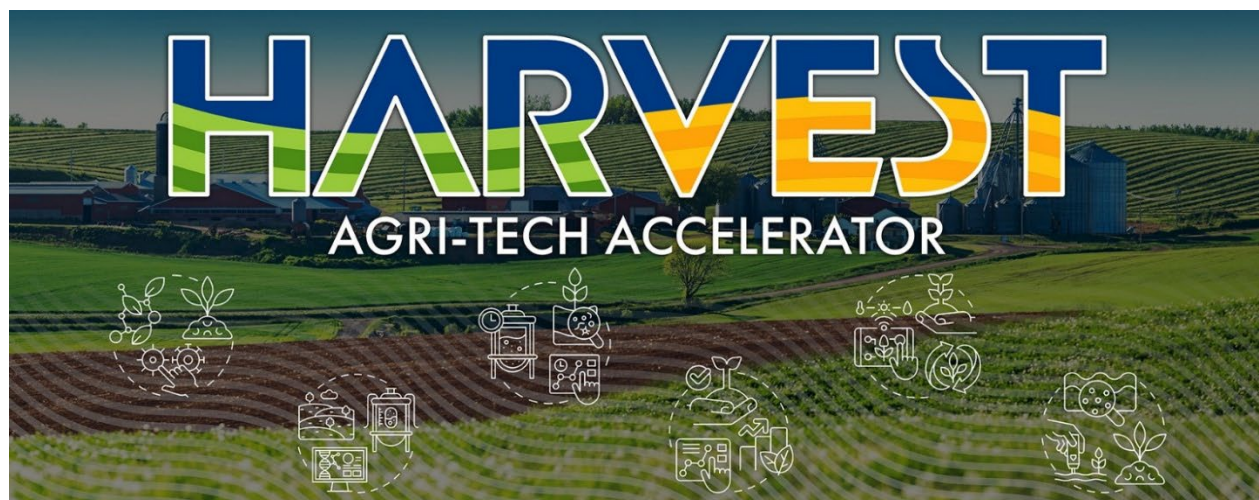


Ontario Genomics, Genome Prairie, and Genome Alberta Present:



# Harnessing Agriculture for Research, Value-add Environmental Solutions, and Technology

*Growing Smarter with Biotechnology*

## HARVEST – Program Guide

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## Overview

Harnessing Agriculture for Research, Value-add Environmental Solutions, and Technology (HARVEST)<sup>1</sup> is a nation-wide funding competition supporting innovative life sciences and biotechnology companies **in Canada** that are driving commercialization in technology advancements across agriculture and agri-food value chains.

HARVEST will fund innovative projects that advance clean technologies measurably reducing greenhouse gas (GHG)<sup>2</sup> emissions without reducing productivity. The program encompasses a broad range of life science applications, including genomics, biotechnology, metabolomics, engineering biology, precision fermentation and best production practices. **Companies are expected to co-fund a proposed project with their own financial resources.**

Ontario Genomics, Genome Prairie, and Genome Alberta are combining our collective expertise in genomics, agriculture, and food biotechnology to support companies seeking to innovate and advance commercialization with a commitment to environmental responsibility.

The program is divided into two streams, Primary Agriculture Clean Technologies (PACT)<sup>3</sup> and wasteCANcreate (wCc)<sup>4</sup>, to best leverage the strengths of each participating Genome Centre, and to most effectively address national needs for improvements in primary agriculture and waste valorization.

There will be a **1-hour webinar March 2<sup>nd</sup> at 2:30PM EST** to review the program guide ending with a Q&A to help clarify any questions that potential applicants may have. The webinar will be recorded and made available on the HARVEST website for those who are unable to attend the live session.

<sup>1</sup> Harnessing Agriculture for Research, Value-add Environmental Solutions, and Technology: May refer to either the program itself or to the managing collective including Ontario Genomics, Genome Prairie, and Genome Alberta.

