



**Office of ADR
Zonal Agricultural Research Station
(RVSKVV) Morena 476 001 M.P.**

E-TENDER NOTICE

Offers are invited for the supply of equipment of honey quality analytical, disease diagnosis, honey processing plant, manufacturing equipments' for IBDC from manufacturers/authorized dealers/distributors through e-tendering). Tender forms along with specifications and other details can be purchased online from the website www.mptenders.gov.in during 28-12-2019, 10.30 AM to 27-01-2020, 5:00 PM. Information is also available on www.rvskvv.net. Last date for filling of e-Tender is 27-01-2020 up to 5:00 PM. Physical bid may be submitted up to 3.00 PM on 30-01-2020. Opening of Technical Bid: 31.01.2020, 3.30 pm and Financial Bid: 03.02.2020, 3.00 PM.

(No./ADR/MRN/Estt./2019-20/429, dt 28.12.2019)

**ADR
ZARS, Morena (MP)**

RAJMATA VIJAYARAJE SCINDIA KRISHI VISHWAVIDYALAYA
Zonal Agricultural Research Station, Morena 476 001 M.P.

No./ADR/MRN/Estt./2019-20/430

Dated 28.12.2019

To,
Dean Faculty of Agriculture,
RVSKVV,
Gwalior (M.P.)

Sub: - Regarding publishing of e-Tender Notice in the V.V.Website.

Madam/Sir

Please find enclosed herewith e-Tender Notice for the purchase of equipments/instruments for IBDC project for publication in the VV websites. The e-Tender Notice has also been published in website www.mptenders.gov.in. Therefore you are kindly requested to please publish it at earliest, so that wide publicity of tender documents may be ensured.

With regards!

ADR
ZARS, Morena

No./ADR/MRN/Estt./2019-20/431

Dated 28.12.2019

C. C. to information:

1. DRS, RVSKVV, Gwalior
2. Dean COA, RVSKVV, Gwalior
3. PRO, RVSKVV, Gwalior
4. PS to Hon'ble Vice Chancellor, RVSKVV, Gwalior
5. Mr. Vikas Jain, Gwalior for publications of tender documents on www.mptenders.gov.in

OFFICE OF THE ADR
Zonal Agricultural Research Station (RVSKVV), Morena 476 001 M.P.

E-TENDER NOTICE FOR THE PURCHASE OF EQUIPMENTS/INSTRUMENTS

(No./ADR/MRN/Estt./2019-20/432 Dt.28.12.2019)

Following laboratory equipments/instruments are to be procured at ZARS-KVK, Morena for the establishment of IBDC. This procurement will be carried out through the e-procurement system of www.mptenders.gov.in. On-line bids, under Open Tender Enquiry, following the two bids system are invited for supply of these equipments/instruments. Tender documents with specifications can be purchased from this site by paying the stipulated cost as mentioned below:

Item	Name of the Equipment/ Item/Structure	Document Cost	EMD
1.	High Pressure Liquid Chromatograph	₹ 5000	₹ 50000
2.	Honey Processing Plant	₹ 2000	₹ 20000
3.	Semi Automatic Autoclave	₹ 1000	₹ 5000
4.	Inverted microscope with photographic attachment	₹ 2000	₹ 25000
5.	Gel Electrophoresis system	₹ 1000	₹15000
6.	Gel documentation system	₹ 1000	₹15000
7.	Ara Machine	₹ 1000	₹ 5000

Please read and follow the instructions carefully to avoid the rejection of the tender. You may also send your representatives, duly authorized in writing to attend the Technical Evaluation and clarification regarding bids which is scheduled at 3:00 PM on 31st January, 2020.

ADR, ZARS, Morena

OFFICE OF THE ADR
Zonal Agricultural Research Station (RVSKVV), Morena 476 001 M.P.
E-Tender Document
CRITICAL DATES

S. No.	Item	Date	Time
a)	Publishing Date	28 December 2019	16 ⁰⁰
b)	Document Purchase Start Date	28 December 2019	10 ³⁰
c)	e-Bid Submission End Date	27 January 2020	17 ⁰⁰
d)	Physical bid document Submission end date in the Office	30 January 2020	15 ⁰⁰
e)	Opening of the Technical Bid at RVSKVV	31 January 2020	15 ³⁰
f)	Technical Evaluation of Bids	31 January 2020	16 ⁰⁰
g)	Financial/Price Bid e-Opening Date	3 February 2020	14 ⁰⁰

