



भाकृअनुप- सरसों अनुसंधान निदेशालय  
ICAR-DIRECTORATE OF RAPESEED MUSTARD RESEARCH  
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F. No. 4-405/Sample/2015/

Dated: 07-01-2016

**Sub:- Genotyping by Sequencing of Brassica juncea core collection & trait-specific reference sets and SNP validation analysis service**

**Dear Sir,**

We have a requirement of the goods & services as indicated below, tender for which will be opened at 3.00PM on 30-1-2016 (date) and you are invited to submit your most competitive quotation for the same. All the relevant details are given below:

1. Description of the services required and the required quantity:

**i. As enclosed in annexure – 1**

2. Terms of delivery: Delivery at site, viz. **Directorate of Rapeseed Mustard Research, Bharatpur**
3. Delivery period for services: Within **1(one)** month from the date of the purchaser's signing the contract/order.
4. Erection/installation and commissioning (if required, depending on the goods ordered) are to be completed within **7 days** of delivery of the goods at site.
5. Terms of inspection by the purchaser's representative:
6. Training of purchaser's operator(s) for operating the goods ordered, as and if necessary: ----- operator(s) is/are to be trained for a period of ----- weeks at purchaser's premises/supplier's premises for successfully operating the goods purchased. The training shall be completed by -----

**Price structure:**

- a) The tender shall quote for the complete requirement of goods & services and for the full quantity as shown against a serial number in the List of Requirements in Annexure – 1. Unless otherwise specified in Annexure – 1, the tenders are, however, free not to quote against all the serial numbers mentioned in the List of Requirements (in case there are more than one serial number in the List of Requirements).
- b) The rates and prices quoted shall be in Indian Rupees only. All duties, taxes and levies payable by the supplier under the contract shall be included in the quoted price. The purchaser will not pay any such duties, taxes and levies separately.
- c) The rates and prices quoted by the supplier shall remain firm and fixed during the currency of the contract and shall not be subject to variation on any account, whatsoever, including statutory variations, if any.

**1. Receipts of goods & terms of payment:**

- a) Payment term for supply of goods, including erection/installation and commissioning (as and if applicable):

Immediately on receiving the goods at site, the purchaser will verify the quantities of the items supplied as specified in the delivery challan of the supplier and also check for superficial damage etc in the goods so supplied and issue a provisional receipt accordingly. If the goods supplied do not require erection/installation and commissioning at site, purchaser, within three working days of issue of the provisional receipt, will issue acceptance certificate (of the goods) to the supplier, provided the goods supplied also need erection/installation and commissioning, the purchaser will issue acceptance certificate within two working days, after successful erection/installation and commissioning. The supplier will then send its invoice along with the purchaser's acceptance certificate and other accompanying documents to the paying authority for payment.

The paying authority will release the full payment to the supplier as due in terms of the contract, within seven working days of receipt of supplier's invoice, purchaser's receipt certificate and other accompanying documents, provided the same are in order.

- b) Payment for training of purchaser, operator(s), if applicable:  
After release of payment to the supplier as per sub – para (a) above and after successful completion of training of the operator(s) in terms of the contract, the purchaser will immediately issue a certificate to the effect to the supplier. The supplier will thereafter send its invoice for training charges, along with the above certificate for the paying authority. The paying authority will release the payment to the supplier in terms of the contract within seven working days of receipt of supplier's invoice provided the invoice and the accompanying documents are in order.

1. Paying authority: -----

2. Liquidated damage clause:

If any time during the performance of the contract, the supplier encounters conditions hindering timely delivery of the goods, the supplier shall promptly inform the purchaser in writing the fact of the delay and the likely duration of the same. After receipt of supplier's communications, the purchaser shall decide as to whether to cancel the contract for the un-supplied portion after the existing delivery period, or to extend the delivery period suitably by issuing an amendment to the contract. If the supplier fails to deliver the goods and/or perform the services within the contractual delivery period for reasons other than circumstances beyond supplier's control (which will be determined by the purchaser) and the purchaser extends the delivery period, the purchaser will also deduct from the contract price, as liquidated damages, a sum equivalent to 0.5% (half percent) of the delivery price of the delayed goods or unperformed services for each week delay or part thereof until actual delivery or performance. The maximum limit of such deduction will, however, be 10% (10 percent) of the contract price of the delayed goods or services.

