U.S. and Tennessee Biodiesel Production – 2007 Industry Update

Report prepared for USDA Rural Development

By the Agri-Industry Modeling & Analysis Group, Kim Jensen, Jamey Menard, and Burton C. English

August 2007
Department of Agricultural Economics, The University of Tennessee
Knoxville, Tennessee*

*Funding provided in part by USDA Rural Development.

U.S. and Tennessee Biodiesel Production – 2007 Industry Update

Kim Jensen, Jamey Menard, and Burton C. English*

Executive Summary

As of May 2007, there were 148 biodiesel companies that had an annual production capacity of 1.39 billion gallons per year. In addition, another 96 companies have stated their plants are currently under construction and are scheduled to be completed within the next 18 months with five plants expanding their existing operations. The added capacity from new plants and expansion of plants would total an additional 1.89 billion gallons per year of biodiesel production capacity. If these two numbers are summed, the annual production capacity by year end 2008 could be as high as 3.3 billion gallons. U.S. biodiesel production was estimated at about 250 million gallons in 2006, an increase of 175 million gallons from 2005 production levels of 75 million gallons. As of late 2006, Tennessee had less than ten facilities producing biodiesel, however, plans for additional facilities were underway.

As of August 2007, there were a total of 750 stations which sold biodiesel. As can be seen in Table 18, North Carolina, South Carolina, Texas, and Missouri have the largest number of stations. Tennessee has 39 stations.

Recently, the national average price of diesel was around $2.96, while the average price of biodiesel (B100) was $3.27, for a price wedge of $.31/gallon. When put on an energy equivalent basis, the price wedge is $.57/gallon.

Biodiesel capital costs are similar for the various feedstocks. However, feedstock costs could vary considerably and are the largest contributor to biodiesel production costs. Yellow grease has the lowest feedstock costs, followed by soybean, and then canola oil. Production of biodiesel from soybean oil yields biodiesel at approximately $2.98 per gallon and from yellow grease, $1.67 per gallon. Biodiesel produced from canola would be $0.35 to $0.40 per gallon higher than if produced from soybeans. These costs can be compared with petroleum feedstock costs for conventional diesel of about $1.56.

Glycerine is a by-product of producing biodiesel. The glycerine market is complex, unpredictable and noted for volatile price swings and predicting future glycerine prices is very difficult because of the large number of end uses and complexity of supply markets. Rising glycerine supply and low prices is causing end-users to seek new applications for glycerine.

Several national policies and incentives will influence future biodiesel industry development, including blenders' tax credits, small agri-biodiesel producers' tax credits, renewable fueling infrastructure tax credits, and a national renewable fuel standard.

---

* This report updates section two of the report "Economic Feasibility of Producing Biodiesel in Tennessee" initially published in 2002 (English, Jensen, and Menard, 2002).

Table of Contents

List of Tables

List of Figures

U.S. and Tennessee Biodiesel Production – 2007 Industry Update

I. Biodiesel Production and Capacity

In the past couple of years, biodiesel production in the United States has risen dramatically. As shown in Table 1, biodiesel production was estimated at about 250 million gallons in 2006 (National Biodiesel Board, 2007a), an increase of 175 million gallons from 2005 production levels of 75 million gallons. The production of 250 million gallons can be compared with a 2006 estimate of 395 million gallons of capacity, implying, on average, plants were operating at about 63% of capacity. Urbanchuk (2006) projected 150 million gallons of production for 2006 across a plant capacity of 395 million gallons which would be about 38% of capacity.

According to the National Biodiesel Board (NBB, 2007b), as of June 2007, there were 148 companies that had an annual production capacity of 1.39 billion gallons per year (a listing is provided in Table 2). This represents, on average, just below 9.4 million gallons of capacity per plant. In addition, the NBB reports another 96 companies have stated their plants are currently under construction and are scheduled to be completed within the next 18 months (see Table 3). Another five plants are expanding their existing operations. The added capacity from new plants and expansion of plants would total an additional 1.89 billion gallons per year of biodiesel production capacity. If these two numbers are summed, the annual production capacity by year end 2007 could be as high as 3.3 billion gallons. If these 58 companies with new or additional capacity will have an additional 1.89 billion gallons of capacity, this represents about 18.2 million gallons of new or added capacity per plant. The states with the largest number of plants are Texas and Iowa (Figure 1).

According to the East Tennessee Clean Fuels Coalition (ETCFC) quarterly publication, as of January 2007, Tennessee has six companies currently producing biodiesel with a total combined annual production capacity of 80.5 million gallons per year (Table 4). Four of the biodiesel producers are using soybean oil as the primary feedstock. One producer uses multiple feedstocks; one uses local yellow grease. In addition, ETCFC reports that another seven biodiesel producers have stated their plants are currently under construction are scheduled to be completed within the next 12 months (Table 5). The added capacity from these new plants would total 92.0 million gallons. Of these seven companies, five use soybean oil as a feedstock; one uses multiple feedstocks; and one uses animal fat. Summing the two numbers, annual production capacity by year end 2007 for Tennessee could be as high as 172.5 million gallons. For the 13 biodiesel plants existing/planned, this averages to about 13.2 million gallons per plant per year. A map of the counties showing where the existing and planned biodiesel facilities are to be located is shown in Figure 2 (East Tennessee Clean Fuels Coalition, 2007).