DEPOSITING THE BIDS:

The bids will be submitted through on-line mode of www.mptenders.gov.in. However, certain documents would be required to be submitted physically to our office. Details are as follows:

(A) On-line Submission:

(i) **Cover-I:** Will contain the Technical Bids with the following documents:

- Detailed technical write-up highlighting the model Name/Number, features of the equipment offered and / or Technical literature/manuals.
- Certificate for acceptance of terms and conditions of tender enquiry on firms letterhead.
- Original equipment manufacturer (OEM) certificate or authorized dealership/distributorship certificate as applicable.
- Manufacturing Registration No.
- Company Printed Price List (If available)
- Last 3 (three) years income tax return.
- Audited Balance Sheet for Last 3 (Three) years.
- TIN number/PAN Number/Certificate/GST number
- Business Registration Certificate.
- Supplier should have at least average annual turnover of Rs one Core for major equipments and 50 lakhs for minor items for last 3 years.
- Scanned Copy of EMD (or exemption proof, if exempted) as shown against each item.
- Compliance Certificate. Certificate of clause by clause compliance of specifications as mentioned in tender.

(B) Physical Submission:

Following documents to be submitted in hard copy physically in a sealed envelope by **Speed Post/Registered post** so as to reach prior to bid submission closing date & time. The responsibility to ensure this lies with the Bidder.

Please do not submit the hard copy of “Commercial/Price bid”.

- All the documents submitted on-line in Cover I.

- EMD as shown against each item (in original) or proof of exemption **(NIS Certificate against exemption from deposition of EMD should be strictly for only indigenous manufactured items not for items of foreign origin/manufactured in foreign countries other than India. Moreover tendered item should strictly be matched with the list of NIS for which any firm has claimed for exemption from EMD. Otherwise claim is not valid and tender will not be accepted.)**
- Tender fee receipt copy (as applicable).
- Tender conditions Acceptance Certificate in form of downloaded Tender documents duly stamped and signed.
- Client list/ List of users on manufacturers' letter head duly stamped and signed.
- User Certificate with Phone No. and E mail address.
- Guarantee/warranty on manufacturers' letterhead.
- The supplier is bounded to supply spare parts of equipments for the at least next 10 years.

GENERAL TERMS AND CONDITIONS:

- 1.*Only the manufactures and/or their authorized dealer/distributors/sole agents/Channel Partners need to submit their tender. The authorized firms should furnish a certificate from the manufacturer for their dealership/distributorship in original with the physical bid otherwise the offer will not be considered.
- 2.No person or firm shall submit more than one Tender for the same item. No offer should have more than one model quoted; in case of more than one alternate offer only the first option will be considered.
3. It is mandatory to provide all the relevant information in ***Annexure -I***.
4. Broad-based specifications of equipment/items/systems/works *etc.* are given in ***Annexure- II*** of purchased tender. The tenderer should also take note of the remarks, if any, given there in.
5. a. Last date for submission of e-Tender is 27.01.2020 up to 5:00 PM on www.mpeproc.gov.in.
b. Tender must be submitted in sealed cover to the **Associate Director Research, Zonal Agricultural Research Station, AB-Road, Morena 476001** by **Registered/Speed Post**, so as to reach on or before dated 30-01-2020, 3:00 PM.
c. Belated tender due to postal or any other delay will be rejected.
d. The tender for each item should be sent separately. The duly sealed envelope should super scribe TENDER FOR THE ITEM No___ (NAME OF THE EQUIPMENT) DUE ON 30 January 2020 with reference number.
e. If offers for more than one item are clubbed together, tender will be rejected.
f. The tender offers should have a validity of 180 days or more from the due date. The tenders will be valid for 6 months from the date of opening and may be asked for extension by taking written concern of the firms.
g. **Price bid will be opened online at www.mptenders.gov.in on 31-01-2020 from 3;00 P.M. to 5.00PM. If date of opening of price bid will changed due to any circumstances. That will be informed to bidders.**
h. R.V.S. Krishi Vishwa Vidyalaya (RVSKVV) reserves the right to extend the opening due date and or the date of opening the tenders.
i. All the leaflets in the offer should be marked with signature and seal of authorized person.
6. a. The rates quoted should preferably in Indian Rupees (₹) for a **single complete unit** with F.O.R. delivery at ZARS, Morena. The rates quoted should be inclusive of packing and forwarding

charges/loading/unloading/handling charges/freight/full risk coverage/insurance, *etc.* In case of imported goods all the expenses towards custom duty, clearing charges and transportation with insurance will be borne by the firm/tenderer and they must quote the rates inclusive of all FOR, ZARS, Morena.

