

**RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWA VIDYALAYA,  
COLLEGE OF AGRICULTURE, GWALIOR – 474 002**

**TENDER NOTICE**

Sealed tender are hereby invited for supply of equipments/instruments from manufacturer and other government organization/suppliers. The last date for submission of tenders is 1300 hours on 14 March, 2011. The tender will be open on 14-03-2011 at 1500 hours. Tender received after due time & date will be not entertained. The Dean, College of Agriculture, Gwalior, reserves the right to accept or reject any or all the tenders without assigning the reasons thereof and to split of the tender as deemed fit. Interested firm may collect the tender form along with specification from the office of the Dean on or before 14 March, 2011 at 1300 hours. The cost of tender form is Rs. 500/-. Earnest Money Deposit will be 3% of the cost of equipments/ instruments. The tenders forms may be downloaded from website [www.rvskvv.nic.in](http://www.rvskvv.nic.in)

**List of the equipments/instruments:-**

1. Digital top pan balance:
2. Digital EH pH Meter:
3. Autoclave
4. Micropipette Kit
5. Microwave Oven
6. Hot Air Oven
7. Deep Freezer (-20<sup>0</sup> C)
8. Soxhlet Apparatus
9. Electrophoresis
10. Stereo Zoom trinocular microscope
11. Core sampler kit
12. Soil moisture sample box (Aluminum)
13. Soil tensio meter box (Aluminum)
14. Electronic top pan balance
15. UV Visible Spectrophotometer
16. Potansio meter Titrator
17. Yodder apparatus
18. Centrifuge Machine
19. Growth Chamber

**DEAN  
College of Agriculture,  
Gwalior 474002**

## **SPECIFICATION OF EQUIPMENTS/INSTRUMENTS**

**(1) Digital top pan balance:**

Capacity : 200g. and Readability: 0.1 mg. Repeatability: 0.1 mg. and Linearity: 0.2mg.  
unit selection g or ct, and percent weighing.

With draft shield, port for connection to external printer, Automatic Calibration (internal) and over-load protection. Pan Size : 90mm.

**(2) pH Meter:**

Microprocessor based table top model with 16 x 2 Alpha numerical LED display,  
pH Range: 0 to 14, Resolution : 0.01, mV Range : 0 to +/- 1999.9 Resolution: 0.1 mV,  
Automatic Temperature compensation from 0 to 100° C, Storage Capacity up to 100 sample.

**(3) Autoclave**

Vertical model, Outer M.S. inside Stainless Steel, digital temperature indicator, Timer, Automatic low water cut-off device, with safety valve, pressure release valve, water level indicator, paddle lifting device etc. size 350 x 550mm Capacity: 50 liters, load 3.0 kw  
Optional: Automatic pressure control switch.

**(4) Micropipette Kit**

Single Channel Fully Autoclavable micropipette of following size with a pack of tips for all size Micropipette Size : 2-20 µl, 20-200 µl, 200-1000 µl, 1000-10000 µl  
Racks for tips size 200 µl & 1200 µl with hanger for micropipette.

**(5) Microwave Oven**

Microwave oven for laboratory use. Cavity made of Stainless Steel fitted with light Energy Regulator to control Microwave Power Levels. Count-down Timer & Audio-visual Alarm. Cavity size: 30 litre approx.

**(6) Hot Air Oven**

Universal type high temperature oven having a path of forced circulating hot air between the inner chamber made of 304 grade SS and insulation. Microprocessor based PID Digital temp. Indicator-cum-Controller with Digital timer and Buzzer for temperature from 5 degree C above ambient to 300 degree C. Inner Chamber size : 605x605x605mm /605x605x910mm.