<sup>2</sup> Greenhouse gas emissions: Carbon dioxide, methane and nitrous oxides emitted as a result of human activities such as agriculture.

<sup>3</sup> Primary Agriculture Clean Technologies: Bio-based tools or practices that reduce environmental impacts and improve efficiency in on-farm production activities like growing crops and raising livestock.

<sup>4</sup> wasteCANcreate: Reusing agricultural or food-processing by-products and side streams to create new or improved bio-based products by applying scalable biological or technological solution.

## **Project Streams**

This call for projects consists of two funding streams: PACT and wasteCANcreate (both outlined below). When selecting the stream you wish to apply for, be aware there may be separate application forms for each stream with distinct criteria. If you are unsure of which stream to apply for, contact us for assistance (contact emails provided below).

### **1) Primary Agriculture Clean Technologies (PACT)**

Primary agriculture clean technologies are tools and practices that reduce environmental impact while improving efficiency in farming, ranching, and other on-farm production activities. They are innovations that improve the environmental footprint of primary agricultural production without sacrificing productivity. This includes:

- Improvements in crop and livestock production
- Greater GHG efficiency
- Better abiotic or biotic stress resistance
- Precision agriculture
- Soil and nutrient management technologies
- Systems that cut greenhouse gases, water use, and waste at the source of food production

### **2) wasteCANcreate**

Focused on upcycling or reusing common agricultural and/or food and beverage processing sidestreams and by-products to improve existing processes and commercialize new bio-based products. Projects within wasteCANcreate will scale biological solutions, such as microbes (e.g., bacteria, yeasts, microalgae) and/or enzymes, to upcycle sidestreams into valuable products. Projects will be collaborative with feedstocks providers, technology developers, and potential end users working together to de-risk these technologies. This includes:

- Improve microbes for sidestream conversion
- Integrating biologically converted feed stocks into existing production streams
- Scaling up a bio-based product
- Optimize enzymatic treatment of sidestreams

## Program Objectives

HARVEST has been designed to:

- Support Canadian Companies
- Strengthen Canada's agriculture and food economy by integrating and expanding bio-based technologies
- Support the commercial success of Canadian products, manufacturers, and producers
- Drive development of less GHG intensive Canadian agricultural production without reducing productivity
- Position Canada as a leader for the creation, growth and scaling of biotechnology innovation in the global agri-food sector

HARVEST is **not** intended to fund:

- Academic Institutions except if/when contracted by the company as a partner in the project
- Fundamental research
- Market research
- Commercial launches of already-developed technology
- Patent enforcement or litigation
- Projects, project components or service provision (e.g. routine analyses or certain types of trials) that would normally be funded solely by the company

## Expected Outcomes

### Environmental

- Innovations with measurable increases in agricultural GHG efficiency without reduced productivity
- Reduce GHG emissions over the agri-food sector
- Reduce agricultural waste through byproduct utilization, reuse, and upcycling
- Other environmental or social benefits including improved:
  - Soil health
  - Biodiversity
  - Sustainable pesticide use
  - Water and nutrient use efficiency
  - Crop and livestock resilience to the effects of climate change
  - Mitigation of GHG emissions from food processing

## Commercial

- Commercial development of an innovation with potential to measurably reduce GHG emissions from agriculture without reducing productivity
- Integration or reuse of agriculture or food/beverage side streams into existing processes
- Scaling of bio-based products
- Improvement of agricultural or food manufacturing processes
- Create value for the applicant, their partners, producers and processors across Canada
- Greater input use efficiency for producers

## Life Cycle Assessment

A key component of both the PACT and wasteCANcreate HARVEST streams is the performance of a comprehensive Life Cycle Assessment (LCA)<sup>5</sup> for the work undertaken during the program. Projects will use their LCAs to demonstrate the environmental benefit of their idea, research, or process benchmarked against industry relevant baselines following a standard framework, which will be provided by HARVEST.