- b. Excise duty/Sales Tax/GST/Custom duty (with and without concession certificate) and other levies, if any should be shown separately and the **total price** of each item should be worked out incorporating the same.
- c. The institute will provide the custom duty exemption certificate if necessary for the imported instrument.
- d. Any other charges, such as technical service charges, cost of training, installation charges, TA/DA of tenderer's staff *etc.* if any, should be shown separately for each item and each sub-item and the total price of each item should be worked out incorporating the same.
7. All losses during transit will have to be made good by the tenderers at his cost within a period of 15 days.
8. The tenderers must provide guarantee/warranty on **manufacturers' letterhead** of satisfactory functioning of the equipment/system and free service including free replacement of parts for a period of at least **3 years** from the successful and satisfactory installation of the equipment/system. Original to be deposited by the successful bidder at the time of supply.
9. **Performance Guarantee:** The Successful bidder/supplier will be required to furnish a Performance Guarantee in the form of FDR from a public sector bank or a private sector bank authorized to conduct government business for a sum equal to **10%** of the Supply Order value within 30 days of signing of the Supply Order. Performance Bank Guarantee will be valid up to 60 days beyond the date of guarantee/warranty.
10. Offer must be accompanied by **Earnest Money** as stated against each item must be submitted **on-line**. Without the deposition of earnest money, the offers will be rejected.
11. The standard terms and conditions of payment is in full only after the installation is affected to the satisfaction of RVSKVV authorities. In specific cases, Letter of Credit (LC) may be opened in any of the Nationalized Bank.
12. In case of equipment to be imported, import license NMI/CDE certificates, as applicable will be arranged by RVSKVV, as per the Government procedures.
13. Please quote maximum discounted price, as no further negotiations will be made.
14. Complimentary items/gifts offered will not be given any preference and will not be taken into account for calculating the cost of the item.
- 15.*The offer must mention make, model all the specifications of the item clearly. The company must enclose printed literature/catalogue/manufacturer's web-site showing detailed technical specifications required. A folder showing many instruments without detailed technical specification, or tailor made literature mentioning "yes" or "as per your specifications" for the specifications asked for, will not be considered. Specifications given in the offer must match to the website and/or printed technical literature otherwise the offers shall be rejected.
16. Technical specifications of the equipment / items have been very clearly formulated by the users/experts of the field as per the requirement of the work to be conducted. It will be sole discretion of the bidder whether to quote or not for an equipment with particular specifications.
- 17.*Firm must provide a compliance statement vis-à-vis specifications in a following "tabular form" clearly stating the compliance, supported by technical literature with clear reference. This statement must be signed, with the company seal, by the Tenderer for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the offer.

Name of Equipment:		
Technical Specification	Compliance (Y/N)	Deviation, If any

18.*Offer must be accompanied with a comprehensive list of users on manufacturers' letterhead, wherever possible bidders may also provide certificates for satisfactory working of the equipment from users of universities and institutions of repute.

19. a. If so desired by RVSKVV, the bidders shall have to enter in to an agreement.

b. Any wrong information about item, any forged document and any deviation, variation of non-compliance of the terms and conditions by the tenderers shall be considered as a breach of contract and RVSKVV reserves the right to forfeit the amount of earnest money and/or security deposit in full and take action as per legal arrangement.

20. Should there arise any dispute, the Hon'ble Vice Chancellor, RVSKVV, Gwalior shall be the sole Arbitrator whose decision in the matter shall be final and binding. Each and every judiciary transaction shall be subjected to Gwalior only.

21.*Tender will not be considered if the firm does not supply a copy of the TIN/ GST& PAN allotted to it. PAN of the owner or any other persons will not be accepted.

22.This tender is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the tender, should it become necessary at any stage.

