

**DIRECTORATE OF SORGHUM RESEARCH**  
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)  
**National Agricultural Innovation Project**  
Rajendranagar: Hyderabad – 500 030  
Phone: 040-24015349, 040-24018799, Fax: 040-24016378

**ENQUIRY**

F. No: NAIP-57/2008-09/ST

Date: 23.08.2013

The Director, Directorate of Sorghum Research, Rajendranagar, Hyderabad – 500 030 invites sealed bids from eligible bidders say manufacturers / authorized dealers / stockiest for the purchase of the following equipments. Detailed Specifications at Annexure –I.

<b>S. No.</b>	<b>Brief description of goods</b>	<b>Quantity</b>
01	Cookie Making Unit (Planetary Mixer, Cookie Cutting Machine & oven)	1
02	Rancidometer	1
03	Coating Pan	1
04	Twin – Screw Extruder	1
05	Falling Water Apparatus	1
06	Water Activity Analyzer	1
07	Ribbon Blender	1
08	High Power Solar UPS for Power backup	1
09	Semoline making machine (Suji/rawa making line)	1

1. The last date for submission of quotation date **10-09-2013 time : 12:30 PM**

Opening of quotations date **10.09.2013 time : 01:30 PM**

All duties, taxes and other levies payable by the bidder (other than sales tax on The finished goods) shall be included in the item rate, Sales tax if any should be quoted separately.

\* Where ISI Certification marked goods are available in market, procurement should generally be limited to goods with those or equivalent marking only.

2. Government of India has received a credit from World Bank in various currencies towards the cost of National Agricultural Innovation Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotation is issued.

3. Quoted Price:

- (a) The bidder shall quote for items in the format of quotation attached.

@ Note: Format to be used when evaluation is to be done for all the items put together.

- (b) All duties, taxes and other levies payable by the bidder (other than sales tax on The finished goods) shall be included in the item rate, Sales tax if any should be quoted separately.
- (c) The rates quoted for each item shall be fixed for the duration of the contract and shall not be subject to adjustment.
- (d) Rates or partial quantity of an item is not acceptable.
- (e) Corrections if any shall be made by crossing out, initialing, dating and rewriting.
- (f) Telex or Facsimile quotations are not acceptable.

4. Each bidder must submit only one quotation.

5. Validity of quotations :

The quotation shall remain valid for a period not less than 45 days after the deadline fixed for submission of quotations.

6. Evaluation of quotations:

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e., which are properly signed, and conform to the terms and conditions and specifications in the following manner.

- (a) The evaluation will be done excluding the sales tax. If the bidder has included the sales tax in his quotation for the item rate, it will be treated as though it is exclusive of the sales tax and no down loading of sales tax will be made.
- (b) The evaluation would be done for all the items put together. The items for which no rates have been quoted would be treated as zero and the total amount would be computed accordingly. The bidder who has quoted for partial quantity of any one or more items(s) would be treated as non – responsive. Purchaser will award the contract to the responsive bidder whose total cost for all the items put together is the lowest.

7. Award of contract:

- (a) The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest price as per para 6 (b) above.
- (b) The Purchaser reserves the right at the time of contract award to increase or decrease the quantities of items indicated in para 2 above by 25% without any change in the unit price or any other terms and conditions.
- (c) The Purchaser prior to the expiration of the quotation validity period will notify the bidder whose quotation is accepted for the award of contract. The terms of the accepted offer shall be incorporated in the Purchase order.
- (d) Normal commercial warranty / guarantee shall be applicable to the supplied goods.
- (e) Payments will be made by electronically within 30 days, only on receipt of the stores in good condition.
- (f) Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of the contract.

We look forward to receiving your quotations and thank you for your interest in this Project.

Yours faithfully,

(Saroj Kumar Singh)  
Administrative Officer

FORMAT OF QUOTATION

Sl. No.	Brief description of goods/ equipments	Brief Specifications	Quantity	Unit	Unit Rate (Rs) in figures	Unit Rate (Rs) in words	Total amount in figures	Total amount in words
1.								
2.								
3.								
4.								
5.								
6.								