- HARVEST will organize an introductory webinar to familiarize project teams with the LCA process.
- Project teams will develop an initial LCA, data management plan and final LCA to be delivered at the project's end.
  - The initial LCA will provide a baseline upon which the project will aim to improve.
  - The final LCA will show the improvements to environmental impact that were produced through the project. This will provide the company with a strong, data-driven output that shows broad environmental impact improvements, de-risking their technologies for further commercialization.
- LCAs will be required to meet minimum requirements designated by the HARVEST program.
- Projects will be required to choose one of the following options to complete their LCA:
  - Utilize internal resources with expertise in LCA modelling (may require additional documentation)
  - Utilize an LCA service provider approved by HARVEST

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<sup>5</sup> Life Cycle Assessment: A method for assessing the environmental impacts of a product, process, or service across all stages of its life, from raw material extraction to end-of-life and across multiple impact factor categories.

## Company and Partners

For this competition, a “Company” is a Canadian For-Profit Enterprise (FPE) with an economic interest in developing an idea, research, or process into a commercial application. Companies must satisfy specific requirements as to ownership, control, and independence. The requirements are detailed in Appendix A.

While not required to apply for HARVEST funding, companies are welcome to engage with partners including academic institutions for the provision of co-funding, expertise, and other resources. It is important to understand that while partner companies/institutions do not need to be Canadian based, **all funding, including co-funding, must be spent within Canada**. Co-funding, technical, and support partners are to be disclosed during the full application.

## Assessment Criteria

Applications to HARVEST will be assessed on the following criteria.

### For all HARVEST applications

- Applicant must be a Canadian for-profit enterprise (see Appendix A).
- All funded work must happen within Canada.
- The project supports the invention, development or commercialization of a life science/biotechnology-based, or -enabled, innovation with a clearly articulated market opportunity.
- Additional partners are not mandatory but may strengthen a proposal (e.g. co-funding partners such as commodity groups, established companies interested in a strategic or distribution partnership, or interest as customers or end users).
- The project has the potential to generate economic impacts for the company as well as environmental benefits to Canada.
- Applicants will demonstrate the market potential of their innovations by outlining the competitive landscape, and industry positioning.
- Project will be assessed on the potential environmental impacts resulting from the funded activities.
  - Prior LCA work that shows environmental impact of the proposed technology may be helpful in assessing projects. However, previously performed LCAs are not a requirement.
- Capacity of company to complete milestones and deliverables.
- Final eligibility decisions rest with the HARVEST organizers.

### For PACT applications

- Open to technology at Technology Readiness Level (TRL ~2-7), where early TRL proposals are expected to move along the TRL scale over the duration of the project.
- Developing an innovation focused on improving the environmental footprint of primary agricultural production.
- Technologies should leverage life sciences and biotechnology innovations to reduce environmental impacts and/or improve the efficiency of on-farm production activities.

### For wasteCANcreate applications

- Open to technologies that are ready to scale past the laboratory (~TRL4-5).
- Work contributes to an area within agriculture, food and beverage production, or other area in the food value chain.
- Utilizes an enzymatic, fermentation, and/or engineering biology-based process.

## Funding Terms

- HARVEST will contribute between \$350,000 - \$750,000 CAD to each approved project
- Project applicants must provide a minimum cash contribution to the project equivalent to one-third of the total project value. (e.g. if the total project value is \$525,000, the applicants would need to commit at least \$175,000, while HARVEST contributes \$350,000). **Projects will be considered more favourably with a co-funding commitment approaching 50% of the total project value** (e.g. a project with a total budget of \$1,000,000 with \$500,000 contributions from each of HARVEST and the project team).
- Minimum total project funding size is \$525,000 CAD.
- The project term is 2 years (24-months), with eligible expense period between April 1, 2026, to March 31, 2028.
- **Projects must be completed by March 31, 2028. No-cost extensions will not be allowed within HARVEST.**
- 3-8 projects will be funded in each stream.
- **One hundred per cent of the co-funding for the project must be received or committed before funds can be released.** HARVEST reserves the right to withdraw its funding for any approved project that does not meet this requirement or if there is a change in a project's co-funding status.
- Proposed project activities cannot already be part other **currently active** Canadian Genome Enterprise or another federal program. Projects that build on, or complement, work completed under other federal programs are welcome.