23.RVSKVV reserves the right to accept or reject any or all offers in full or in part without assigning any reason (s) thereof. It also reserves the right to place and order wholly or in part with one or more than one firm as it may be convenient to RVSKVV, Gwalior.

24.The tenderer shall have to give an undertaking that the terms and conditions as mentioned above of this tender are acceptable to the tenderers in form of downloaded Tender documents duly stamped and signed.

25.If firm wishes, they can send their representatives, duly authorized in writing, to attend the Technical Evaluation and clarification regarding bids which is scheduled at 3:0 PM on 31-01-2020.

26. In case, if single manufacturer of the any item and having propriety rights. Items may be purchased with the permission of concerned higher authority.

27. The 75% payment will be made after successful installation of the equipment/structure and remaining 25% after six months of satisfactory smooth working.

Dated:28-12-2019

ADR, ZARS, Morena

OFFICE OF THE ADR
Zonal Agricultural Research Station (RVSKVV), Morena 476 001 M.P.

SUPPLEMENT / CHECK-LIST TO BE PROVIDED WITH TECHNICAL BID

ITEM No. _____ NAME _____

S.No.	Information required	Proposed
1.	Make of main item	
2.	Model of main item	
3.	Name of manufacturer of Main Item	
4.	Country of origin of main item	
5.	Name, Make and model of sub item I (if any)	
6.	Name, Make and model of sub-item II (if any)	
7.	Name, Make and model of sub-item III (if any)	
8.	Delivery within (days)	
9.	Rate of Excise duty (%) with surcharge, if applicable (item-wise if different ED is applicable)	
10.	Rate of GST (%) liveable. If no, state basis and terms of the exemption.	
11.	Is Service Tax extra? If yes, rate of Service Tax liveable (%)	
12.	Is Custom Duty Exemption (CDE) required? If yes, Rate of Customs Duty (%) payable.	
13.	Any other Taxes / Duties / Octroi / Entry taxes <i>etc.</i> in %	
14.	Order to be placed on	
15.	Guarantee/Warrantee (3 years)	
16.	Validity (at least 180 days)	
17.	FOR:ZARS, Morena	
18.	List of current users (Attach, if any)	
19.	Certification of satisfactory working of the equipment (Attach, if any)	
20.	Compliance of equipment with current directives of ISI / CE / EEC / US / EU or equivalent standards	
21.	Whether manufacturer / authorized distributor/sole agent? (Attach original certificate)	
22.	Technical literature (Attach, if any)	

23.	Earnest money (EMD) attached in form of FDR (attach original)	
24.	Situations of Authorized service centers/ service personals <i>etc.</i> (Provide complete address)	
25.	Relevant documents such as ITCC, ST registration shop Act. establishment certificate, factory registration <i>etc.</i> (enlist and attach)	
26.	TIN and PAN allotted (Attach a copy)	
27.	GST number	
28.	Any other relevant information	

DECLARATION

The terms and conditions as mentioned in the tender are acceptable to us.

Authorized Signatory

(Seal of the Firm)

SPECIFICATIONS**1. High Pressure Liquid Chromatograph**

S. No.	Required Specification of Item(s)	
A	Integrated High Pressure Binary Gradient with two pumps)	
		Flow rate 0.001 to 20.000 mL/min. in increment 0.001mL/min Flow precision: 0.1% RSD or better Flow accuracy: $\pm 1\%$ Max operating pressure: upto 5000psi or better Compressibility compensation: Programmable Delay Volume < 200 μ L or better Compositional accuracy $\leq 0.5\%$ Compositional precision $\leq 0.5\%$ RSD Operating pressure limits: Programmable high and low low pressure limits, user selectable in psi, bar, kPa. The unit should have 100ul heads, injector, and should be designed for isocratic or gradient applications Prefixed 11 gradient Curves or more
B	Specification of UV Detector:	
		Wavelength Range : 190-700nm or better Wavelength Accuracy : ± 1 nm Wavelength Repeatability: ± 0.1 nm Photodiodes should be 512 or more Band Width: 5 nm or better Linearity range: $\leq 5\%$ at 2 AU, propylparaben at 257nm Base line noise: 5×10^{-6} Au, Drift: $\leq 1.0 \times 10^{-4}$ /Au/ Light source: Deuterium lamp and/or Tungsten Lamp with 2000 hour warranty Flow cell design: Advanced Taper Slit design for reduced RI effects better peak shape, highest sensitivity. Data acquisition rate: Upto 80Hz Lamp Optimization software
B	RI Detector With Column Heater	
		Refractive Index range: 1.00 to 1.75 RIU Measurement range: 7.0×10^{-9} to 5.0×10^{-4} RIU. Flow rate: 0.1 to 10.0 ml/min. Cell volume: 10ul. Flow Cell: Fused Quartz Cell pressure: 100 psi maximum.

