

Biodiesel

The Basics:

Biodiesel from Recycled Vegetable Oil

New England
Biodiesel Workshop

March 26, 2003
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About Griffin Industries

- Largest privately held rendering company in the U.S.
- In business since 1943
- Family owned and operated
- 1400+ employees
- Biodiesel operation since 1998
- Bakery, hides, fertilizer as well



What fueled the first diesel truck?



What is Rendering?

Definition:

*Rendering: to melt down
by heating . . .*

*The extraction of
moisture*



What is Biodiesel?

- Biodiesel is a methyl ester derived from a wide range of vegetable oils and related biomass (fatty acid) feedstock.
- Biodiesel is made through a conventional chemical process known as “transesterification.”
- Review samples

Biodiesel Raw Materials

Oil or Fat

Soybean

Corn

Rapeseed

Cottonseed

Sunflower

Beef tallow

Pork lard

*Used cooking oils (yellow grease), etc.

Alcohol

Methanol

Ethanol

Catalyst

Sodium hydroxide

Potassium hydroxide

What is Yellow Grease?

Oil derived from vegetable oil (most commonly) and collected by renderers from restaurants around the country.

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What do Renderers do?

- Provide service
- Provide a system (container)
- Clean raw product
- Test/Quality Control
- Sell



How is Yellow Grease Used?

- Animal Feed
- Cosmetics
- Ag chemical carrier
- Fuel in boilers
- Products such as rubber and plastics
- Biodiesel

Quantities in U.S.

Total Inedible Tallow and Grease:
10 Billion Pounds

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Consumption

Domestic: 4.6 Billion Pounds

Export: 3.4 Billion Pounds

Total : 8.0 Billion Pounds

Available : 2.0 Billion Pounds

Total Yellow Grease

Production: 3.5 Billion Pound

Consumption: 2.0 Billion Pounds

Available : 1.5 Billion Pounds

* *Translates into 200 Million Gallons of B100 or
1 Billion Gallons of B20*

What is Brown Grease?

*Grease derived from sewage traps
at restaurants – also known as
"trap grease"*

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Brown Grease

Has approximately 5 times the FFA's as yellow grease, therefore, brown grease is not acceptable for biodiesel production as a stand alone feedstock.

Market Values

Soy oil: 23¢/# or \$1.72/gallon

Yellow grease: 13¢/# or 97¢/gallon

* Brown grease: 6¢/# or 45¢/gallon

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Renderers' Perspective

- Current Markets – value of oils/greases is volatile, but goes up and down with soy oil prices
- Current Prices – little higher than the past couple of years

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How Markets are Changing

- World economy
- New international markets
- New uses - biodiesel

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Regulatory Concerns

Biodiesel concerns are centered on creating a level playing field with other feedstocks.

BSE is not a huge concern.

Yellow Grease Biodiesel Challenges

*Equality in producer subsidies
(CCC)*

Equality in end-user tax incentives

Equality = soy oil

Feedstock Impact on Fuel Quality

- Stability
- Emissions
- Cold Flow
- Price
- Color?

Griffin's *Bio G-3000 Quality*

- Meets and exceeds ASTM Biodiesel Specification
- Onsite - Technical Laboratory
- Martin Mittlebach, Univ. of Graz.
- BDI - Established learning curve.
- Low cost producer, zero waste
- Guaranteed Quality

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Questions?

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