Further, during such delayed period of supply and/or performance, the supplier shall not be entitled to any increase in price or cost, whatsoever, on any ground. However, the purchaser shall be entitled to the benefit of any decrease in price and cost on any ground, whatsoever, of the goods & services, supplied during the period of delay.

The purchaser's letter (to the supplier, with copies endorsed to others concerned) extending the delivery period will be subject to the above conditions.

3. Warranty clause: -----

4. Dispute resolution mechanism:

If any dispute or differences arises between the purchaser and the supplier relating to any matter connected with the contract, the parties shall make every effort to resolve the same amicably by mutual discussions. However, if the parties fail to resolve the dispute or differences by such mutual discussion within 30 days, either the purchaser or the supplier may give notice to the other party of its intension to refer the same to arbitration. The arbitration shall commence thereafter. The arbitration shall be conducted by a sole arbitrator, who will be appointed by the Secretary, ICAR and the procedure to be followed in this respect will be as per the Indian Arbitration and Conciliation Act, 1996. The venue of the arbitration shall be the place from where the contract is issued.

5. You are also required to fulfil the following conditions and furnish the details as indicated in subsequent paragraphs.

- a) At the time of awarding the contract, the purchaser reserves the right to increase or decrease by up to 25%, the quantity of goods & services as specified in the List of Requirements, without any change in the unit price or other terms & conditions.
- b) Please furnish a certified copy of your latest ITCC (Income Tax Clearance Certificate).

- c) Please indicate if you are currently registered with any Govt. Organization and if registered, furnish all relevant details.
- d) Please state whether business dealings with you presently stand banned by any Government organization and if, so, furnish relevant details.
- e) A supplier shall not submit more than one quotation for the same set of goods.
- f) The supplier shall at all times indemnify the purchaser, at no cost to the purchaser, against all third party claims of infringement of patent, trademark or industrial design rights arising from the use of the goods or any part thereof, with respect to the goods quoted by the supplier in its offer.
- g) The quotation(s) as well as the contract shall be written in English language. All correspondence and other documents pertaining to the quotation(s) and the contract, which the parties exchange, shall also be written in English. The quotations and all correspondence and documents relating to the quotation exchanged between the bidder and the purchaser may also be written in Hindi language provided that the same is accompanied by an English translation, in which case, for the purpose of interpretation of the quotation, the English translation shall govern.
- h) The contract shall be governed by the laws of India and interpreted in accordance with such laws.
- i) The quotation/offer shall remain valid for acceptance for a period not less than 180 days after the specified date of opening of the offers.
- j) The quotations shall be sealed in an envelope. The envelope shall be addressed to the purchaser and it should also bear the tender enquiry No. and the words "DO NOT OPEN BEFORE 30-01-2016 (\*The time and date of opening of the tenders). This envelope will be duly sealed. The outer envelope will bear the full address of the purchaser. The supplier must ensure that it's tender (i.e. quotation), duly sealed as above, reaches the purchaser at least two hour before the time and date of opening of tenders. The supplier may, all its choice send the tender by registered post or by speed post. Alternatively, the supplier may also hand deliver the tender to the purchaser in which case the purchaser shall give the supplier a receipt, indicating the time and date of receipt of the tender.
- k) The tenders, which are received late by the purchaser, will be ignored. Further, the purchaser does not accept any liability and responsibility for the tenders in case the same are not properly sealed and marked and/or sent as above.
- l) The tenders which are received on time (as per Para 3 above), will be opened at purchaser's office at 3.00PM hours on 30-1-2016 (date). The purchaser will open the tenders in the presence of the tenderers' duly authorised representatives, who choose to attend the tender opening.
- m) The purchaser will evaluate and compare the quotations which are substantially responsive i.e. which are properly prepared and signed and meet the required terms, conditions, specifications etc. the purchaser will award the contract to the supplier whose quotation will determined to be responsive and offering the best evaluated price
- n) Not with standing the above, the purchaser reserves the right to accept or reject any quotation or annual the tendering process and reject all quotations at any time prior to award

of the contract, without assigning any reason, whatsoever, and without incurring any liability or obligation, whatsoever, to the affected tenderer or tenderers.

- o) Please submit your quotation accordingly in two bid system. You shall sign all the pages of your quotation. Your price quotation may be furnished in the format enclosed as Annexure – 3. You are also required to return this original tender enquiry (all the pages), as it is, duly signed by you on every page, for our record. You may retain a photocopy of this tender enquiry for your record.

