Growing the Margins 2011

Growing Rural Biodiesel Production in Ontario

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Biodiesel: 200 million L / yr
10 fold increase since 2000
Biodiesel Feedstocks
Soybean as a Feedstock

- 35 – 40 % protein
- 15 – 22 % oil
- Triacylglycerols: 85% unsaturated fatty acids
Soybean Oil to Biodiesel

Oleic acid (23%)
Linoleic acid (50%)
α-Linolenic acid (7%)
Soybean Biorefinery

Soybeans → Lipids → Nutraceuticals / Functional Foods

Soybeans → Meal → Energy

Soybeans → Meal → Food / Animal Feed

Soybeans → Meal → Biocomposites

Soybeans → Energy → Bioconversion to precursors

Phospholipids

Biodiesel

Glycerol

Food Applications

Integrated, Decentralized
Beginnings of a Biorefinery

- Oilseed processing
- 250 kW anaerobic digester
• Biodiesel plant commissioned December 2009
• ~ $150 000 for the turnkey operation
• 45 000 L of biodiesel produced to date from hemp oil, soybean oil, waste vegetable oil
Ridgetown Biodiesel Production

- produced biodiesel has mostly been marketed to industry (agriculture, lawn maintenance, transportation) and alternative uses

- raw feedstock cost $0.77 / L, conversion rate of 95% and a processing cost of $0.30 / L; finished biodiesel costs ~ $1.10 / L plus HST
Challenges:

- tight margins
- volatile commodities and competition for commodities
- cost of ASTM testing
- U.S. blender’s credit
Biodiesel Solutions

Solutions:

• Extended value chain:
  - biorefinery & co-products
  - additional feedstock opportunities
  - alternative uses

• Government:
  EcoEnergy program, carbon credits?

• Renewable Fuels Strategy: 2 % renewable content in diesel and heating oil
Road Vehicle Diesel Sales

Statistics Canada 2009

2 % biodiesel July 1, 2011!
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