**(7) Deep Freezer**

Double walled Microprocessor controlled with Automatic Voltage Stabilizer Horizontal Chest type/Vertical type. Inner made of 304 grade stainless steel and outer of power coated MS with CFC free super dense PUFF insulation, evenly distributed cooling coils for quick freezing and one-piece replaceable door gasket. Mounted on castor wheels and fitted with digital temperature indicator –cum controller. Temp. Range: Ambient to – 20° C. Cap: 170 Litre / 280 Litre / 335 Litre

**(8) Soxhlet Apparatus**

Mental type heating system, suitable to heat soxhlet flasks of 50-500ml. Mild Steel Body with two vertical & two horizontal rods with screw & adopter to hold the flasks. Rating each set 200W. Unit should have 3 sets or 6 Sets. With glass parts & clamps.

**(9) Gel Electrophoresis Unit**

1 System

- (a) Standard Horizontal Gel Unit with removable casting tray.
- (b) Casting gates with integrated silicone seals.  
Gel size – 25x30cm/ with 26x16, 26x24 and 26x32 cm or all three gel trays the multi Sub screen horizontal gel unit having a 672 maximum sample capacity per gel.
- (c) Sample Number/No. of wells – 26 and 52 per comb
- (d) Buffer Recirculation ports available in the tank and safety lid with Cable.
- (e) Combs should be multi channel pipette compatible.
- (f) UV Transparent trays of above sizes with fluorescent rules and maximum comb slot-12

**Power Supply**

- a. 300 v 1000m Amps, 150 watts
- b. Outputs: 4 (in parallel Mode) with LED Display
- c. Suitable for Vertical Gel System also.
- d. Timer which can be set to automatically terminate the run when allocated time has elapsed.
- e. Programming: Easy and User Friendly with membrane keypads
- f. Automatic Cross Over and recovery after power failure.
- g. Safety: Protection against any overload including short circuit. International Certification of safety Required.

**(10) Stereo Zoom Trinocular Microscope**

Optical system	:	Greenough Stereoscopic
Observation Angle	:	35 Degree and 60 Degree
Head Observation	:	Binocular 45 Degree/ 60 Degree Trinocular 45 Deg. Light Split 50/50

Interpupillary Adjustment	:	54mm – 76mm
Diopter Adjustment	:	± 5 Deg.
Zoom Ratio	:	6.7 : 1
Magnification Range Extendable	:	Standard Magnification 0.75X-5.0X-10X-40X From 5X to 180X with Additional Optics.
Eyepieces (Standard)	:	WF 10X
Max. view (Standard)	:	23mm
Working Distance	:	113mm
Transmitted / Incident with LED	:	Individual LED bulb for incident and transmitted
Illumination		Illumination with independent power switch, Mutual intensity control (0% to 100%)

Optional:

Digital Camera System with

Imaging Software	:	½ inch CMOS chip, Image resolution 2048x1536 Max frame rate – 10 fps @ max resolution 40fps@binning, 48mb/s data transfer Pixels, Image plus 2.0 imaging Software Moticam Images Plus 2.0 Software includes
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Following

Instant Image Capturing  
Real time full screen image  
Programmed Interval Captures  
Video Capture by Times Settings  
Easy Measurement Calibration  
Measurement in microns, inches, millimeters  
Length Measurements  
Ellipse, Rectangle, Irregular Shape Measurements  
Perimeter, Radius, Circumference Measurements  
Angle Measurements  
Magnifier (zoom) function  
Distant Image sharing

On-line files sending/receiving

Sound recording

Image Adjustment Effects

Automatic Cell Counting

Data Export

Interactive file format

MP3 Compatible,

**(11) Core sampler kit**

Stainless steel soil sample rings

60 mm dia, 100 cc internal volume,

Complete with 10 stainless steel soil

Sampling rings with end caps, and one nylon headed shock absorbing hammer

**(12) Soil moisture sample box (Aluminum)**

Size 4" dia x 1.25" height (Aluminum)

**(13) Soil tensiometer box (Aluminum)**

Measures soil moisture tension for continuous reading of soil moisture conditions in the field with section meter 0-100 centibar vacuum and screwable tip and translucent head assembly with water trap

Size 0- 15 cm

0 – 30 cm

0 – 45 cm

0 – 60 cm

0 – 75 cm

0 – 90 cm

**(14) Electronic top pan balance**

Automatic calibration with built in weight capacity 600 g max minimum unit 0.1 g, respectively. Stainless steel pan size 160 x 148 mm high stability & sensitivity with high speed applicable for 150, GLP standard operatable on 230 Volts AC adapter and dry battery to be provided.

