module for leak free operations, System should include casting gates to allow hassle free casting of gels directly in the electrophoresis cells, System should include two 1.5mm 8- & 15-well fixed height combs, System should have the option for adjustable height combs with comb holders, migration rate of Bromophenol Blue dye should be similar to 4.5cm/hr(at 75 V), System should have a lock-in design to run precast ready agarose gels. **Wide Mini type:** horizontal electrophoresis system should be able to run the gel size of 15x10cm with safety lid with sample throughput of 10-60, System should include UV transparent gel tray with integrated fluorescent ruler, System should include tape free gel casting module for leak free operations, System should include casting gates to allow hassle free casting of gels directly in the electrophoresis cells, System should include two 1.5mm 15- & 20-well fixed height combs, System should have the option for adjustable height combs with comb holders, Migration rate of Bromophenol Blue dye should be similar to 4.5cm/hr(at 75 V), System should have a lock-in design to run precast ready agarose gels.

**Power Supply for Horizontal Electrophoresis,** Output range (programmable): 10–300 V, fully adjustable in 1 V steps 4–400 mA, fully adjustable in 1 mA steps 75 W maximum, Type of output: Constant voltage, constant current with automatic crossover, Output terminals: 4 pair recessed banana jacks floating in parallel, Timer: 1–999 min, fully adjustable, Pause/resume run function: YES, Display: LED Operating conditions: 0–40°C; 0–95% humidity in the absence of condensation, Safety compliance: EN–61010 EMI: Conforms to CE Standards for Emissions and Immunity class A, tested only at 230 V; TÜV EMC certification, Safety features: No-load detection, sudden load change detection, overload/short circuit protection, input line protection, auto power-up after power failure, Input protection: Fuse on both hot and neutral Input power (actual): 90–120 or 198–264 VAC, 50 or 60 Hz, autoswitching, and supply of **3 KVA stabilizer**.

**6. WATER PURIFICATION SYSTEM** - To provide ultra pure type I water suitable for molecular biology research work. Compact system approx. 5L/day capacity with reservoir for water storage, real time monitoring system for water quality/quantity and alarm for water quality. Volume adjustable dispenser, portable water feeding with pre filtering facility with boost pump and other necessary accessories. Provision for complete sanitation.

To provide type III water (reverse osmosis/distillation) for tissue culture work capacity 40-50 L/day

Sd/

**Professor and Head, & P.I. of the Project**