

No.Qlty/2(2)/2006/Guntur

Dated 20th September, 2006

QUOTATION NOTICE.

Sub:- Purchase of Equipments – reg.

Sealed quotations are invited superscribed “Quotation for Equipments” conforming to the detailed specifications and directions given in annexure –1, for the supply of the following items.

Offer addressed to the Director (Res), Indian Cardamom Research Institute, Spices Board, Sugandha Bhavan, Palarivattom, Cochin – 25, should reach this office before 4 p.m. on 05.10.2006. Quotations should provide the detailed specifications of the item on offer with the name of the brand, terms and conditions of supply, service, delivery period etc.

Prices should be quoted CIF Hyderabad.

- a) HPLC SYSTEM
- b) GC WITH FPD & ECD.
- c) ELECTRONIC BALANCES (5 & 2 Decimal digit precisions)
- d) UV-VIS SPECTROPHOTOMETER.
- e) STERIOSCOPIIC MICROSCOPE.
- f) BIO SAFETY CABINET, LEVEL II
- g) BINOCULAR MICROSCOPE WITH OIL IMMERSION OBJECTIVES.

Quotations will be opened in the presence of representatives of the bidders, if any present, at 4 pm on 05.10.2006.

The Spices Board reserves the right to accept or reject the quotation without assigning any reason.

Spices Board
(Ministry of Commerce and Industry Govt. of India)
Sugandha Bhavan, N.H.By-pass, P.B.No.2277
Palarivattom P.O, COCHIN – 682025
KERALA, INDIA.

1. HPLC SYSTEM WITH FLUORESCENCE DETECTOR AND UV-VIS DETECTOR

Quotation for a complete HPLC system as described in Table 1, under buyback arrangement for a Waters HPLC system with the following specifications:

Pump: Waters 600 Pump / Controller
 Detector: Waters 474 Scanning Fluorescence Detector
 Data Module

The quotations must comply with the following General Directions, failing which they will be deemed incomplete:

1. A statement of ***Compliance with Specifications*** should accompany the quotation.
2. The system should be able to guarantee a ***minimum Quantification Limit of 0.5 µg/Kg for Aflatoxin B1, B2, G1 and G2*** (S/N ? 10) using a Kobra Cell[®] Post Column Derivatization System and Fluorescence Detector.
3. The system should be able to guarantee a ***minimum Quantification Limit of 50 µg/Kg for Sudan I*** (S/N ? 10) at 474nm using UV- VIS Detector
4. ***Specific data*** regarding technical claims like accuracy, precision, carryover, etc should be submitted.
5. Complete ***warranty information*** should be provided.
6. Complete users list ***for the quoted system*** in India, with name of contact persons and telephone / email ids, should be provided.

Table 1: List of Specifications for the HPLC System

No.	Item	Specifications
1	Pump	Quaternary Gradient Solvent Delivery System capable of delivering constant and reproducible flow with no pulsation and accurate gradient over wide concentration range, with the following technical features: <ol style="list-style-type: none"> a. Capable of handling 1 – 4 solvents b. Flow rate range 0.05 to 5 ml/min, 0.001 ml/min increments

		<ul style="list-style-type: none"> c. Flow Precision ? 0.075% RSD d. Flow Accuracy ? 1% e. Automatic and continuous compressibility compensation f. Effective system delay volume <650?L, independent of back pressure, 1ml/min g. Gradient Profiles: 11 gradient curves, including linear, step(2), concave (4) and convex (4) h. Automatic dry and wet priming controllable from the pump's front panel and through software i. Flow ramping: 0.01 – 30 minutes, 0.1 min increments, to reach maximum flow rate j. Maximum operating pressure 5000 PSI k. Mobile Phase Composition Specs: <ul style="list-style-type: none"> /// Composition Range 0.0 to 100% in 0.1% increments /// Composition Accuracy ? 0.5% absolute, independent of back pressure /// Compositional Precision ? 0.15% RSD
2	Auto sampler	<p>Fully automatic Auto sampler and Auto injector, with the following technical features:</p> <ul style="list-style-type: none"> a. At least 100 vials capacity b. Vial capacity: up to 2 ml c. Vial access, injection volume, injection speed, calibration etc. fully controlled through software. d. Capable of multiple injections from the same vial. e. Sample delivery precision at least 0.5% RSD f. Sample carryover less than 20nL g. Fully programmable needle washing facility through control software h. Injection accuracy ? 1% i. Should have needle washing facility from internal and external side.
3	Degasser	Vacuum Degasser
4	Column Oven	Room Temperature to 50°C, programmable in 1°C increments
5	Columns	The following columns and accessories should be quoted:

		<ul style="list-style-type: none"> a. C-18 HPLC columns x 5 numbers b. C-8 HPLC columns x 2 numbers c. C-18 Guard columns x 20 numbers d. C-8 Guard columns x 5 Numbers e. All accessories for connecting columns and guard columns
6	Detector	<p>I. A High Sensitivity Fluorescence Detector with the following specifications:</p> <ul style="list-style-type: none"> a. Excitation Range 200nm to 900nm b. Emission Range 200nm to 900nm c. Bandwidth 15nm d. Wavelength accuracy ? 4nm, with ? 0.5nm reproducibility e. Sensitivity: S/N Ratio at least 300:1 f. Facility for Spectral storage and subtracting background spectra <p>A High Sensitivity UV Detector with the following specifications:</p> <ul style="list-style-type: none"> a. Working Range from 190 – 800nm b. Deuterium and Tungsten Lamps c. ? Accuracy ?? 1nm d. Time programming for wavelength, peak width, lamp on/off e. Noise level 0.75×10^{-5} AU at 474nm f. Self diagnostic features
7	Software	<p>32-bit software running on Windows OS, with full control over all instrumental aspects of the system, with the following technical features:</p> <ul style="list-style-type: none"> a. Multi-system capable. b. Capable of acquiring data from four detection channels in the LC system. c. Easy generation of system suitability information, S/N Ratio, calculation of Theoretical Plates, LOD/LOQ calculation etc. d. Should have comprehensive reporting facilities, including designing of customized reports.

8	Computer and Printer	A suitably advanced computer system for loading the instrument control software, with features necessary to connect to the instrument, should be quoted. The computer should have CD-Writing facility for data back up, and a suitable printer for generating reports.
9	Post Column Derivatization System for Aflatoxin	A Kobra Cell [®] (Rhone Diagnostics) Model K-01 is to be supplied together with the system.
10	Additional Accessories	<p>The following additional accessories for the system to be quoted, separate from the items normally shipped with the system:</p> <ul style="list-style-type: none"> a. Auto sampler vials 200 numbers (complete with vial caps and septa) b. Solvent filters 15 numbers c. Spare Auto sampler Needle, 1 number, of the same type shipped with the system d. One Rehodyne Injector with 10ul and 50ul loops for manual injection
11	Spares and Accessories	All spares and accessories required to maintain the pump, auto sampler and detector for a period of <i>2 years after warranty expiry</i> should be quoted. Itemized list of the spares with prices should be provided.

2. GC WITH ECD AND FPD

Quotations for a system with the specifications given in Table 1 may be submitted. The quotations must comply with the following General Directions, failing which they will be deemed incomplete:

1. A statement of **Compliance with Specifications** should accompany the quotation.
2. The system should be able to guarantee a **minimum Quantification Limit of 0.005 ppm** for Lindane with ECD and Ethion with FPD (S/N ? 10 for each).
3. **Specific data** regarding technical claims like accuracy, precision, carryover, etc should be submitted.
4. Complete **warranty information** should be provided.
5. Complete users list **for the quoted system** in India, with name of contact persons and telephone / email ids, should be provided.