		Linear Dynamic Range: <5% over $\pm 5.0 \times 10^{-4}$ RIU.
		Internal oven: 30 - 55 ⁰ C, ± 0.5 ° C, settable in 1° C increments.
		Noise: $\pm 1.5 \times 10^{-9}$ RIU mode.
		Drift: $\pm 2.0 \times 10^{-7}$ RIU/hr.
		Column Heater Workable temperature range Ambient + 5 ° C to 60°C or more
		For 300 mm and minimum 2 columns can accommodate
C	Specification for Manual Injector	
		A suitable injector with 5, 20, 50, 200 ul loop
		Operating pressure upto 5000 psi.
		1-20ul syringe 20ul sample loop
		Sample load without interruption of flow
		built-in- injector signal with standard screw connections.
D	Specification of Chromatography management software	
		Software for Control, acquire and process HPLC data
		It should have database library, Pre-made templates, Embedded oracle database, customizable data reports, online help & answer wizard report publisher, versatility for multitasking without multiple software package with All the necessary hardware to run the software.
		The Software should be genuine & original
E	Warranty	1 year standard comprehensive warranty
F	Other Accessories	
	UPS :	Online UPS 1 KVA capacity with 30 minutes backup or more back up time.
	PC and Printer	A state of the art appropriate PC and Printer
	Column	One No. Suitable C18 column

2. Honey Processing Plant

Dimension

capacity 500 kg.:

Height = 160 cm. **Length:** 185cm. **Width:** 130cm.

Dimensions of Main tank: Dia: 84cm, Height 90 centimetre,

Dimensions of two Micro filter(s): Dia: 20cm, Height 30 cm,

Dimensions of water heater (S.S. Made): Dia: 35cm, Height 29cm,

Dimensions of pre filter(s): Dia: 30.5, Height 20 cm,

Dimensions of Moisture Reduction Unit: Height = 310 cm. **Length:** 115cm. **Width:** 105cm.

Material: All Stainless Steel 304 or 316

Specifications of Honey Processing Plant: (with Moisture Reduction Unit).

Material: Stainless steel 304 food grade material (attested).

Electricity supply: (220.V. or 440 V)

Other Specifications:

1. All S.S. 304.
2. Honey pumps and ball valves of Stainless Steel heavy duty.
3. High quality ISI electric motors installed.
4. Pre filtration unit attached to filter the large impurities from honey.
5. Micro filters assembled for micro level, crystal clear filtration
6. Honey heating systems is double jacketed with inner heat rotator for the maintain aroma and flavour.
7. Electric Load: 5.75 K.W. + 6K.W. for honey heating.
8. Easy to operate.
9. Falling film evaporator moisture reduction unit.
10. Latest technology used.
11. Honey pumps are high quality 304 Stainless Steel.

Accessory: Suitable Capacity Honey settling drum. A Tool kit and moisture check meter.

3. Semi Automatic Autoclave

Specifications	
Shape	Vertical
Power Consumption	6KW
Warranty	1 Year
Pressure Range (psi)	15-20psi
No. of Trays	2 Tray
Capacity	78Litres
Automation Grade	Semi Automatic, Fully Automatic
Mount Type	Floor Mounted Autoclave
Type Of Sterilizer	FOR STERILIZATION
Model Number	GTA-001
Approval Certificate	GMP, CE Certificate, ISO 9001 2008
Material	Stainless Steel
No. Of Trays	1-3 TRAY
Temperature Range	121-134 DEG
Pressure Range	15-22PSI
Product Type	Vertical Autoclave
Size	400x600mm
Outer Body	SS
Door Type	MANUAL RADIAL LOCKING
Is It Rust Proof	Rust Proof
Control	PLC/HMI
Controls	PLC/HMI
Insulation Wall	Triple Wall
Chamber Volume	78Litres

4. Inverted Microscope with Photographic attachment

Specifications:

Microscope stand with quadruple revolving nosepiece with LED transmitted light for bright field and phase contrast microscopy. Optical system must be infinity corrected for maximum S/N ratio and best optical performance from UV to near-infrared.

