



November 26, 2012

From Agriculture to Aviation: Ag-West Bio bio-jet fuel study complete

Saskatoon, Saskatchewan: Thanks to research being conducted in Saskatchewan, planes fuelling up on Canada's prairies could one day be filling their tanks with renewable fuel made from locally-grown agricultural crops.

A study led by Ag-West Bio in partnership with Agrisoma Biosciences and Mustard21 has provided answers to questions surrounding the economic feasibility of developing an aviation (bio-jet) fuel industry, using industrial oilseeds as feedstock to produce a 'drop-in' fuel that is functionally identical to conventional jet fuel. The new industry is of interest for airlines seeking ways to reduce their carbon emissions and diversify their fuel supply, and for prairie farmers, who could benefit from additional cropping options. The study has also identified where further research could help lower production costs and which areas of the value chain still need to be developed.

Two crops were the focus of the study: *Camelina sativa* (camelina), adaptable across the entire prairies, and *Brassica carinata* (carinata), which grows well in drier and hotter regions, like the brown soil zone of south-western Saskatchewan.

Numerous factors that would affect a bio-jet fuel value chain were considered in the study, such as the amount of jet fuel currently imported into the region, the viability of a refinery, and the fact that a market would need to be established for the meal and other by-products. The main economic drivers are the cost of feedstock, the value of the oilseed meal and the price of crude oil, which affects agricultural production and the price of petroleum-based jet fuel.

Although a great deal of work has already been done to improve agronomic traits such as yield and oil content, further enhancement of the crops will lower the production cost, making the biofuel more competitive with conventional jet fuel. On the other end of the value chain, research is underway to make the refining process more efficient. Both areas of research will increase the feasibility of the bio-jet fuel industry in this province.

In October 2012 the National Research Council's Institute for Aerospace Research in Ottawa flew the world's first commercial flight powered by 100% bio-jet fuel, using Applied Research Associates (ARA) process technology with carinata oilseed sourced from Saskatchewan's Agrisoma Biosciences. The bio-jet fuel has demonstrated improved engine efficiency and lower carbon emissions.

Mike Cey, Director of Corporate Initiatives with Ag-West Bio and the lead for the study, says, "There are details that need work, but in general, the study shows that establishing the value chain here in Saskatchewan is worth pursuing. These crops would certainly benefit our producers, especially in drier areas where cropping options are more limited."

The Executive Summary of the study "Economic Evaluation of Drop-In Hydrotreated Renewable Jet (HRJ) Fuel Production from *Camelina sativa* and *Brassica carinata*," is available on [Ag-West Bio's website](#), or by contacting Ag-West Bio.

This project was made possible thanks to Agriculture & Agri-Food Canada's CAAP (Canadian Agricultural Adaptation Program) funding, administered through ACS (Agriculture Council of Saskatchewan).