

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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