

No. CRC/1/2022-23

20.07.2022

TENDER NOTICE

Sealed tenders are invited in the prescribed form from competent firms/persons for the supply of the following works under various projects at the Cocoa Research Centre with specifications as detailed below:-

Transcriptome analysis of four samples of cocoa

Technical Specifications to the work

- Sample pick up from cocoa research centre, Vellanikkara, RNA isolation, cDNA preparation, preparation of Illumina compatible library.
- Sequencing: Raw data of minimum 120Mb per sample by sequencing on 150X2 Chemistry using Illumina platform.
- Analysis: Data quality control by filtering reads containing adapter or with low quality, Tag clustering analysis, Differential expression analysis of genes among the samples, annotation of differentially expressed genes to pathways and interpretation of results.
- **Bioinformatics Analysis for Transcriptome/RNA Sequencing;**
 - Primary statistics report QA/QC results should be generated using FASTQC Tool(FastQC is a reliable quality control designed to help you verify the throughput sequence files and export the result in FastQ format.)
 - Read statistics reports
 - Alignment statistics report should be generated using HiSat Alignment Tool (Alignment program for mapping next generation sequencing)
 - HISAT (hierarchical indexing for spliced alignment for transcripts) is a highly efficient system for aligning reads from RNA sequencing experiments.
 - Differential Gene Expression Reports using DeSeq Tool(DESeq is an R package to analyse count data from high- throughput sequencing assays such as RNASeq and test for differential expression.)
 - Transcript annotation results (Gene ontology and Pathway Analysis) using Uniprot/KEGG Database
 - Under Gene ontology and pathway analysis the graphs for significantly enriched GO terms belonging to all three classes (GO-MF, GO-BP, GO-CC) should be given. Similarly, for pathways graph has to be plotted for significantly enriched transcripts assigned to different pathways.
 - Annotation is performed with frequently updated databases
 - Transcript wise expression matrix across all samples using HTSeq Tool (tool to quantify gene expression)
 - The tool is designed to deal with reads that align to or overlap with more than one feature. This tool helps for accurate read count generation.

- Heatmap generation using RScript Tool (Rscript is the **R interpreter** which helps in the sequential execution of R commands in the script file)
- Standard figures and graphs including Principle component analysis (PCA plots), volcano plots, assembly length distribution, distance based clustering and Venn diagram should be given
- Bioinformatics Analysis support should be given
 - The company should have good experience/ record in conducting such experiments before with proof of publications, purchase order and satisfaction certificate given in writing.

Delivery Time: 4-5 weeks.

A final compiled report has to be provided within 5 weeks.

Last date of receipt of Tender : 22-08-2021 at 2.00 pm
 Opening of Tender : 22 -08-2021 at 2.30 pm

Terms and Conditions

1. Tender form

The tender form may be downloaded from the Related Documents section in the following web link in the internet <http://www.kau.edu/tenders>. The cost of tender form will be accepted by way of DD in favour of Professor & Head, Cocoa Research Centre, CoA payable at SBI, Vellanikkara and should be enclosed along with Tender. The tender cost should be specified, while submitting the tender. The cost of Tender form is as follows:-

Cost of Tender Forms

Particulars	Cost (Rs.)
Supplies costing above Rs. 50,000/- upto Rs. 5,00,000/-	0.2 % of cost of tender rounded to the nearest multiple of 100 , subject to a minimum of Rs.500/- and maximum of Rs. 2000/-

2. Tenders shall be accompanied by Tender fee, GST and Earnest Money Deposit of 2.5% of the total rupee equivalent cost of the quoted items (subject to maximum of Rs. 50,000/-) by way of 3 crossed Demand Draft separately for GST, EMD and tender fee in favour of **the Professor & Head, Cocoa Research Centre, College of Agriculture, Vellanikkara** drawn on the State Bank of India, KAU Campus (Branch Code 70670). Cheques will not be accepted. While calculating the total offer amount for items where alternate options have been given, the cost of the costliest option alone need be considered. Where quantity requirements have not been specified in the Tender Notice, the cost of one unit may be reckoned for arriving at the EMD amount and **quote should be on per sample basis.**

3. The sealed cover containing the tender documents should be super scribed as **“Tender for works as per tender No. CRC/1/2022-23 dt: 20-07-2022”** and should be addressed to the Professor & Head, Cocoa Research Centre, College of Agriculture, K. A. U. P.O, Thrissur, Kerala – 680 656.
4. Tender shall be accompanied by an agreement as per format appended, executed on Kerala Stamp paper of face value Rs. 200/-. The format of the agreement is available for download from the Related Documents section in the following web link in the internet <http://www.kau.edu/tenders>.
5. Late and incomplete tenders and tenders without EMD and agreement in Kerala stamp paper will not be accepted.
6. Firms who are exempted from payment of EMD should furnish copy of the currently valid certificate from the Store Purchase Department, Govt. of Kerala.
7. Selected firms will have to furnish a security deposit of 5% of the order value and execute another agreement in Kerala stamp paper worth Rs. 200/-. Security deposit will be accepted in the form of DD, Term Deposit Receipt or Bank Guarantee favouring **the Professor & Head, Cocoa Research Centre, College of Agriculture, Vellanikkara**.
8. The cost of the item, tax and other charges should be separately stated for each item. The items should be supplied at our premises.
9. We are exempted (regd. with DSIR) from payment of customs and excise duty for our procurements and hence prices quoted should be exclusive of these. Prices inclusive of taxes and installation charges, if any, may be indicated. We shall provide the necessary forms and certificates as required.
10. If any unexpected holiday occurs on the date of opening of tender, the tender will be opened at the same time on the next working day.
11. Period of firmness of the quoted prices should be clearly stated in the offer.
12. The undersigned reserves the authority to accept or reject any or all of the offers for any particular item without assigning any reason whatsoever.

All the rules and regulation applicable to Government Tenders will be applicable to this tender also.

Sd/-

Professor & Head
Cocoa Research Centre, Vellanikkara
Kerala Agricultural University