Gross total Cost : Rs.....(in figures)

Rs.....(in words)

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs.....(in figures) (Rs..... .. (in words) within the period specified in the invitation for Quotations.

We also confirm that the normal commercial Warranty / quarantee..... of months shall apply to the offered goods.

(Bidder)

Name : .....

Signature .....

Date.....

## SPECIFICATIONS &amp; OTHER TECHNICAL DETAILS OF THE ITEM

S. No	Name of the Equipment	Specifications	Quantity
01	Cookie Making Unit (Planetary Mixer, Cookie Cutting Machine & oven)	<p><b>Planetary Mixer</b> It should be have electronic version set of 3 Agitators, Scraper, Trolley and capacity should be 100Ltrs/40Kg batter. the features should be like variations in speed from 5- 100% of rated rpm achieved electrically, mixing time 8min/batch, fine quality texture of finished product and timer for uniformly in batches. Motor should be of standard brand make and warranty period should be preferably for 3 years.</p> <p><b>Cookie Cutting Machine(dough mould)</b> It should be with rotating head, dropping and wire cut. Should be fully automatic, tray size: 450X700mm and it may carry minimum 7 no. of nozzles. Motor and other parts should be of standard brand make and warranty period should preferably for 3 years</p> <p><b>Oven(Rotary)</b> It should be fully automation and steaming facility, heat exchanger fabricated with stainless steel sheet and pipes, helps to maintain the heat observed and also reduce burner ignition and consumption. Capacity should be 336bread/ load with 2 trolleys and diesel filter. Motor and other parts should be of standard brand make and warranty period should be preferably for 3 years.</p> <p><b>Note:</b> *Free installation and training to DSR staff's should be provided by the manufacturer/ supplier</p>	1
02	Rancidometer	<p>The instrument should be an automatically determine the oxidative stability of edible oils (fatty acids methyl esters, FAME) from sorghum and their products and should have complete control of all instrument functions data acquisition, evaluation, retrieval should be from software, with independent start of each measuring position directly, temperature range should be 50 to 220°C, with a step increase of 1°C, reproducibility of set temperature must +/- 0.2°C, robust conductivity cell which should be able to measure from 0 to 400 uS/cm with all electrical connection integrated in cover. Built-in membrane pump for gas supply and USB interface, fully 21 CFR part 111 complaint and GLP, validation function should be built in. Suitable standard brand make PC, printer and UPS back up should be provided along with the instrument. Warranty period should be 3 years.</p>	1
03	Coating Pan	<p>It should be capable with liquid spraying facility. It should be speed of deliver flavor 0.02.5 ltr/min Diameter of roller 720mm, length of roller 2.3/1.9M and speed of roller 35rpm. It should be facility of cubage of oil canister 60 ltr, temp of oil 30-50° C and max capacity of oil spray 6 ltr/min. Motor should be of standard brand make and warranty period should be 3 years.</p>	1