Administrative Officer

**Enclosure:** Annexure -1 & 2.

**LIST OF REQUIREMENTS**

Sr.No.	Item	Qty.
1	<b>Genotyping by Sequencing of Brassica juncea core collection &amp; trait-specific reference sets and SNP validation</b>	<b>192 samples (190+2checks)</b>

**Technical specifications:**

- 1) Leaf tissue of each sample will be provided to the service provider - Total number of 192 samples.
- 2) Genotyping by Sequencing to be carried out using suitable enzyme(s) for obtaining maximum no. of SNPs in each sample.
- 3) Sequencing to be carried out on Illumina HiSeq or other platforms generating a minimum of 100bp long reads for each sample.
- 4) Minimum of 200 million reads has to be generated for each batch of 48 samples provided using 48 plex reaction.
- 5) Minimum 95% data should be Q20 filtered from the 200 million reads.
- 6) All the Raw data, Filtered data along with SNPs filtered at 5x should be provided for each sample.
- 7) Custom oligo synthesis of high quality SNPs selected from whole *B. juncea* genome and validation of 96 SNPs on 96 samples to be carried out using alternate platform like Sequenom, Fluidigm etc.
- 8) Results of SNP Validation is to be provided in the form of excel sheets with each specific alleles for every sample.
- 9) All the detailed steps and protocols followed, and outcomes (like genotype cluster-plots and high quality SNP allelic information of genotypes) obtained through SNP genotyping should be provided.

**10) Complete Bioinformatics analysis has to be carried out for GBS and SNP GENOTYPING ANALYSIS which includes:**

- a. Filtering the high quality reads from the RAW data.
- b. Assembly/Stacking of high quality filtered reads for into unique 64bp along with counts for each tag for each sample individually.
- c. 64bp tag to be mapped to the reference genome to mine high quality SNPs (upto 4 variant alleles per tag) for each of the 95 genotypes based on their physical positions.
- d. Genome wide SNPs at 5x coverage have to be provided.
- e. SNP calling has to be done at minimum 100x coverage.
- f. For each sample, a complete list of SNP markers alleles along with their depth of coverage has to be provided.
- g. Structural and functional annotation of SNP dataset is strictly required.
- h. Association mapping for different agro-morphological traits along with LD scores has to be carried out.

**Terms and conditions:**

- 1) The service provider should have good publication citing their name clearly for GBS services rendered in International journal.
- 2) Details of the projects successfully executed by the company/service provider on Genotyping by Sequencing in last five years have to be supplied with substantial evidence.
- 3) Time required from assignment of the project to completion should be specified in the technical bid (preferably within two months).
- 4) The company has to provide electronic and printed form of data output along with hard disc bearing the data.
- 5) Complete bioinformatics analysis/support is required till successful completion of the project.
- 6) Prices should be valid for a period of one year.
- 7) The service provider should attach a list of customers to whom service on similar aspect is provided with their contact details and feedback.
- 8) The service provider should give details of publications in reputed Journals /Acknowledgement by Scientist (minimum of three).
- 9) The service providers may be asked to do a technical presentation before a committee.
- 10) The service providers are expected to offer personalized service, training and support.
- 11) Application support in sample collection, sequencing and biological interpretation of data, statistical analysis, generating publication quality figures, charts and tables a per client requirement to be provided till publication of the result as well as during the project.
- 12) The service provider will be required to keep generated data confidential. An agreement to this effect will be signed
- 13) No advance payment will be made. Payment will be made within 30 days of completion of the work.
- 14) The service provider should be certified as per ISO standards and any other certification/authorization related to the genomics platforms should be provided and will be considered during bid.

**Special Instructions (if any): - The Tender duly completed in all respect along with EMD for Rs.13000/- (Rs. Thirteen thousand only) in the form of A/C. payee Demand draft drawn in favour of “ ICAR Unit, DRMR, Bharatpur” should reach at this office alongwith quotation/tender.**

**2. The Successful tender will have to deposit 10% of the value of total service/contract or Rs. 1,30,000/- (which over is more) as Security deposit at the time of award of contract/service.**

**Annexure -2**

**Format of Price Quotation**

Sr. No.	Description of goods & allied services	Specifications	Accounting unit	Quantity	Quoted unit price in Rupees		Total amount in Rupees
					In figures	In words	

**Grand Total Cost: -----**