**(15) UV Visible Spectrophotometer**

Microprocessor controlled Double Beam UV/Visible Spectrophotometer with holographic Grating (600 lines/ mm)

Wavelength Range is 190-1100nm with Band pass should be <2 nm

Wavelength Accuracy should be  $\pm 0.2$  nm with display in 3 digits digital and

Photometric accuracy at 1 Abs should be  $\pm 0.004$  A @ 1A

Stray Radiation of Spectrophotometer should be better than 0.1 % T

Detector -Si-Photo-Diode, Source -Halogen lamp 12 V- 50 W

Noise Level Should be  $\leq 0.0005$ A

Stability of the Spectrophotometer should be  $\leq 0.0005$ A /Hour

Scan Speed should be 3400 nm/min

Spectrophotometer should have built-in LCD display (four digits) for display of data, curve etc.

Spectrophotometer should have built-in ports for suitable printer for hard copy of the result.

Spectrophotometer should have minimum non-volatile 10 method storage capacity storing of methods.

Spectrophotometer should have minimum 10 non-volatile spectra storage capacity for storing of spectra.

Spectrophotometer should have software like Absorbance, transmission, quantitation, multi wavelength program, DNA/Protein Estimation

Should have self Diagnostic Features

Should be ISO 9001 certified operated with  $230V \pm 10\%$ , 50/ 60 Hz

Should be supplied with 10nm path length 4 cuvettes matched within  $\pm 0.3\%$  and cable for connecting to Printer

With manual & guarantee/warranty card & circuit diagrams

#### **(16) Automatic Potentiometric Titrator.**

##### **Features:**

- Microprocessor based
- Two methods: FED/SVD
- Automatic filling and one key stroke rinse operation
- Teflon rod stirrer with speed adjustment
- Eject facility with display of mv or pH
- Formulae of normality, % & ppm
- Results in % ppm (mg/kg)
- Consist to main unit, vessel stand glass titration vessels (4), combination ph electrode, interchangeable burette, mains cord and operating manual.
- Measuring range 0-14 Ph, -1999 to + 1999mv display 20 characters, dual line
- Burette volume 20 ml with resolution 0001 ml/step printer inter phase parts
- Power supply 230 V +- 10V, 50 HZ.

#### **(17) Yodder apparatus**

Yoder type motor driven sieves shaker is for carrying out weight sieves analysis of material. Consists of water reservoir are made of thick S.S. sheet tank and a holder for sieves which can tank up to 7 sieves of 8" dia. Shaker is driven by ¼ HP motor through a belt drive .suitable to operate on 230 volts, 50 cycle, single phase AC fitted with 0-6/120min. Mechanical timer.

\*For 4 set with S.S. tank

Test Sieves (Fine series in 8' dia brass frame.

S.No	B.S.S.	MM
1	4	4.75
2	8	2.00
3	16	1.00
4	30	0.500
5	60	0.250
6	120	0.125

### (18) Centrifuge Machine

Centrifuges are widely used in auxiliary laboratories in industry. Educational & Research institutions Bio Technology. Medical Laboratories Hospitals, Blood Banks, Pharmaceutical Laboratories and agriculture soil testing for determination of moisture equivalent of soil. It is also suitable for cosmetics and food products. Centrifuge rotors & carriers are also suitable for use with Variety of Falcon & Vacutainer Tubes.