Observation Tube: Fixed Trinocular observation tube with light distribution of 100:0/0:100 Interpupillary distance adjustment; Trinocular port to attach camera. Eyepiece tube with two eye points high and low for different height users.

Mechanical Stage: Mechanical Stage with flexible right hand low drive control along with glass slide holder and plate holder. Stage movement should have X=110mm and Y=74mm.

Light Source: LED Illuminator with life time of more than 20000 Hours.

Condenser: Long Working Distance Condenser with BF/Ph, N.A. 0.3 and W.D. 72 mm or better and free working distance of more than 180mm, Phase slider for phase contrast application with single position for 4X-40X and one position for 2X objective.

Objectives: Bright field plan achromatic 4X objective plan achromatic Phase Objectives 10x (N.A. ~0.25), 20X N.A. ~0.4 and 40X NA~0.55.

Eyepieces: Wide-field paired eyepieces 10X F.N. 22 or better.

Interference Green Contrast Filter, dust cover, ND filter daylight filter.

Fluorescence Illuminator: Reflected light fluorescence illuminator equipped with field stop, minimum 3-position fluorescence slider with Blue excitation filter set, Green excitation filter set and UV filter set for FITC, TRITC and DAPI fluorescence Dyes respectively. Fluorescence Lamp House for 100W Mercury burner with power supply for Fluorescence application or better. A separate attachment to blocks out room light/stray light to enhance the contrast of fluorescence and enable clear fluorescence observation even under bright conditions.

Photography attachment and image analysis software.

Digital Color CCD Camera: Minimum resolution $\geq 2400 \times 2000$, 5 Megapixel, 12 Bit, minimum 2/3" CCD color camera with minimum pixel size of $3.4 \mu\text{m} \times 3.4 \mu\text{m}$ at full frame; Camera should be compatible to attachment onto desktop/laptop through single wire. Provided with C mount adapter.

Including all the necessary cables/power supply.

Image Analysis Software to act as an interface between the digital camera and the computer system. With capture time lapse or time course experiments. Zoom to region of interest tool; Simple statistics and analysis within a frame, Region of Interest (ROI) or line; Image workflow managed within Multiple Document Interface (MDI).

External hard drive of minimum 2 TB capacity for storage of captured images.

Branded computer with i7 processor, 1TB HDD, 8 GB RAM, Keyboard, Mouse with >20" color TFT monitor and on line UPS of 2 KV.

5. Gel Documentation System:

Specifications:

With ≥ 5 megapixel digital camera with auto exposure.

With \geq large $\geq 21 \times 26$ cm viewing area.

With a viewing pane having universal 560nm amber filter for gel inspection.

With an interchangeable filter slide having 620nm ethidium bromide filter as standard.

Should include a front LCD indicator panel for safe and convenient gel inspection.

With an option for blue epi-illumination module with white light table for viewing visible gels and making the gel doc suitable for imaging most fluorescent and colorimetric gels.

Should have a cabinet door with pull out transilluminator.

The system should include analysis software.

Camera: CMOS scientific grade sensor with auto-exposure; pre focused ≥ 5 mega pixel camera; Maximum CMOS resolution $\geq 2400 \times 1800$ pixels; Pixel density RAW 8 bit/10bit/12 bit; with ~ 6 mm focal length: F1.2 aperture size with manual adjustment.

Software: With options to rotate image, flip image, brightness, contrast, zoom, selecting image lanes, addition and deletion of lanes. Lane analysis, auto find and adding the peaks. Should have image summarization option which includes calculation of density and calculation of molecular weight. Option for Dot/Blot positive and negative analysis. With automated software for rapid analysis of 2d protein spots between samples. Database Software to match unlimited number of primers in unlimited Gels; Genotyping capabilities, Create cluster analysis, RFLP, RAPD, SSR, Fingerprinting, VNTR analysis, Genotyping etc. All the software should be supplied with a lifelong license and should free upgrades as and they are introduced. Also, in the event of software being accidentally deleted from the PC, they should be supplied free of charge.