Table 1: List of Specifications for the System

No.	Item	Specifications
1	GC System	A Capillary Gas Chromatographic (GC) System with Electron Capture Detector (ECD), Flame Photometric Detector (FPD) and Flame Ionization Detector (FID) and Autosampler is to be supplied.
2	Autosampler	<p>Fully automatic Auto sampler and Auto injector, with the following technical features:</p> <ol style="list-style-type: none"> 1. Split/Split less injection facility, with software control of split ratio 2. Maximum operating temperature of 400°C 3. Auto sampler with at least 100 vials capacity 4. Vial capacity: up to 2 ml 5. Vial access, injection volume, injection speed, calibration etc. fully controlled through software. 6. Capable of multiple injections from the same vial. 7. Sample delivery precision at least 0.5% RSD 8. Sample carryover less than 20nL 9. Fully programmable needle washing facility through control software 10. Injection accuracy ? 1% 11. Should have needle-washing facility from internal and external side.

3	Column Oven	<p>Column Oven with the following features</p> <ol style="list-style-type: none"> 1. Operating temperatures 4°C above ambient to 450°C 2. Temperature set point resolution ? 1°C 3. Maximum temperature rate 120°C/min 4. Maximum runtime 900 min 5. Temperature programming steps, peaks / plateaus: at least 6 / 7 6. Automatic column bleed compensation
4	Electronic Flow / Pressure Control	<p>Programmed Pneumatic / Flow controls with the following features</p> <ol style="list-style-type: none"> 1. Carrier flow through all inlets, column and detectors, and all auxiliary gases (like ECD makeup gas) should be controlled by the electronic flow control system 2. 0.01 increment of flow / pressure using the system 3. Complete software control of flow / pressure
	Detectors	<p>An Electron Capture Detector (ECD) with the following features:</p> <ol style="list-style-type: none"> 1. 400°C maximum operating temperature 2. Makeup gas: N₂ or Ar 3. Sensitivity: <0.008 ng/sec Lindane 4. Dynamic Range: 5? 10⁴ with Lindane <p>A Flame Photometric Detector (FPD) with the following features:</p> <ol style="list-style-type: none"> 1. At least 300°C maximum operating temperature 2. Phosphorus and Sulfur Filters 3. Sensitivity: <10 pg/sec Ethion <p>A standard Flame Ionization Detector (FID)</p>
	Columns	<p>Capillary Columns suitable for high-precision GC analysis of the following compounds, with documentation and application notes:</p> <ol style="list-style-type: none"> 1. Organochlorine Pesticide Residues 2. Organophosphorus Pesticide Residues

		<p>3. Pyrethroid Pesticide Residues 4. Volatile Oils</p> <p>Two columns of each type need to be included additionally.</p>
	Software	<p>32-bit software running on Windows OS, with full control over all instrumental aspects of the system, with the following technical features:</p> <ul style="list-style-type: none"> e. Multi-system capable. f. Capable of acquiring data from four detection channels in the LC system. g. Easy generation of system suitability information, S/N Ratio, calculation of Theoretical Plates, etc. h. Should have comprehensive reporting facilities, including designing of customized reports.
8	Computer and Printer	<p>A suitably advanced computer system for loading the instrument control software, with features necessary to connect to the instrument, should be quoted. The computer should have CD-Writing facility for data back up, and a suitable printer for generating reports.</p>
10	Additional Accessories	<p>The following additional accessories for the system to be quoted, separate from the items normally shipped with the system:</p> <ul style="list-style-type: none"> e. Required Filters and Regulators for carrier gas and other auxiliary gases should be quoted. f. Auto sampler vials 200 numbers (complete with vial caps and septa) g. Phosphorus Filter for FPD h. Spare Auto sampler Needle, 1 number, of the same type shipped with the system i. 10ul Hamilton Syringe for manual injection j. Ferrules, septa and any other accessories required to setup the ready-for-use system
11	Spares and Accessories	<p>All spares and accessories required to maintain the system, autosampler and detectors for a period of 2 years after warranty expiry should be quoted. Itemized list of the spares with prices should be provided.</p>

3. ELECTRONIC BALANCES

Quotations for two electronic analytical balances with the specifications given in Table 1 and 2 may be submitted. The quotations must comply with the following General Directions, failing which they will be deemed incomplete:

6. A statement of *Compliance with Specifications* should accompany the quotation.
7. *Specific data* regarding all technical claims should be submitted.
8. Complete *warranty information* should be provided.
9. Complete users list *for the quoted systems* in India, with name of contact persons and telephone / email ids, should be provided.

