



ALBERTA INNOVATES

AGRICULTURE AND ENVIRONMENT

BIOINDUSTRIAL AND CIRCULAR INNOVATION
CIRCULAR ECONOMY

FUNDING DETAILS

Piloting Plant Fiber-Based Composite Materials: Leveraging Alberta's Feedstock for Sustainable Innovation

This project will set up a pilot facility to produce plant fiber-based polymer blends using locally sourced materials and Plant Plus's proprietary natural binding agent. The goal is to lower production costs and reduce the environmental footprint of final products. This effort supports the circular economy and promotes more sustainable practices in agriculture and food processing.

Plant Plus Clean Technology is committed to leading the shift toward a greener future by rethinking how single-use products are made and disposed of—starting with a safe, eco-friendly alternative to plastic straws. Guided by innovation, integrity, and a strong focus on environmental responsibility, Plant Plus Clean Technology is working to create a cleaner, more sustainable world.

Plant Plus Products —

Provide A Circular Model

PLANT PLUS
Sustainable Food Packaging Solutions



RECIPIENT:
Plant Plus Clean
Technology



PARTNERS:
ACT/IRAP programs



TOTAL BUDGET:
\$3,388,000



AI FUNDING:
\$945,000



PROJECT DATES:
December 2024-
November 2027



PROJECT TRL:
Start: 6
End: 8

APPLICATION

Plant Plus Clean Technology aims to provide eco-conscious solutions that reduce plastic pollution and promote circular economy principles. Through our exclusive plant-fiber-based products, we aim to offer environmentally safe alternatives to plastic products that decompose efficiently in existing commercial composting or pyrolysis facilities, fostering positive change and driving meaningful impact in our communities and beyond.

[Learn how albertainnovates.ca](https://www.albertainnovates.ca)

Classification: Protected A



ALBERTA INNOVATES

AGRICULTURE AND ENVIRONMENT

BIOINDUSTRIAL AND CIRCULAR INNOVATION

CIRCULAR ECONOMY

PROJECT GOALS

- This project aims to pilot the development of plant fiber-based composite materials using Alberta's abundant feedstock, driving sustainable innovation and delivering environmentally friendly alternatives for industrial use.
- The pilot will be carried out in two phases, each focused on a key process—polymerization and fiber treatment—to accelerate progress and maximize technical advancement.

BENEFITS TO ALBERTA

- The adoption of Plant Plus Clean Technology offers a powerful solution to reduce downstream greenhouse gas (GHG) emissions in the food service industry. It also directly supports Canada's goal of achieving net-zero plastic waste. By aligning with the country's 2030 climate targets—including a 40% reduction in GHG emissions from 2005 levels—this project positions Alberta at the forefront of sustainable industrial transformation.
- Leveraging Alberta's agricultural products and by-products, Plant Plus provides a nature-based, circular solution that not only lowers emissions but also integrates easily into established consumer habits. This initiative enhances Alberta's agricultural bioprocessing sector, drives sustainable innovation, and stands as a compelling Canadian success story in the global transition to a low-carbon, waste-free future.



1-2 New Products



1 Patent/ 2 Trademarks



1-3 Project Jobs



3-15 Future Jobs

CURRENT STATUS

May 2025 – In progress

The project successfully sourced and ordered the equipment required. The team also figured out how different amounts of plant fiber affect the strength and quality of the materials made from them. In addition, the upcycling process for defective plant-fiber-based straws was optimized to minimize waste while maintaining product quality. A clear factsheet was created to show how much energy and material are used in the process.

Disclaimer • Alberta Innovates (AI) and His Majesty the King in right of Alberta make no warranty, express or implied, nor assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained in this publication, nor that use thereof infringe on privately owned rights. The views and opinions of the author expressed herein do not necessarily reflect those of AI or His Majesty the King in right of Alberta. The directors, officers, employees, agents and consultants of AI and the Government of Alberta are exempted, excluded and absolved from all liability for damage or injury, howsoever caused, to any person in connection with or arising out of the use by that person for any purpose of this publication or its contents.

Classification: Protected A