- Stepless speed regulator with zero start interlock.
- Digital Speed indicator
- Dynamic Brake
- 0-99 Minutes digital countdown timer
- Imbalance detector with cut off.Safety lid interlock to prevent cover opening during centrifugation.

Technical Data:-

Max. Speed	17300
Max. RCF	27440
Max. Tube Size	100
Max. Capacity	400
WxDxH	400x500x455
Supply	220-240 Volts 50 Hz Single Phase

**Rotor heads for above:-**

Capacity	Speed (RPM)	RCF g
1. 6 x 50ml	12100	14240
2. 8 x 15ml	15400	20150
3. 24 x 1.5ml	17300	27440

### (19) Growth Chamber

Name of the Equipment : Micro controller (PID) based Plant Growth Chamber

Air Circulation : Two chamber blowers to have uniformity of Temperature under loaded condition. ( Above 350Liters)

Alarm : Audio Visual Alarm if the temperature deviates from the preset temperature

Trays : Stainless Steel perforated trays.

Lighting : Interior illumination for working area.

Insulation : 3” Thick CFC free PUF Insulation.

Heating System : U shaped S.S. Nichrome wire air heaters.

Observation Door : Inside see through unbreakable acrylic door

Refrigeration System : Hermetically Sealed CFC Free Danfoss Compressor with R 134a refrigerant having state of art By pass system

for continues run of compressor.

Humidity System : Non condensing type steam injection system with water level arrangement with insulation to save heat energy.

Control System : Precise control of temperature and humidity by using CE approved micro controller based PID controller (Auto tuning type)

Validation Port : 50 mm validation Port Hole with silicon rubber seal to insert sensors for validation purpose.

Power : Works on 230 V AC single phase 50Hz

Other : Castor wheels, MCB, Adjustable Tray Height arrangement.

Heavy duty latch with lock & key.

Safety Features : 1. Float switch to cutoff the mains supply in case of low water level in the boiler tank.

: 2. Additional safety thermostat to cut off the boiler system in case of overshoot of temperature.

: 3. 180 Sec. compressor ‘ON’ delay timer to safe guard the compressor.

[ISO 9001: 2008](#)

#### SPECIFICATIONS

Temperature Range : 10° C to 60° C

Temperature Accuracy :  $\pm 0.2^{\circ}$  C

Temperature Uniformity :  $\pm 1^{\circ}$  C

Humidity Range : 40% RH to 95% RH.

Humidity Accuracy :  $\pm 2\%$  RH.

Humidity Uniformity :  $\pm 3\%$  RH.

Photo Effect : Fluorescent tubes for day light effect

Timer : 99 Hrs Programmable Micro Controller Based cyclic Timer for regulating illumination condition

Standard Models: Inner Stainless steel 304, 0.8 mm & Outer mild steel, 1.0 mm powder coated

Models Capacity in

liters

Internal Size in

(W x D x H) cms

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**TERMS AND CONDITIONS**

Tender No.		
Date of Publication		
Date of issuing the tender form	01-03-2011	Time 10.00 to 17.00 (working hours)
Last date for submission of the tender	14.03.2011	Time 13.00 hrs. at Office of the Dean, College of Agriculture, Gwalior 474004
Date and Time of opening of Tender	14.03.2011	Time 15.00 hrs. at Office of the Dean, College of Agriculture, Gwalior