Table 1: List of Electronic Balance with 5-Digit Precision

No.	Item	Specifications
1	Electronic Analytical Balance	<ol style="list-style-type: none">1. Readability of 0.00001 g (0.01 mg).2. Compact design3. Weighing pan ? 80 – 100 mm4. Calibration of a frequently used weighing range using external weights5. Internal adjustment weight for precise results6. Maximum capacity at least 200g7. Capability of displaying weighing result in different units8. Features like Taring and % weighing9. Repeatability at least 0.03mg10. High grade, chemical resistant aluminium housing11. Backlit display12. Standard RS232C interface to connect to external PC13. Hook for weighing below the balance14. Glass draft shield with sliding doors, with free access from right, left and above.

Table 2: List of Electronic Balance with 2-Digit Precision

No.	Item	Specifications
2	Electronic Analytical Balance	<ol style="list-style-type: none">1. Readability of 0.01 g.2. Compact design3. Weighing pan ? 180 – 200 mm4. Calibration using external weights5. Internal adjustment weight for precise results6. Maximum capacity at least 1000g7. Taring facility8. Repeatability at least 0.01g9. Chemical resistant body10. Glass draft shield with sliding doors, with free access from right, left and above.

4. Specifications for Double beam UV-Vis Spectrophotometer

Wave length range	: 190-1100 nm
Spectral band pass	: 2nm
Stray light	: 0.05% or less
Wave length accuracy	: ± 0.4 nm
Wave length setting reproducibility	: ± 0.2 nm
Photometric mode	: Abs, Conc, %T, Single beam
Photometric accuracy	: ± 0.002 Abs (0~ 0.5Abs) : ± 0.004 Abs(0.5~ 1.0Abs)
Baseline flatness	: ± 0.002 Abs
Baseline stability	: Within ± 0.001 Abs/hr
Detector	: Silicon photodiode

5. Specifications for Stereoscopic microscope

1. Binocular tube
2. Magnification- Min 30 X
3. Stereomicroscope carrier for column 32 with course and fine focusing
4. Illuminator
5. Zoom control
6. Focussing control
7. Planchromat S 1.0 X objective

6 BIOSAFETY CABINET LEVELII

SI.No.	Particulars	Minimum Specifications
1.	Cabinet	Biological safety cabinet, vertical, sliding window with heat resistant transparent glass, 4'(1.22m) bench class II 100% exhaust
2.	Electrical	230V, 50 Hz Motor single phase
3.	Dimensions	Work area dimensions approx, 120 W x 60 D x 60 H (cm)
4.	Installation	To be installed on external wall to comply with Bio Safety Level 2. Certificate to this may be required
5.	Stand	Should have adjustable Modular Steel stand
6.	Interior	Interior to be made of stainless steel. The work tray should easily lift out of the work area without tools
7.	Filters	Two HEPA filters, one supply and one exhaust should be supplied and be accessible from front of unit (efficiency 99.97%)
8.	Alarms	Preferably audible/ visual alarms for low exhaust flow
9.	UV Monitor	UV lamp fitted, ordinary light tube, monitoring system for UV lamp, manometer fitted for air flow up to 15nm
10.	STANDARD	The apparatus should be ISO registered/ CSA Certified and NSF approved/ ANSI Standard 49 Class II (Laminar flow) bio-safety cabinet or equivalent International Standards approved.

7. Binocular Microscope with oil immersion objective

Binocular Microscope for routine microscopy, suitable for extended usage.

