ALBERTA INNOVATES

AGRICULTURE AND ENVIRONMENT

BIOINDUSTRIAL AND CIRCULAR INNOVATION

BIOENERGY

FUNDING DETAILS

Cold Press Oilseed Crush Plant

Canary's biodiesel facility is facing feedstock challenges that are expected to be alleviated through the ability to crush both off-spec canola and on-spec camelina seeds. Canary identified Cold Press Crushing technology that is commercially available, however, there remains technical challenges anticipated to be overcome through the project's innovation.

Canary's invention will crush multiple seeds regardless of seed attributes or type variations at a high yield that produces a premium meal and oil product. Canary will process 60,000 tonnes/year of oilseed producing 18,000 tonnes/year oil for biofuel production and 42,000 tonnes/year meal to supply the local feed market.

Canary Biofuels Inc. existing biodiesel facility in Lethbridge Alberta is the site for installation of new technology.

RECIPIENT:
Canary Biofuels Inc.

PARTNERS:
N/A

TOTAL BUDGET:
$4,000,000

AI FUNDING:
$600,000

PROJECT DATES:
JAN 2023 – MAR 2024

PROJECT TRL:
Start: 7
End: 9

APPLICATION

Increased focus on production of biofuels across North America has amplified the need for waste feedstock supply to fulfill production capacity. Historically, biofuel producers have been using food grade canola and soybean as inputs in their production which has had a substantial impact to driving increasing food prices and less GHG emission reduction than anticipated. Canary has identified both damaged canola crop seeds that would otherwise be disposed of or sold at a nominal value and on-spec camelina seed which requires significantly less fertilizer/water that will address this feedstock availability issue, however, there are no facilities that crush these seeds commercially. Canary's crush innovation will fill this gap and can be deployed within agriculture communities creating a circular economy from farm to fuel while increasing jobs, farmer incomes and decreasing GHG emissions within Canada. There is an incredible untapped resource Alberta has and this Project will demonstrate this potential to jump start rapid industry growth.

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PROJECT GOALS

Design novel innovation

- Construct innovation and conventional Cold Press crusher
- Test prior to implementation
- Commercially run variable seeds while adjusting until optimal yield and quality is achieved
- Utilize technology for other biofuel producers and/or expand current operations

Camelina grown on dry drought conditions to supply Crush Plant Innovation

BENEFITS TO ALBERTA

- GHG emissions reduction of over 100,000 tonnes CO2e
- Over 30,000 tonnes of off-spec canola seed diverted from landfill
- Provides a crop value floor for off-spec canola that would otherwise be discarded or received nominal value for
- Creates incremental revenue to the farmer for growing camelina on dry/fallow land or as a cover crop
- Growing camelina contributes to agriculture benefits such as soil health, pest reduction and sustainable agriculture that increases growth of higher value crops
- Increases waste feedstock supply for biofuel production by displacing food for fuel feedstocks such as Canola and Soybean oils
- Progresses the transition to the Green Economy and diversifying Alberta's economy
- Contribution to stability of farm incomes and biodiversity
- Produces a high-quality local meal for feed industry displacing long distance lower quality meal

100 kt/yr Future GHGs Reduced

15 Project Jobs

50 Future Jobs

CURRENT STATUS

March 2024- Complete

This project was concluded in March 2024. It kicked off in March 2023 with the construction and installation of the Cold Press Crushing technology to establish the foundation for Canary's novel innovation. Canary hired all staff and key personnel for crusher operations and established the baseline by crushing on-spec canola seed. Canary implemented key design experiments utilizing off-spec canola and on-spec camelina to test changes in the baseline that was used to develop Canary's invention. Canary has achieved its objective of yielding the highest quality meal for the feed market and oil for optimal biodiesel operations.