## Eligible Costs

Eligible costs for both HARVEST funding and co-funding include:

- Salaries and benefits directly related to the completion of the project activities
- Contracted services
  - Project budgets may include services from others. Such services will be considered eligible only if they are specific to the project, crucial to its success, and cannot reasonably be completed by the project team. To be considered eligible, companies must enter into specific agreements with third-party service providers.
- Equipment
  - Equipment is defined as items that have greater than \$10,000 in value and a useful life of greater than one year.
  - Project budgets can include individual equipment items that cost less than or equal to \$100,000. Requests for more expensive equipment will be assessed on a case-by-case basis. Such expenses will be considered eligible only if the equipment is specific to the project, crucial to its success, and cannot reasonably be funded by other sources or accessed by other means.
  - The collective allocation of HARVEST funds for equipment cannot exceed 20% per cent of the approved HARVEST funding, regardless of the total value of equipment expenses allowed. Eligible equipment costs that exceed this limit must be covered by other approved funding sources.
- Other direct costs
- Overhead
  - Overhead costs are capped at 15% of the total HARVEST allocation to the budget.

## Ineligible costs

- Market analysis
- Advertising and other marketing activities
- Legal fees
- Costs to establish inventory
- Hospitality (e.g., food and beverage)
- Land or building purchases including real estate and construction
- Government fees
- Performance pay, such as bonuses or severance pay
- Costs being reimbursed under an existing federal, provincial, or territorial program

HARVEST reserves the right to withhold funding for budget items that exceed fair market value.

## Application Process

The application and adjudication process consists of two distinct stages. At each stage, applications are evaluated, and only those that meet the required criteria will progress to the next phase. Since the process is competitive, **applications may be eliminated at any stage if they do not fulfill the necessary requirements or demonstrate sufficient merit.** This approach ensures that only the most suitable and competitive projects are advanced through the program.

- 1) Eligibility and suitability screening through completing an initial intake form.
- 2) Companies who pass initial screening will be invited to complete a full application form.
- 3) Full applications submitted for external review and assessment for program fit.
- 4) 3-8 Projects for each stream (For PACT and wasteCANcreate) will be funded.

## Required Documents

### Intake

- Completed intake form

### Full application

- Completed application form including attached list of references
- Schedule A. Work plan
- Schedule B. Budget
- Company's previous year's financial statement or demonstration of availability of co-funding and letter from CEO or authorized representative committing co-funding to HARVEST project
- Confirmation letter from LCA service provider (if applicable)
- Prior completed LCA report (if applicable)
- Letter(s) of commitment from partners providing financial support (if applicable)
- Up to 3 non-binding letters of support/intent from potential customers or other organizations demonstrating industry need/pull (if applicable)

## Contact

For program and stream specific questions, please reach out to one of the e-mail addresses below. Your question(s) will be directed to the appropriate team member to be answered.

### **PACT**

- [pact@harvestaccelerator.ca](mailto:pact@harvestaccelerator.ca)

### **wasteCANcreate**

- [wcc@harvestaccelerator.ca](mailto:wcc@harvestaccelerator.ca)

**Note:** Please include “HARVEST Accelerator” at the start of the subject line for any emails pertaining to the program to ensure a timely response.