S. No	Name of the Equipment	Specifications	Quantity
04	Twin – Screw Extruder	<p>The instrument should be produce sorghum and sorghum based RTE/RTC food products. It should have to output from 2-25kg/hr and feed hooper should be 50 ltrs capacity with modular feed mixing facility, 6 numbers of die have to give for making different structure products. Food contact area and all the machine material should be food grade stainless steel. It should be a partition two way temperature controls (heating &amp; cooling) for entire process with 4 heating zone and temperature range should be ambient to 300°C. It should be electrical controller for screw rotational speed, temperature, water adding volume, pressure and rotational screw speed range is 0-500rpm etc., Motor should be of standard brand make and warranty period should be 3 years.</p>	1
05	Falling Water (Number) Apparatus	<p>Falling Number / Time System: For determination of Alpha amylase Activity in Grains &amp; flours. The device should be automatically measure enzyme activity in flours and wheat, boiling temperature, determines the malt amount to be added into the flours, calculates the mixing rates in flour and sorghum samples. System should be equipped with in built Water Tank, Direct display of Falling Number / Time, Programmable system with either Single or Dual sample Analysis. 230 VAC. Warranty period should be preferably for 3 years.</p> <p><b>Note:</b> *Free installation and training to DSR staff's should be provided by the manufacturer/ supplier</p>	1
06	Water Activity Analyzer	<p>The instrument should be capable to measure Water Activity in all kinds of food products especially in sorghum grains and their products. It should employ chilled Mirror Dew Point Technology for water activity analysis and should be supplied with cups and lids for testing samples and automatic temperature control of 15 to 50° C and should be supplied with different verification standards to check the functionality of the instrument at different intervals the instrument should have water activity range of 0.030 to 1.000aw and accuracy level should be +/- 0.003aw and measurement speed of less than 5min. The instrument should have software for data storage and also conform to NIST and 21CFR11 compliance. Suitable standard brand make PC, Printer and UPS back up should be provided along with the instrument. Warranty period should be 3 years.</p>	1
07	Ribbon Blender	<p>The instrument should be have capacity Min.1kg to Max.10 kg, Tank made of stainless steel 304 grade with ribbon blade and motor capacity 0.5 HP motor with Gear box and RPM 45</p> <p><b>Note:</b> *Free installation and training to DSR staff's should be provided by the manufacturer/ supplier</p>	1

**HIGH POWER UPS SPECIFICATIONS (15 KW)*****Solar Module Specification:*****Solar Online Hybrid Inverter With MPPT – Off grid type**

Photovoltaic module is to be packaged interconnected assembly of photovoltaic cells, which converts sunlight into energy.

PV Module Capacity: 250 Wp

PV Module type: Poly / Crystalline

Mounting arrangement for solar module: On Module mounting structure

Max. Temperature rise of cells under severe working conditions over Max, Ambient temp: 50 Deg C

Peak power voltage: above 29 V

Peak Power current: above 7 A

Open circuit voltage: above 35 V

Short circuit current (Isc): 8 or more

Mechanical Features: Structure should be toughened, contain low iron, high transmissivity from glass

Frame should be of anodized aluminum frame

**Type – FRP / ABS / Polycarbonate**

Construction: Dust, Water & Vermin proof

It should be provided with earthing, mounted on structure and IP 65 protected

***Specifications of Solar Inverter & Charge Controller***

Array Input: 240 V

Charge controller type: MPPT based

Battery voltage: 240 V DC

Inverter type: Stand Alones

Power Capacity: 15 kw Off grid type

Load Power factor: 0.8 lag to unity

Nominal voltage: 415 VAC Three phase

Regulation:  $\pm 5\%$

Frequency: 50 Hz ( $\pm 0.5$  Hz) in standalone mode

Waveform: True Sine wave

Duty: Continuous

Efficiency (at full load & nominal input voltage):  $> 85\%$

Operating Modes: Stand Alone & Grid Charging (First preference to Solar, second to Grid and third to Battery)

Working temperature & humidity: 0 to 40 Deg C temp. and up to 95% non-condensing RH

Enclosure Protection Grade: IP 20

Cooling: Forced Air

Rating	15 KW
Array Input	360V DC
Charger Controller Type	MPPT
Battery Voltage	96V DC
Battery Type	Tall Tubular
Max DC Charging current	52A
Inverter Type	Bi-Directional
Output Power Capacity	15 KW
Load Power Factor	0.8 lag to Unity