1.	BODY	Binocular, sturdy, stable base body with focus adjustment controls in a position comfortable for prolonged use. The Body should have a durable Finish.
2.	EYE PIECE	Paired, high quality, (the image of the object as seen through the binocular eyepiece should be well defined centrally in least 2/3 field of view), achromatic, wide field , 10x without in built pointer. The eyepiece should be aplanatic and have a minimum field number of 18. Diopter adjustment must be present for one / both eyepieces.
3.	OBJECTIVES	Three objectives: 10x, 40x, 100x, 10x and 40x objectives should have numerical apertures of at least 0.25 and 0.65 respectively. 100x should numerical aperture of at least 1.25 be of oil immersion and spring-loaded type. Unbreakable containers to the provided for storing the objectives. All objectives should be wide field, achromatic and par focal. Each objective should be engraved with a following information: - a) Name/ insignia of the manufacturer b) Magnification and numerical aperture c) 100x objective should be engraved with the word 'Oil' In the changing from one objectives to another or reintroducing the same objective by rotation of the nosepiece, the centre of the field should not appear displaced by more than 0.02 mm in the object plane.
4.	NOSE PIECE	Revolving nosepiece to accommodate a minimum of three objectives with positive stops. It should provide with ribbed grip for easy rotation mounted on a precision ball bearing mechanism. Any extra ports should be fitted with dust proof caps.
5.	STAGE	Uniformly horizontal, mechanical stage having dimensions of length 140 mm (± 20 mm) & breadth 140 mm (± 20 mm) with fine vernier graduations (minimum reading accuracy of 0.1 mm) . The stage should be provided with spring loaded slide holder for exact positioning of specimen/slide. It should be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. The stage should have ball bearing arrangement to allow smooth travel in transverse directions.

6.	SUB-STAGE CONDENSER	Abbe – type condenser or equivalent, numerical aperture 1.25 or better, focusable with rack and pinion arrangement incorporating an aspherical lens and an iris- diaphragm .
7.	SUB-STAGE ILLUMINATOR	<p>i) The system should have a built-in, variable, low voltage light source. the circuitry for the light source should include a constant voltage supply. The system should be provided with a step down transformer and on/off switch and intensity control. The lamp should be provided with a lamp socket which has the facility for easy replacement of the bulb. The housing of the light source should be such that it will prevent heating of the body of the microscope.</p> <p>ii) Power Supply</p> <ul style="list-style-type: none"> - Voltage: 220,50 Hz AC - Should have one on –off power cord with a 3 pin male plug <p>iii) The system should have an inbuilt protective/safety device to withstand fluctuations of voltage from 140V to 280V</p> <p>iv) A plano – concave mirror in fork mounting should be supplied which would be attachable to the base for field use</p> <p>v) The fuse for the halogen lamp should be easily accessible</p> <p>vi) The illuminator should have a built in field diaphragm for Kohler illumination</p>
8.	EYE PIECE TUBES	Binocular eyepiece tubes, inclined at 45 degrees, rotatable through an angle of 360 degrees, having inter-pupillary distance range of at least 55-70 mm.
9.	FOCUSING KNOB	Co-axial coarse and fine focusing knobs capable of smooth focusing movement over the full range of travel. The fine focusing movement should have sensitivity to microns or fine over the entire. focusing range .The focusing knob should be on the both sides and a safety stop safety should be provided.
10.	GENERAL	<p>i) All optical parts including objectives, eye pieces and prisms should have anti-reflective, anti- fungal coating.</p> <p>ii) All metallic parts should be corrosion, acid and stain proof</p> <p>iii) All separate parts of the microscope should have the manufacturer clearly indicated.</p> <p>iv) The supplier will supply the complete assembled microscope in a rigid box with a dust cover.</p> <p>v) An authorised list of accessories and spare parts, technical</p>

		brochure and users manual should be provided.
11.	SPARE PARTS	Spare parts as under : i) 100x oil immersion objective ii) Halogen bulb