## APPENDIX A: Company Eligibility

Applicants will be required to attest that the following eligibility requirements have been met:

### COMPANY OWNERSHIP

A company must be a private for-profit company that is majority-owned by Canadians, defined as direct ownership of stock or equity in the company on a fully diluted basis (i.e., total shares or equity outstanding if all possible sources of conversion were to be exercised). This includes, but is not limited to, outstanding stock or equity (both common and preferred), warrants, options or other convertible securities. The majority (more than 50 per cent) of the company's equity must be directly owned by one of the following:

- One or more individuals who are citizens or permanent residents of Canada
- Other FPEs directly owned and controlled by individuals who are citizens or permanent residents of Canada
- Other publicly traded FPEs residing in Canada
- Any combination of the above

Examples of different ownership structures and eligibility outcomes are in Table A1.

### COMPANY CONTROL

Company control must be exercised in Canada. Control is defined as the authority to make decisions regarding the company's management and policies.

**Table A1: Examples of ownership share as a percentage of stock in a company that is a privately held FPE to determine eligibility for HARVEST funding**

Example	Individuals <sup>i</sup>	Canadian <sup>ii</sup> FPE #1	Canadian <sup>ii</sup> FPE #2	Canadian public institution <sup>iii</sup>	Foreign <sup>iv</sup> individuals or FPEs	% Canadian ownership	Eligible?
1	100					100%	Yes
2	50	50				100%	Yes
3	35	60		5		95%	Yes
4	10	40	20	10	20	70%	Yes
5		30	30	10	30	60%	Yes
6		40			60	40%	No
7		45		10	45	45%	No
8		50			50	50%	No
9	25			25	50	25%	No
10					100	0%	No

<sup>i</sup> Individuals are citizens or permanent residents of Canada.

<sup>ii</sup> A Canadian FPE is a business, other than the company, that is directly owned and controlled by one or more individuals who are citizens or permanent residents of Canada.

<sup>iii</sup> A Canadian public institution is a publicly funded, non-profit organization. Typically, it is a university that takes an equity position in a start-up company.

<sup>iv</sup> Foreign individuals are neither citizens nor permanent residents of Canada. Foreign FPEs are businesses that are not domiciled in Canada and/or not directly owned and controlled by one or more individuals who are citizens or permanent residents of Canada.

## **APPENDIX B: Instructions and Template Letter for Co-Funding Commitment (will be required as part of Full Application)**

1. Fill in all the bolded sections with the requested information and remove any outstanding bolded text.
2. In the table provided, break down the co-funding support provided by the organization. The definitions for the columns are as follows:
  - a. Component: Budget line item description.
  - b. Type: The types of co-funding that can be provided include unrestricted cash, restricted cash (as specified by funder), and in-kind contributions.
  - c. Amount: Specify the amount of support for that specific budget line item.
  - d. Reference: Provide a one-page document that supports the cost outlined for the line item (invoice, purchase order, proof of competitive salary cost, etc.).
3. In the **TOTAL AMOUNT** row at the bottom of the table, provide the total amount of co-funding support. This should be the same number quoted in the paragraph above the table.
4. The purpose of the "Reference" column is to link the justification for the valuation/cost in the reference provided as part of this letter

**TEMPLATE:**

**Co-funder contact name and address details**

[Date]

**HARVEST Program Managers**  
 Ontario Genomics Exchange Tower  
 130 King St. West  
 Suite 1202  
 Toronto, ON M5X 1E4  
 CANADA

Dear HARVEST Program Managers,

I am writing to express our support for the research project titled “[Project Title],” led by [Company Leader’s name] at [Company name].

Our organization, [name of your institution or organization], is committed to contributing to the success of this project through co-funding support for a total of [amount], as reflected in the table below.

Component	Type (Cash or in-kind)	Amount Cash or In-kind Value (\$CAD)	Reference (1 page maximum)
<b>TOTAL AMOUNT</b>			

We believe this collaboration will enhance the project’s outcomes. We are confident that the combined expertise and resources of our teams will lead to significant advancements in [research field].

Please feel free to contact me at [your email address] or [your phone number] if you require any further information or have any questions regarding our support. We look forward to the opportunity to work together on this important initiative.

Thank you for considering our contribution to this promising project.

Sincerely,

[Your name]  
 [Your title]  
 [Name of your institution or organization]