

AMENDMENT 1

Request for Quotation (RFQ) for Services of Metagenomic Sequencing
AAFC, Beaverlodge Research Farm

Solicitation Number: 01R11-21-C017

This solicitation amendment is issued to make changes to the bid documents as follows:

1. Appendix B, Statement of Work

Removed "Sequencing Option - Hiseq4000 PE 150" from the SOW, as equipment is phasing out in the near future.

2. Appendix D, Evaluation Procedures & Criteria

Removed "Sequencing Option - Hiseq 4000 PE 150" from 2.0 Mandatory Requirements Section.

3. Appendix F, Bid Document

Inserted a "Number of Samples Column" in the bid tables for bidders to insert their pricing based on volume instead.

DELETE: Appendix B, Statement of Work, Appendix D, Evaluation Procedures & Criteria and Appendix F, Bid Document in its entirety.

REPLACE: with the attached Appendix B, D and F, which includes the above changes.

Bidders shall use these revised documents for mandatory bid submission requirements and to submit their bid pricing on.

All other terms and conditions of the RFQ remain unchanged.

METAGENOMIC SEQUENCING – BEAVERLODGE

1. BACKGROUND:

Agriculture and Agri-Food Canada (AAFC), Beaverlodge Research Farm requires metagenomic sequencing for honey bee microbiome studies to meet deliverables of the Apicultural program. In particular, those associated with the multi-year collaborative project *BeeCSI: Omic Tools for Assessing Bee Health* that aims to develop improved diagnostic tools for increasing bee health and the sustainability of beekeeping and crop pollination. Since AAFC does not have the capability to perform shotgun metagenomics sequencing in-house at the desired throughput and depth; an external service provider is required.

2. OBJECTIVE:

AAFC requires the services of a Contractor to conduct shotgun metagenomic sequencing of honey bee gut macerate samples. The Contractor will be required to provide the labour, equipment, supplies and lab space necessary to perform metagenomics sequencing of samples provided by AAFC.

3. SCOPE OF WORK:

The Contractor must have a laboratory located in either Canada or the United States where AAFC can submit their honey bee samples to.

To carry out the work, the Contractor must be able to conduct the sequencing listed below.

Sequencing options that must be available for this service:

- NovaSeq 6000 S4 PE150 sequencing

AAFC expects sequencing analysis will be required at least two (2) times per year with sample sets of varying size (50 - 350) submitted each time.

The Contractor shall:

- 1) receive honey bee gut macerate samples;
- 2) perform DNA extraction and DNA quality control;
- 3) prepare DNA libraries and perform library quality control;
- 4) perform shotgun metagenomic sequencing:
 - a. with an Illumina NovaSeq 6000 instrument to obtain no less than forty (40) million paired end reads per sample, or;
 - b. to obtain no less than four (4) million paired end reads per sample;
- 5) deliver sequencing data in fastq.gz format by electronic means.

4. APPROACH AND METHODOLOGY:

The Contractor shall follow a generally recognized methodology for DNA extraction, library preparation and metagenomics sequencing that will deliver no less than 40 million paired end reads per sample, that are in line with methodology published in the scientific literatures (i.e. Zaheer et al. Impact of sequencing depth on the characterization of the microbiome and resistome. Sci Rep 8, 5890 (2018). <https://doi.org/10.1038/s41598-018-24280-8>)

5. DELIVERABLES:

Sequencing data results shall be delivered **within 14 weeks** of the Contractor receiving the samples from AAFC. Each sample set shall be invoiced upon AAFC receiving the data results.

The data shall be provided in FASTQ.gz format and files must be readily accessible through a server or website for no less than 3 months upon completion of analysis.

6. DURATION:

From the **Date of Contract Award** to **March 31, 2021**, with an option to extend for up to Three (3), additional One (1) year options.

7. DISPOSAL OF SAMPLES:

Disposal, if required, of all samples is the responsibility of the Contractor and must be in accordance with applicable Federal, Provincial, Territorial and Municipal Environmental Safety Regulations and Legislation. If samples are requested to be returned to the Project Authority or Designate, costs to package and return them will be reimbursed by AAFC as disbursements (at actual cost with no mark-up). Invoices must be supported with receipts for these charges.

8. RETESTING:

Any cost resulting from retesting that is required as a result of Contractor damage or adulteration to samples during handling and storage at the Contractor's location will be the responsibility of the Contractor. If the quality of the sequencing run is inadequate, for example if results contain reads shorter than 90 base pairs long in more than 20% of the data from a given sample, any cost resulting from retesting will be the Contractor's responsibility. Alternatively, if retesting is due to errors made by the Project Authority or Designate, then they will be responsible for the cost associated with repeating the analysis. There also may be times when AAFC will request the Contractor to investigate and rectify any discrepancies that may be discovered to their satisfaction. In this case, AAFC will be responsible for any costs.