Nominal Output Voltage	240 V AC, 1 Phase
Regulation	+ / - 2%
Frequency	50 Hz (+/- 0.5 Hz) in Standalone mode
Waveform	True Sine Wave
Total Harmonic Distortion	< 3% max. for Linear load
Overload Capacity	125% for 4 min., 150% for 1 min.
Inverter	MOSFET based PWM with INSTANTANEOUS SINE WAVE CONTROL
Duty	Continuous
Inverter Efficiency	up to 90% at full load & nominal input voltage
Operating Modes	Stand alone / Grid Interactive / Offline
Acoustic Noise Level	< 55 dBA @ 1 meter
Service Temperature	0 to 40 C
Storage Temperature	-25 to 55 C
Relative Humidity	up to 95% (Non condensing)
Altitude	<1000 meter, above sea level (without derating)
Enclosure Protection	IP 20
Cooling	Forced Air
Colour	Gray
Cable Entry	Bottom (Rear side)
Appx. Weight in kg	250
LED indications	Array ON, Inverter UV / OV Battery Low.
	Inverter ON, Inverter Over Load.
	Grid ON, Inverter Over Temperature.
Protections	Input Surge Voltage, MCB at Input, Load Surge Current. Input Under Voltage, MCB at Output, Output Under Voltage.
	Input Over Voltage, MCB at Battery, Output Over Voltage. Low / High frequency, Battery Low Trip, Output Overload.
	Over temperature, Output Short Circuit. *Alarms are provided for all important protections.
	Inverter ON / OFF switch, Array blocking diode, Auto restart in case of overload shut down.
Optional Features	Manual bypass switch, Sleep mode with auto restart.
	RS 232 port for monitoring, PFC for Battery low pre alarm.
<b>LCD DISPLAY &amp; FAULT DISPLAY (OPTIONAL)</b>	
LCD Display	Array Current, Charger Temperature, Battery Voltage, Battery Current.
	Output Voltage, Output Current, (%) Output, frequency, Inverter Temperature.
	Grid Voltage, Array Voltage.
Faults Displayed on LCD	Output under voltage, Output over voltage, Inverter Overload, Over Temperature.
	Battery Low Pre Alarm, Battery Low trip, Battery over voltage.



Specifcaions for Suji/rava making line (grinding mill) for Jowar			
<b>1</b>	<b>Application Data</b>		
● Name of Feed Material	:	Jowar	
● Feed Size	:	6 mm & less	
● Product	:	Khichdi Rava	Upma Rava      Idli Rava
● Fineness Attainable	:	75-85% In between 8 and 30 Mesh BSS	30-40% In between 16 and 44 Mesh      30-40% In between 16 and 44 Mesh BSS
● Capacity at Feed Rate	:	200 Kgs / Hr.	200 Kgs / Hr.      200 Kgs / Hr.
● Moisture Content	:	Less than 7%	
● Brittleness (Breaks by)	:	* By little hammering	
● Other Properties	:	* Medium Abrasive	* Medium Hard      * Free Flowing
	:	* Non Hazardous	* Non Explosive      * Non Heat Sensitive
● <b>NOTE</b> : Fineness & Capacity will vary from Material to Material, Moisture Content in feed material, Type & Size of feed material.			
<b>2</b>	<b>Equipment Data</b>		
● Equipment Type and Model	:	<b>Hammer Crusher</b>	<b>Screen Type</b>
<b>3</b>	<b>Material of Construction of Equipment</b>		
● Contact Parts	:	<b>Made of / lined with / covered with Stainless Steel-304</b>	
● Non-Contact Parts	:	MS / CI Standard Supply	
● Grinding Elements	:	<b>Stainless Steel-304 Hammers / Liners / Screens</b>	
<b>4</b>	<b>Electric Motor Data</b>		
a ● Electric Motor Specification	:	Squirrel cage, totally enclosed, IP-55, 3 Phase	
	:	440 V	50 Cycles      Non-Flame Proof
b ● Electric Motors	:	HP	RPM      Make
1. Motor for Belt Conveyor	:	2	Geared Motor      Reputed Make
2. Mill Motor	:	10	2880      Reputed Make
3. Motor for RALV of PCS	:	1	Geared Motor      Reputed Make
4. Motor for Blower	:	3	2880      Reputed Make
<b>Total HP</b>	:	<b>16</b>	
<b>6</b>	<b>Scope of Supply</b>		
<b>Single Stage Grinding : Hammer Crusher</b>			
<b>A</b>	● <b>Belt Conveyor ( Closed Type ) - For feeding</b>		
	- Belt Conveyor complete with Hopper, Mounting Stand and Drive Accessories, as per standard supply		
	- A.C. Variable Frequency Drive		
<b>B</b>	● <b>Basic Mill</b>		
	- Hammer Crusher complete with Hopper, Grinding Elements (such as Hammers & Liners), Screens, etc., as per our standard supply.		
	- <b>Magnetic Device</b> ( 1800-2000 Gauss Capacity )		
	● <b>Pneumatic Conveying System</b>		
	- Mounting Stand to mount basic mill and motor, Anti Vibration Mountings Pads for mill and blower.		
	- Outlet connecting Pipes, Discharger, Flanges, Pipes, Bends, Gaskets, Flexible Sleeves		
	- V-Belts, V-Pulleys for motors, Protective Guards, Cyclone Collector, Ducting, Connectors, etc.		
	- Direct driven Blower with Mounting Frame and Motor		
	● <b>Rotary Air Lock Valve (To be fitted below cyclone)</b>		
	- Rotary valve with replaceable Teflon Tips, out board bearings		
	- Mounting frame to mount Rotary Valve and Motor		
	- Drive Transmission Accessories, Protective Guard		
	- Geared Motor		
	● <b>Open Type Dust Collector</b>		
	- Bottom outlet, set of Filter Bags, etc.		
	- Support Structure etc.		
<b>C</b>	● <b>Electric Motor</b>		
	- 10 HP x 2880 RPM Motor for Main Mill		
<b>D</b>	● <b>A.C. Variable Frequency Drive</b> for main Mill Motor		
<b>E</b>	● <b>Control Panel ( Free Standing, Non-compartmentalized )</b>		
	- Incoming with Voltmeter, Selector Switch, RYB Phase Indicating Lamp, Current Transformer, MCCB, Rotary Handle.		
	- Outgoing with Ampere Meter Overload Relay, Start-Stop Push Button Switch, Indicating Lamp, Auto		

