



Biodiesel: Feedstock Supply

Achieving 1 Billion Gallons of Biodiesel While Protecting Valuable Feedstocks

The combination of rising energy costs, increased global commodity demand, and the weak dollar are the main causes of rising food prices. It is important to note that U.S. biodiesel production is **not** a significant factor. In fact, in 2007, only 12% of U.S. soybean production and 4% of global soybean production was used by the U.S. biodiesel industry to produce fuel. And from the soybeans used to produce biodiesel, 81% of the soybean's yield is protein that enters the market for either human consumption or animal feed. Technological advances are certain to increase soybean yields from existing acreage in the future. In addition, other sources of biodiesel feedstock – such as restaurant grease, animal fat, corn oil derived from ethanol production, camelina, and algae – are currently being developed and utilized.

Biodiesel Feedstock Sources:

- ✓ Refined vegetable oil (soybean, canola, sunflower)
- ✓ Corn oil from ethanol production
- ✓ Recycled restaurant oil (yellow grease)
- ✓ Recycled trap grease (brown grease)
- ✓ Animal fats (white grease)

1. Current Agriculture Feedstocks: According to the National Energy Research Laboratory (NREL), in Golden Colorado (March 2006), current feedstocks for biodiesel total nearly 2.0 billion gallons (including greases, animal fats, and vegetable oils). NREL anticipates the natural growth and expansion of existing feedstocks (soy, canola, and sunflowers) will expand feedstocks supplies for an additional 1.8 billion gallons by 2016. It is important to note that U.S. biodiesel production is **not** a significant factor. In fact, in 2007, only 12% of U.S. soybean production and 4% of global soybean production was used by the U.S. biodiesel industry to produce fuel. And from the soybeans used to produce biodiesel, 81% of the soybean's yield is protein that enters the market for either human consumption or animal feed.

In the current USDA baseline, USDA has projected 700 million gallons of biodiesel made from soybean or canola oil by 2012.

2. Animal Fats – White Grease: 300 million gallons (Estimates from the National Renderer's Association)

3. Corn Oil from Ethanol Production: As the ethanol sector continues to grow the corn oil extracted from the processing of ethanol will be added to the oil feedstock marketplace. Generally, at a 75% recovery rate (dry mill facilities), 1 billion gallons of ethanol will provide oil feedstock equivalent to 75 million gallons of biodiesel. So today at 7.5 billion gallons of ethanol, dry mill ethanol facilities could be recovering enough corn oil to produce nearly 375 million gallons of biodiesel. Under the RFS, 15 billion gallons of ethanol, will be produced from 5 billion bushels of corn and yield 750 million gallons of biodiesel. (15 billion gallons of ethanol = 5 billion bushels of corn x .75 = 3.75 billion bushels of corn x 1.5 lbs of corn oil per bushel = 5.625 billion gallons of oil = 750 million gallons of biodiesel)

4. Potential for Restaurant Grease*:

Yellow Grease = 9.4 lb/cap = 2.847 bil lbs = 380 mil gal biodiesel

Brown Grease = 13 lb/cap = 3.938 bil lbs = 525 mil gal biodiesel

Total Restaurant Grease = 6.7 billion pounds = 905 million gallons of biodiesel

** Statewide Feasibility Study for a Potential New York State Biodiesel Industry, May 5 2004, LECG, LLC; and Urban Waste Grease Resource Assessment, November 1998, NREL/SR-570-2614.1*

Domestic Feedstock Summary:

Current Feedstocks	1.7 billion gallons
Natural Expansion of Feedstocks by 2016	1.8 billion gallons
Corn Oil from Dry Mill Ethanol Production 2015	750 million gallons
Biodiesel from Restaurant Grease	905 million gallons
Animal Fats – White Grease	300 million gallons

Total Feedstocks for Biodiesel Production by 2016 ***5.455 billion gallons***

- 5 billion gallons is 12% of the 60 billion gallon diesel marketplace, and the RFS only requires 1 billion gallons of biomass-based diesel fuel.
- In 2007, the United States produced only 500 million gallons of biodiesel, less than 1% of the diesel pool.