



North-Eastern Hill University

Department of Agribusiness Management and Food Technology

Tura campus, Chandmari-794 002, West Garo Hills, Meghalaya
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No: TC/NEHU/ABMFT/Purchase-Ext-Project/2017-18/003-2

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SHORT QUOTATION NOTICE

Sealed quotations are invited from reputed manufacturers/authorized dealers/vendors for supply, installation & commissioning of following equipment required for the DBT-NER Project of Sasikumar.R Department of Agribusiness Management and Food Technology, NEHU Tura Campus, Tura, Meghalaya.

Items with specifications:

Sr. No	Name of equipment/machinery	Technical Specification	Quantity (No's)
1	Spray Dryer (Laboratory model spray drying plant, manufactured as per the GMP standards) includes PLC operating system, Drying Chamber cylinder and Cyclone in SS 316 grade)	<i>Water evaporation capacity 2.0 – 3.0 kg/ hr</i> <i>Feed rate with 30 % solid content w/w 3.0 kg/ hr</i> <i>Powder rate 1.0 kg/ hr</i> <i>Inlet temperature Ambient to 260 deg C max</i> <i>Outlet Temperature 70 - 100 deg C</i> <i>Flow between spray and hot gas Two Fluid</i> <i>Compressed Air Nozzle Systems</i> <i>Heat Source and heating Method Electric Air Heater</i> <i>Method of powder collection “Blown Down”</i> <i>powder collected under the cyclone – Single Point Discharge and alternatively Two Point Discharge i.e. Under the cyclone and chamber</i> <i>Material of construction SS AISI 316</i> <i>Atmospheric pressure 760 mm Hg</i> <i>Ambient temperature 30-40 deg .C Relative</i> <i>Relative humidity 50 %</i> <i>Power Rating 2900 W</i> <i>Voltage 200/230 V, 50–60 Hz</i> <i>Water Evaporative Capacity 2.0-3.0kg/hr</i> <i>Air Flow Max. of 35 cu. m./hr</i> <i>Motor Control Frequency Converter</i> <i>Max. Temperature Input 220 °C</i> <i>Heating Capacity 2300 W</i> <i>Heating Control PT-100, Fuzzy Logic, Control Accuracy ± 3 °C</i> <i>Interface Serial port RS-232 for all parameters</i> <i>Spray Gas Compressed air or nitrogen, 200–1000 l/hr, 5–8 bar</i> <i>Nozzle Diameter 0.7 mm Standard, 1.4 and 2.0 mm as accessories</i> <i>Nozzle Cap 1.4 mm and 1.5 mm diameter</i> <i>Mean Dwell Time 1.0–1.5 seconds</i> <i>Possible particle diameter range 1–25 µm</i> <i>Materials in contact with product Acid-resistant stainless steel,</i> <i>Dimensions L xWxH 60 x 50 x 110 cm</i> <i>Weight 48 kg</i>	1
2	Fermenter	<i>Glass autoclavable vessel for Bacterial</i>	1

		fermentation. Total Capacity – 6 liters Working volume: Minimum 1.1 Liters and maximum up to 4.0 Liters Touch Screen Controller – Screen minimum 7” Should be useable for Batch, Fed Batch and Continuous Process Rotation Speed: Range from 150 to 1,600 rpm Ports to be provided on Top Plate 7.5 mm Ø = 4 nos 10 mm Ø = 4 nos 12 mm Ø = 7 nos Stirrer with Rushton impellers Temperature control range up to 60°C Optical pO₂ sensor measurement and control – does not require polarization Digital pH measurement and control Antifoam control • Exit Gas Cooler function to prevent excessive losses of liquid from the vessel • Four pumps must be included. Acid, Base, Antifoam and Feed. All pumps should be configurable with both digital (Fixed-speed) and Analogue (Variable Speed) • Acid, Base & Antifoam Pump Performance : 0.0034 to 3.46 mL/min, • Feed Pump Performance : 0.017 to 17.16 mL/min • Gas flow rate using Two Mass Flow Controller one each for Air and Oxygen • Integrated pressure sensor for detecting blocked filter. • Multiple cascades for pO₂ control by means of stirrer speed, gassing rate and/or both. • Aseptic Sampling System using autoclavable sampler kit to achieve Zero dead volume • Facility for stand-alone system for data logging and export of data using USB without computer • Autoclavable pumps heads for easy startup of bioreactor after autoclaving. • Should include connections for Gravimetric feeding (To external Balance) • To include service kit and spares sensors for Optical DO probe	
3	Freeze Dryer	➤ Drying Performance 2kg or more in 24 hours. ➤ Refrigeration capacity should be more than ½ HP (0.4KW) ➤ Condenser coils should be in direct contact with vapor for better trapping ➤ Condenser coils should be 316L.	1