	Sequential Start-Stop, MCCB for Mill Motor, MCB for Other Motors. - Emergency OFF Switch, Auto/Manual Selection Switch, Mimic	
<b>7</b>	<b>Scope of Supply</b>	
<b>A</b>	<b>Gyro Vibratory Sieving Machine</b> - Gyro Vibratory Sieving Machine complete as per standard supply having Two Deck with suitable Sieves, Pan Work, over size and under size outlets, mesh frame, quick release clamps, rubber mounts, amplitude selector, rigid mounting stand with adjustable mounting frame for motor, coupling, ball tray arrangement, special vibratory motor with top dust cover.	
<b>8</b>	<b>Other Items necessary to be provided by the vendor</b>	
	<ul style="list-style-type: none"> <li>● Electrical Accessories</li> <li>● Civil Work</li> <li>● Statutory &amp; Utilities</li> </ul>	<ul style="list-style-type: none"> <li>: Cables from Main Switch to Panel and from Panel to all motors.</li> <li>: Anchoring bolts to fix support structure.</li> <li>: As per requirement of Feed Material.</li> </ul>
<b>9</b>	<b>Price for the above</b>	
	S.No.	Description
	a	Belt Conveyor (item No.6-A)
	b	Hammer Crusher with Pneumatic Conveying System, Open Type Dust Collector, Rotary Air Lock Valve, Magnetic Device, etc., as per our above scope of supply (Item No.6-B)
	c	Electric Motor for main mill ( Item No.6-C )
	d	A.C. Variable Frequency Drive for mill motor (Item No.6-D)
	e	Control Panel (Item No.6-E)
	f	Gyro Vibratory Sieving Machine (Item No.7-A)
	g	Inclusive of Packing Charges
	c	Supervision of Erection & Commissioning
<b>9</b>	<b>Erection &amp; Commissioning ( for Mechanical ) work :</b>	
<b>10</b>	<b>Delivery : 12 weeks</b>	
<b>11</b>	<b>Warranty for 2 years</b>	