

# Biodiesel Bulletin

## Biodiesel Testimonials

Project partners using Olds College biodiesel share their thoughts on the renewable fuel.

**"I noticed very little difference in power and mileage in my bus with B5 — or even using B20 in the warmer months."**

-O. Ulry, Chinooks Edge School Division Bus Driver

**"I've been using B20 this spring in all my diesel engines on the farm with no problems."**

-K. Bender, Producer Partner and Canola Grower



Samuel Gonzalez, Summer Student with OCSI, is investigating the quality of biodiesel produced from Camelina seed.

## Minister of Environment visits Olds College

Alberta's Minister of Environment toured environmental initiatives at Olds College in June.

The Honourable Rob Renner visited with Olds College staff on various projects which support the Premier's initiative of ensuring Alberta's resources are developed in an environmentally sustainable way.

The Minister toured the botanic gardens, landscape pavilion, wetlands, compost centre, and biodiesel facility at the College.

Jordan Cleland, Vice-President of Advancement with the College, presented the Minister and his staff with the opportunity to tour the College.

"We are looking to share

our vision of an environmentally sustainable future with the Minister through the projects and curriculum we have initiated at the College," said Cleland. "We know what's in the Minister's 'Mandate Letter' from the Premier, and we approached the opportunity with Minister Renner from the perspective of not just how the Ministry could help Olds College, but by showcasing how the things we are doing could help him in achieving his mandate."

The Minister commented favourably on the College's advancements. "It's encouraging to see Alberta's post secondary institutions take a leadership role in environmental sustainability," says Renner.

"Greening your own operations, as well as providing academic programming that contributes to environmental sustainability, represent important steps towards teaching Alberta's next generation about our responsibility to be good environmental stewards. You have plenty to be proud of at Olds College--keep up the good work!"



Minister of Environment Rob Renner meets with Olds College staff at the future wetlands site.

## Camelina seed showing promise as biofuel feedstock

Investigations are underway at Olds College to determine the potential of a new oilseed crop as a feedstock for biodiesel production.

Summer student Samuel Gonzalez from the Dominican Republic is working with *Camelina sativa L.*, commonly known as camelina or false flax. His summer research project is investigating the oil yield, press cake quality, and characteristics of biodiesel produced from camelina seed.

Camelina is a member of the mustard family. It is an annual or winter annual plant that attains heights of 30-90 cm. Camelina seeds lack a dormancy period and have a short growing season, taking only 85-100 days for the plants to reach maturity.

Because of camelina's favourable growing characteristics and oil composition, producers from the western U.S. and Canada are considering it as a feedstock for biodiesel production. It is able to out compete weeds, grow in

marginal land, and requires little to no crop inputs.

Camelina seeds have been found to have 29-39% oil and 23-30% protein. Camelina oil has excellent cold flow properties (-25°C pour point) and a cloud point of -15°C making it a superior biodiesel feedstock in cold climates like Canada.

Besides investigating biodiesel quality, future research is slated to assess camelina press cake in animal rations.

# \$1.275 million from Alberta Energy Fuels College Biodiesel Project

Alberta Energy's investment of \$1.275 million in Olds College's BioFuel Technology Centre™ will enable the completion of the Olds College Pilot Plant and Micro-Processing Centre, a critical component of the College's plan to develop a sustainable biofuel research program.

"No one else in Alberta has the ability to look at the entire value chain of biodiesel production," says Tanya McDonald, Bioenergy Research Associate with the Olds College School of Innovation (OCSI). She says that the College's biodiesel research initiatives range from seed selection and crop management to production processes, use of by-products, and evaluation of engine performance.

The funding from Alberta Energy will be used to complete the facilities needed to test production techniques on a broader scale than can be accomplished in existing labs.

Terry McKay, Senior Process Engineer/Food Scientist with OCSI explains that micro-processing allows expansion of concepts tested in the lab, while the pilot plant scales production even further to prove the commercial viability of potential fuel stocks. "The main component is a new explosion proof facility that will allow safe use of solvents to extract fuel oils from plants."

The project will take advantage of an existing building on the Olds College campus, focusing the resources on renovation rather than new construction.

"Biofuels are an exciting new part of our energy portfolio. Opportunities for more in-depth study on biofuel production and use are valuable as we promote the development of a commercially viable bioenergy marketplace in Alberta," said Mel Knight, Minister of Energy.

McKay and McDonald put emphasis on the concept of sustainability within the College biofuels project. "Our research is moving away from the use of oils from food plants," says McKay. "Mustard, camelina, even weeds and algae have oil content that may be viable fuel sources." The use of green and frozen canola as fuel stock will also be investigated, potentially offering a market for crops that currently have no value.

He says research also includes the use of by-products of fuel production, seeking efficient applications in food stocks for animals, even extracting substances that have value as nutraceuticals to improve health in people.

The College's existing research capacity and partners have created a unique biodiesel project with the capacity to produce about 45,000 litres of fuel annually. "We have great community support with partners such as the Chinook's Edge School Division, Town of Olds, Mountain View County, and the Mountain View Regional Waste Commission. They're some of the first in Alberta to get on board with the use of biodiesel in fleet vehicles."

The future looks to grow production and research capacity to further test the commercialization of biodiesel.

"This investment from Alberta Energy will increase our infrastructure and expand our capacity on the analytical side," says McDonald. She notes that "this is the first step of several" and hopes that the expanded capability will draw additional investments and partnerships.

The pressure on supplies of traditional energy sources is growing and solutions must be found. "Renewable fuels are one piece of that puzzle," she says.

The funding is provided incrementally beginning with \$600,000 in March, 2008. Additional contributions are expected in June, August, and December 2008 as the project moves forward.

## The BioFleet Program

BioFleet is a biodiesel market development program in western Canada.

Managed by not for profit organizations and financially supported by government in western Canada, BioFleet provides:

- information,
- education,
- incentive programs,
- workshops, 'Under the Hood'
- demonstrations,
- calculation tools, and
- common branding to support the expanded use of biodiesel.

For more information visit [www.biofleet.net](http://www.biofleet.net)



Biodiesel produced on campus is being tested in vehicles operated by regional partners and Olds College.

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The Olds College School of Innovation (OCSI) is a state of the art applied research facility within Olds College.

The core objective of OCSI is to advance research, commercialization, and innovation for agri-business. Areas of research include **Bioenergy and Waste Management** and **New Products from Crops and Bio-processing**.

Find out more at [www.oldscollege.ca/schools/ocsi/index.htm](http://www.oldscollege.ca/schools/ocsi/index.htm)