1. Only the manufacturer and their authorized sales services agent will submit the tender. The firms submitting the tender will have to submit a certificate of manufacturing of the unit / authorization certificate of the manufacturer. The tenderer should have service center with trained personnel to undertake servicing at Gwalior and other places in western M.P.
2. No person or firm shall submit more than one tender for the same item.
3. Broad based specification of the system / equipment is given along with the tender form. The tenderer should take note of it and if there are additional specification, which needs attention, should be mentioned in the specification.
4. The tenderer must submit the tender form issued by the office in original, tender document, signed copy of the terms and conditions duly stamped along with requisite EMD in a sealed cover, in the Office of the Dean, College of Agriculture, Gwalior 474002 by registered or speed post / courier or delivered up to 13.00 hrs of 14.03.2011 from the date of Publication.
5. Delayed tenders due to postal or any other reason will not be considered.
6. The EMD (Earnest Money Deposit) valid for six months from the date of issue should be in the form of A/C Payee DD / Banker's Cheque/ Fixed Deposit Receipt of a nationalized / Schedule Bank in favour of "Dean, College of Agriculture, Gwalior" payable at Gwalior. In absence of EMD with the prescribed form, the tender will not be considered. The EMD will be forfeited in case the tenderer fail to execute the order in specified time.
7. The tender offer should have validity for the period of 180 days.
8. The rates quoted should be inclusive of Sales Tax, F.O.R., VAT tax CST etc. College of Agriculture, Gwalior 474002, inclusive of packing & forwarding, loading, unloading and handling charges, freight, insurance, full risk coverage etc. The RVSKVV is exempted from Excise duty.
9. In case of imported item the CIF value should be Mumbai or Delhi Airport. The tenderer must specify the custom clearance and transportation charges.
10. Break of the prices for the main item and its accessories should be given separately. The tenderer should also specify the probable period of delivery of the equipment.
11. The tenderer should install the equipment and provide free training to the Scientist / Teachers pertaining to the use of the equipment.
12. A list of the organizations where the similar type of equipment is supplied by the tenderer around in M.P. should be enclosed with the tender.
13. Each tender must be accompanied with the technical literature of the equipment failing which the tender will not be considered.
14. The tenderer should be given the warranty minimum for 2 years to provide service/ maintenance free of cost during warranty period.

15. If desired in the specification the tenderer should quote the comprehensive AMC charges for another 3 years.
16. The tender will be opened on 14.03.2011 at 1500 hrs by the members of the College level purchase committee in the Office of Dean, College of Agriculture, Gwalior 474002. The tenderer can depute his authorized representative to be present at the time of opening of the tenders.
17. The Dean, College of Agriculture, Gwalior reserves the right to extend the due date and the date of opening of the tender.
18. If required the tenderer will have to arrange a demonstration of the equipment or system without any charges or obligations.
19. The EMD shall be released after 50 days from the date of opening of the tender.
20. The tenderer will arrange to supply the equipment as per the specifications within 10 days/ specified period of delivery from the date of issue of order failing which the order will be treated as cancelled.
21. The standard terms and conditions of payment acceptable or – payment in full will be made after the contract is effective in full and to the satisfaction of the authority. The payment will be released to the firm supplying the equipment only on successful installation.
22. In case of the equipment to be imported the import license, CDE certificate and other required papers as per the Govt. procedure will be made available to the supplier or importer.
23. If so desired the tenderer should have to enter into an agreement.
24. Any deviation, variation or non-compliance by the tenderer shall be considered as breach of contract and the undersigned reserves the right to forfeit the amount of the EMD in part or full and to take action as per legal arrangement.
25. The Dean, College of Agriculture, Gwalior, reserves the right to accept or reject any or all the tenders without assigning the reasons thereof and to split of the tender as deemed fit.
26. Should there arise any dispute, the Vice Chancellor, RVSKVV, Gwalior shall be the sole Arbitrator whose decision in the matter shall be final and binding.
27. The tenderer shall have to give an undertaking that the terms and conditions as mentioned above are acceptable to the tenderer by providing a signed and dully stamped copy of the terms and conditions.

**Tenders are liable for rejection if:-**

1. Tender not received on due date and time.
2. Earnest Money is not enclosed.
3. Income tax clearance certificate not attached with tender.
4. The rates quoted are not F.O.R. Destination.
5. Central and state sales tax shown separately.
6. Sample of items are not enclosed.
7. The tender not submitted in the format supplied by the V.V. will not be considered and rejected at the time of opening.
8. Certificate of Registration for the type of Business is not enclosed with the tender.

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