9. CONTRACTOR'S RESPONSIBILITY:

The Contractor will be responsible to provide status updates to the AAFC Project Authority or Designate by email or telephone to discuss methodologies, timelines, progress, issues, etc., as they arise during the Work.

10. AAFC RESPONSIBILITY AND SUPPORT:

AAFC is responsible to provide honey bee samples ready for DNA extraction and metagenomic sequencing.

All costs to ship these samples to the Contractors lab will be AAFC's responsibility.

11. RISKS AND CONSTRAINTS:

The current COVID-19 situation could affect the ability of AAFC or the Contractor to meet deliverables.

TECHNICAL BID SUBMISSION

It is essential that the elements contained in the Bid Submission be stated in a clear manner and in sufficient depth to allow for evaluation by the evaluation team.

1.0 METHOD OF SELECTION – LOWEST COST (ONCE MANDATORY REQUIREMENTS HAVE BEEN MET)

- 1.1 The evaluation process is designed to identify the most qualified contractor to provide services as stipulated in the Statement of Work (Appendix B).
- 1.2 This section comprises the detailed Bid Submission requirements that will be used to evaluate Bidders' responses to the RFQ.
- 1.3 The **mandatory requirements under Section 2.0** will be evaluated on a compliant/non-compliant basis. Bid Submissions must include the necessary information to demonstrate this compliance. To be considered Compliant, a Bid must meet all mandatory requirements specified in section 2.0 below.
- 1.4 The selection of the responsive Bid will be made on the basis of the **LOWEST PRICE** for the financial bid.
- 1.5 The price of the Bid will be evaluated in CANADIAN DOLLARS, Applicable Taxes excluded, FOB destination for goods/services, Customs Duties and Excise Taxes included.
- 1.6 Failure of a Bid to provide information in sufficient detail and depth to permit evaluation against the identified criteria may render a Bid non-responsive. **All Bidders are advised that only listing experience without providing any supporting data to describe where and how such experience was obtained will not be considered to be “demonstrated” for the purpose of the evaluation. All professional experience should be fully demonstrated in the Bid Submission (i.e., dates, number of years and months of experience).**
- 1.7 The Bidders acknowledge and agree that Canada is not responsible to search for, and therefore evaluate, information that is not properly referenced or is not otherwise provided in accordance with the Bid Preparation Instructions in Part 2, Article 3.0.
- 1.8 Bidders shall not place any conditions or make any assumptions that attempt to limit or otherwise modify the Scope of Work pursuant to the Statement of Work (Appendix B).

2.0 MANDATORY REQUIREMENTS

Failure to comply with any of the mandatory requirements list below will render the Bid Submission non-compliant and the Bid will receive no further consideration.

The Bidder is requested to identify with their bid where the information can be found in the bid (i.e.: identify the page / project number, etc.).

2.1 TECHNOLOGY CERTIFICATION

The Bidding Company shall certify that they own the equipment to conduct the sequencing.

To demonstrate this, the Bidder must complete and provide the certification below, by **indicating the Model Number and Year of Equipment** they own.

<u>EQUIPMENT TYPE:</u>	<u>MODEL NUMBER</u>	<u>YEAR</u>
Illumina NovaSeq 6000:	_____	_____

I, the Bidder, submitting this Bid Submission, certify that I in fact have the above equipment to undertake the work for AAFC.

_____	_____	_____
Printed Name	Signature	Date

2.2 LABORATORY CERTIFICATION

The Bidding Company shall have a laboratory located in either Canada or the United States where AAFC can submit their honey bee samples to.

To demonstrate this, the Bidder must **provide the address of their laboratory** where AAFC can send their honey bee samples for sequencing analysis.

Laboratory Location: (Indicate Postal Address) _____
(Indicate City/Country) _____

_____	_____	_____
Printed Name	Signature	Date

2.3 EXPERIENCE

The Bidding Company shall have recent experience **within the past three (3) years** from date of posting of this solicitation (*November 19, 2020*) with Research Projects conducting shotgun metagenomic sequencing using Illumina NovaSeq instruments.

To demonstrate this, the Bidder must provide **one (1) project where they have used Illumina NovaSeq to conduct shotgun metagenomic sequencing in the last three years;** which demonstrates their capability to prepare samples and show successful completion of shotgun sequencing analysis completed for clients.

* If more than one project is submitted; only the first one will be evaluated.

Project Descriptions for each project must include the following items to demonstrate experience:

- a. Project Title;
- b. Client Organization Name;
- c. Project Description (includes supporting data such as what and how);
- d. Project Duration (start and completion date) (mm/yyyy to mm/yyyy).

3.0 FINANCIAL BID

3.1 The Bidder must complete the Bid Table in Appendix F which will form the Financial Bid.

3.2 Financial Bids will be accessed as follows:

Provided all MANDATORY CRITERIA are met, lowest price will be determined by:

Step 1 - For each line item - Estimated # of Units (A) x Unit Price (B) =
Extended Cost (C)

Step 2 - Aggregate of Extended Totals (for all four periods) = Your Evaluated Offer

3.3 Taxes

Note that any applicable taxes will not be included in the evaluation process.