Transilluminator: Should be 312nm single wavelength transilluminator. Viewing area size should be $\geq 21 \times 26$ cm; with at least 6x8 w UV tubes.

Darkroom: With 6x1W white lamp module; UV lights shuts off when the door opens.

Data Processing Unit with Intel i7 Processor, 8 GB RAM, 1TBROM, Licensed latest version Windows Professional, MS Office and Adobe Photoshop. Should be supplied with suitable on line UPS.

6. Gel Electrophoresis Apparatus:

A. Horizontal Electrophoresis System

Specifications: Low buffer consumption.

Multi-channel pipette compatibility.

Gel Dimension: 150 x 100 mm; 150 x 150 mm; 150 x 250 mm.

Maximum Sample: Up to 120.

Construction: Infection molded construction, durable, leak proof environment for complete safety and long life.

Cassette Type Electrodes: Inexpensive, easy to replace, made of 99.99% corrosion; resistant; pure platinum.

Electrical Safety: Lid can be located in one way only, on removal, power is disconnected from buffer chamber.

Rapid Casting Gel: Use casting dams.

With appropriate certification

B. Vertical Electrophoresis:

Specifications:

Plate Dimensions: (WxH): $\sim 18 \times 20$ cm

Standard Spacer Dimensions: (W x H): Approximate 2 x 20 cm.

IPG Spacer Dimensions: ~ 20 cm

Unit Dimensions: (W x H x D) Approx $\sim 20 \times 30 \times 25$ cm

Number of Gels: 1-2

Total Volume upper buffer chamber: Approximate 400 ml.

Total buffer Volume for 2 gels: ~ 1.5 l

Comb: 25 well with 1 mm and 1.5 mm thickness each

Comb: 20 well with 1 mm and 1.5 mm thickness each

Comb: 15 well with 1 mm and 1.5 mm thickness each.

2 set: Notch plate

2 set: Spacer plate
Spacer (2 set) 1 and 1.5
Dummy plate: 1 No.

The casting stand's having single-screw clamps exert even pressure along the entire length of the glass plates, providing a leak-proof seal without grease or agarose plugs.

The central cooling core can be connected *via* recirculation ports to tap water or a cooled recirculating bath, or filled with coolant to act as a heat sink, providing smile-free patterns with as little as 1.5 l of buffer.

(C) Power supply for Electrophoresis System:

Specifications:

Display: backlit graphics LCD

Output range (Programmable) Volts: 10-300 V, Current: 4 to 350 mA, Power: 1-75 W

Type of Output: Constant voltage, constant current or constant power.

Automatic crossover

Timer: 1 min-99 hr, 59 min.

Pause/resume function

3 Recessed port or better in parallel.

Safety Features: No lead detection; sudden load change detection; ground leak detection, arc detection, overload/short circuit detection; over voltage protection.

Automatic recovery after power failure.

(D) High Throughput Horizontal Electrophoresis:

Specifications:

High throughput submarine electrophoresis unit for running up to 96 samples at a time should be compatible with (96 samples/192 samples).

Two pairs detachable electrodes.

It should be compatible for multi-channel pipettes.

Should include buffer tank, a safety lid with cables, labeling bubble and combs

Gel Tray size ~25 x 18 (cm).

Tape free gel caster along with casting gates.

Optional preparative combs.

Base buffer volume should not more than 3000 ml.

Should include buffer tank, a safety lid with cables a leveling bubble and combs.

Power supply:

Programmable power supply

Type of Output: Constant-Voltage, Current, Power Output Range Aprox: 5-300V, 1-3000V, 1-300W

Resolution: Volt 1V, Current 1 mA, Power 1W

Time Range: 1 Min-9hr 9 min.

Display: LCD

Output: 4

7. Ara Machine

Specification of Ara machine (Saw mill)

Throat depth- 430mm

Diameter of saw wheels- 455mm

Work table size- 535 x 585 mm

Width of saw wheels- 50 mm

ZARS Level Technical Purchase Committee

1. Er. S.K. Tiwari (Chairman)
2. Dr. Sandeep Singh Tomar (Member)
3. Drt. Ashok Singh Yadav (Member)
4. Dr. Sukhvir Singh (Member)
5. Dr. Jagendra Singh (Member)
6. Dr. R. J. Tiwari (Member Secretary)
7. Er. N. K. Sharma (Member)

(ADR)