		➤ Ice Capacity minimum of 2.5kg ➤ Ice Condenser temperature minimum –55 deg C at ambient room temperature of 25 deg C. ➤ Ice Condenser Capacity 3.5 liters ➤ Graphic LC- Display showing process data like ice condenser temperature, process time, section time and vacuum.. ➤ Should have minimum 6 connections with individual control rubber valves. ➤ Equipped with hot gas defrosting facility ➤ Conversion of product temperature and vacuum according to the vapour pressure curve above ice.	
4	Encapsulator (Non-Sterile)	Power consumption max. 150 W Connection voltage 100 – 240 VAC Frequency 50 / 60 Hz Dimension (W x H x D) 32 x 29 x 34 Weight 7 kg Nozzle diameter of single (= core) nozzles 0.08, 0.12, 0.15, 0.2, 0.3, 0.45, 0.75 and 1.0 mm Nozzle diameter of shell nozzles for concentric system 0.2, 0.3, 0.4, 0.5, 0.6, 0.7 and 0.9 mm Droplet size range 0.15 to 2.0 mm Vibration frequency 40 to 6'000 Hz Electrode tension 250 to 2'500 V Heating 30 to 70 °C – Syringe pump rate – 0.01 to 50 mL/min Dead volume approx. 2 mL approx. 0.5 mL Pump rate by air pressure 0.5 to 200 mL/min Maximal allowed air pressure in the system 1.5 bar Reactor gross volume – 4.5 litre Reactor working volume – 2 litre Parts in contact with medium autoclavable Sterile working conditions limited full Material in contact with sample stainless steel, glass, silicone, PTFE Pollution degree 2 Environmental conditions For indoor use at temperature of 5 to 40 °C Max. relative humidity 80 % for temperatures up to 31 °C, and then linearly decreasing to 50% relative humidity at 40 °C	1
5	Vacuum Package machine	➤ Chamber size (w x l x h/mm):358 x 380 x 105 ➤ Sealing length (mm):305 ➤ Distance x/(mm):339 ➤ Vacuum pump (cbm/h):10 ➤ Power connection (v/ph/kW):230/1/0,63 ➤ Maximum bag (mm):250 x 350 ➤ Outer dimension (mm):422 x 510 x 647 ➤ Weight (kg):48	1

Warranty:

1. Installation, F.O.R Destination should be at Department of Agribusiness Management, NEHU Tura Campus, Tura-7940002, Meghalaya, India
2. Minimum one year against all manufacturing defects from the date of installation.
3. Warranty and maintenance service should be provided.
4. AMC for 2 years after warranty should be included.

Delivery:

1. Within 6 weeks from the purchase order received date.
2. GST as per GOI notification should be included.
3. Inclusive of all prices up to Dept. of Agribusiness Management & Food Technology, NEHU Tura Campus, Meghalaya

GENERAL TERMS & CONDITIONS:

1. No separate tender paper will be issued from the office; one should only download the specifications from the website.
2. The rates should be preferably quoted in Indian Rupee and FOR NEHU Tura Campus, West Garo Hills, Tura-794002, Meghalaya basis. Charges for clearing and transportation should be incurred by the supplier.
3. *Quotations should be accompanied by i) An EMD (in the form of Demand Draft) of ` 10,000/- (Rupees Ten Thousand) only drawn/pledged in favor of Joint Registrar, NEHU Tura Campus, payable at Tura.*
4. The rates should be exclusive of taxes and applicable tax % should be clearly indicated.
5. Quoted rates should be valid at least for a period of 01 year.
6. The rates should be quoted along with supporting documents of specifications and technical features and list of users.
7. The system must be installed at the laboratory, and after installation a basic training must also be provided by the supplier or their Indian counterpart without any additional costs.
8. All the quotations must be accompanied with supporting documents and / or literature.
9. Demonstration may be sought from the vendors for authentication of quoted specification.
10. Details of availability of after sales support will have to be furnished. After sales support directly from manufacturer and from Assam (Guwahati) will be preferred.
11. The University is exempted from paying Custom and Excise duty.
12. Proprietary items should be quoted with sole Manufacturer/Distributorship certificate.
13. Warranty/Guarantee period should be specifically mentioned in the quotation.
14. No Advance payment will be made.
15. Performance Bank Guarantee also has to be submitted for Major equipment of Indian origin, covering the warranty period.
16. Items of Foreign origin should have Insurance up to installation on site.
17. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
18. Quoted price should be inclusive of essential accessories and should be CIF NEHU Tura Campus.
19. Applications for release of EMD should be submitted to the Joint Registrar/ Department Head
20. Quotation should be submitted on or before at 02.00 PM on 8th May 2018 and open at 03.00 PM on same day, addressed to the Teacher in Charge, Department of Agribusiness Management and Food Technology, NEHU Tura campus, West Garo Hills, Tura-794002, Meghalaya.
21. The Quotation Notice No. and date should be clearly superscripted in the envelope/packet containing the quotation.

Sd/-
Teacher in Charge
Dept. ABM&FT, NEHU Tura Campus