4.0 DETERMINATION OF SUCCESSFUL BIDDER

Determination of the successful Bidder will be determined by ranking the Bidders according to the total price of their bid. The lowest responsive bid for all four (4) periods in the bid document will be recommended for contract award.

AAFC is not prepared to accept separate prices for any other costs. All costs associated with the work must be included in the Firm Unit Price asked for (excluding applicable taxes).

Column B (Unit Price Offered) and Column C (Extended Cost) must be completed with a dollar value for all line items or your Offer may be considered non-compliant.

The estimates provided in Column A will be used for cost evaluation purposes only and do not constitute a guarantee or commitment of work on behalf of Canada. Actual usage may vary from amounts shown below for each year.

PRICING FOR INITIAL CONTRACT PERIOD – Upon Contract Award – March 31, 2021

MICROBIOME SEQUENCING OF HONEY BEE GUT SAMPLES					
Item	Description	Number of Samples	Estimated # of Units (A)	Firm Unit Price Offered (CDN\$) (B)	Extended Cost (C) = (A x B)
1.	DNA extraction and DNA quality control (per sample)		200	\$_____/Sample	
2.	DNA Library preparation and library quality control (per sample)		200	\$_____/Sample	
3a.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000 instrument to deliver no less than 40 million paired end reads per sample	50 - 150	150	\$_____/Sample	
4.	Shotgun Metagenomic Sequencing to obtain no less than four (4) million paired end reads per sample		50	\$_____/Sample	
Total Cost for Initial Contract Period: (T1) =					T1

PRICING FOR OPTION YEAR ONE (1) – April 1, 2021 – March 31, 2022

MICROBIOME SEQUENCING OF HONEY BEE GUT SAMPLES					
Item	Description	Number of Samples	Estimated # of Units (A)	Firm Unit Price Offered (CDN\$) (B)	Extended Cost (C) = (A x B)
1.	DNA extraction and DNA quality control (per sample)		400	\$_____/Sample	
2.	DNA Library preparation and library quality control (per sample)		400	\$_____/Sample	
3a.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000 instrument to deliver no less than 40 million paired end reads per sample	50 - 150	50	\$_____/Sample	
3b.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000 instrument to deliver no less than 40 million paired end reads per sample	151 - 350	350	\$_____/Sample	
4.	Shotgun Metagenomic Sequencing to obtain no less than four (4) million paired end reads per sample		50	\$_____/Sample	
Total Cost for Option Year One (1): (T2) =					T2

PRICING FOR OPTION YEAR TWO (2) – April 1, 2022 – March 31, 2023

MICROBIOME SEQUENCING OF HONEY BEE GUT SAMPLES					
Item	Description	Number of Samples	Estimated # of Units (A)	Firm Unit Price Offered (CDN\$) (B)	Extended Cost (C) = (A x B)
1.	DNA extraction and DNA quality control (per sample)		350	\$_____/Sample	
2.	DNA Library preparation and library quality control (per sample)		350	\$_____/Sample	
3a.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000	50 - 150	50	\$_____/Sample	

	instrument to deliver no less than 40 million paired end reads per sample				
3b.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000 instrument to deliver no less than 40 million paired end reads per sample	151 - 350	300	\$ _____ / Sample	
4.	Shotgun Metagenomic Sequencing to obtain no less than four (4) million paired end reads per sample		50	\$ _____ / Sample	
Total Cost for Option Year Two (2): (T3) =					T3

PRICING FOR OPTION YEAR THREE (3) – April 1, 2023 – March 31, 2024

MICROBIOME SEQUENCING OF HONEY BEE GUT SAMPLES					
Item	Description	Number of Samples	Estimated # of Units (A)	Firm Unit Price Offered (CDN\$) (B)	Extended Cost (C) = (A x B)
1.	DNA extraction and DNA quality control (per sample)		150	\$ _____ / Sample	
2.	DNA Library preparation and library quality control (per sample)		150	\$ _____ / Sample	
3a.	Shotgun Metagenomic Sequencing using an Illumina NovaSeq 6000 instrument to deliver no less than 40 million paired end reads per sample	50 - 150	150	\$ _____ / Sample	
4.	Shotgun Metagenomic Sequencing to obtain no less than four (4) million paired end reads per sample		20	\$ _____ / Sample	
Total Cost for Option Year Three (3): (T4) =					T4

Total Cost for Initial Contract Period (T1) _____

Total Cost for Option Year One (1) (T2) + _____

Total Cost for Option Year Two (2) (T3) + _____

Total Cost for Option Year Three (3) (T4) + _____

TOTAL BID COST for all periods (T1 +T2 +T3 +T4) = _____

Supplier to indicate:

Bidding Vendor / Company Name: _____

Signature: _____

Date: _____