A study by Urbanchuk projects that by the year 2012, under a high oil price scenario, biodiesel demand would reach about 465.8 million gallons (Table 6). The demand for biodiesel from soybeans is projected at 401.7 million gallons and from other feedstocks at 64 million gallons.

The NBB cited current biodiesel capacity of 1.39 billion gallons for 2007. If 63% of capacity is assumed to be used, the projected production for 2007 is .88 billion gallons (Table 7). If the projected capacity expansion cited by the NBB is used, with projected capacity at 3.3 billion gallons by end of 2008, at a 63% use of capacity, this would be about 2.2 billion gallons of biodiesel (Table 7). If biodiesel production were to grow to 90 percent of current and already planned capacity by 2012, this would be 3 billion gallons by that year. If production were to

increase to greater amounts, new capacity in biodiesel production would have to be added beyond the 3.3 billion gallons.

II. Policies Impacting the Biodiesel Industry

Several policies will likely impact future growth of the biodiesel industry. First, the Energy Policy Act of 2005 put in place a national renewable fuel standard (RFS) of 7.8 billion gallons by 2012 (USDOE/EERE, 2007a). In addition, the Act included a provision under which refiners, blenders and importers can generate, transfer and use credits for gasoline that contains a greater quantity of renewable fuel than required under the RFS. The EPA, through its rulemaking, must provide for the generation of an appropriate amount of biodiesel credits under the RFS program. The Act also contains a provision for tax incentives for small agri-biodiesel producers. The legislation creates a new tax credit for small agri-biodiesel producers with production capacity not in excess of 60 million gallons of 10 cents per gallon for the first 15 million gallons of agri-biodiesel produced. The Act also contains language regarding renewable diesel tax credits. This provision enables renewable diesel to obtain the same $1.00 per gallon tax credit as biodiesel. [1]

Other federal programs are in place to encourage the use of biodiesel (USDOE/EERE, 2007b). The Alternative Fuel Infrastructure Credit provides a tax credit in an amount equal to 30% of the cost of any qualified AFV refueling property placed into service in the U.S. (which includes 20% or more biodiesel mixtures). The EPA Clean School Bus Program offers cost-shared grants to help school districts upgrade their diesel fleets including switching to biodiesel.

[1] Renewable diesel is defined as diesel fuel derived from biomass using a thermal depolymerization process that meets EPA's fuels and fuel additive registration process and meets the ASTM standard for diesel, D 975, or for fuel oils, D 396. The main difference is that renewable diesel technologies do not use the transesterfication process; rather, many "hydrotreat" the feedstock, reacting it with hydrogen to produce a renewable diesel fuel.

The U.S. Department of Agriculture Office of Rural Development has competitive grant funds and guaranteed loans for the purchase of renewable energy systems and energy improvements for agricultural producers and small rural businesses.

Tennessee also has several programs and laws that impact the biodiesel industry. These are outlined below (USDO/EERE, 2007c):

- Biodiesel Infrastructure Grants- The Tennessee State Energy Office, Department of Economic and Community Development, Energy Division offers grants to county governments for the installation of biodiesel infrastructure, including biodiesel tanks, pumps, and card readers, that can be used to provide biodiesel fuel for county/city owned vehicles including school buses, maintenance vehicles, heavy equipment, or any other vehicle currently powered by diesel fuel.

- Provision for Establishing Alternative Fuel Refueling Infrastructure Grants – The Tennessee Department of Transportation (TDOT) is authorized to undertake public-private partnerships with transportation fuel providers, including, but not limited to farmer cooperatives, to install refueling facilities. Refueling facilities include storage tanks and fuel pumps dedicated to dispensing biofuels, including but not limited to ethanol (E85) and biodiesel (B20). TDOT is also authorized to establish a grant program to provide financial assistance to help pay the capital costs of purchasing, preparing, and installing fuel storage tanks and fuel pumps for biofuels at private sector fuel stations.

- Provision for Establishing an Alternative Fuel Research and Development Program – The Department of Agriculture is authorized to develop and implement an alternative fuel research program to stimulate public and private research in conversion technology. This research should address converting Tennessee agricultural products, such as soybeans, switchgrass, and other biomass, into alternative fuels, as well as the production capabilities needed to deliver such alternative fuels to Tennessee consumers.

- Provision for Establishing a Biodiesel Incentive – The Department of Revenue, in consultation with the Department of Economic and Community Development, is authorized to create the Tennessee biodiesel manufacturers' incentive fund, dependent on legislative appropriations. Each eligible manufacturer may receive incentives from the fund for producing up to 10 million gallons of biodiesel annually.

- Alternative Fuel and Fuel-Efficient Vehicle Use Requirements – By January 1, 2008, all state agencies, universities, and community colleges that have more than 10 state-owned vehicles in their fleet are required to develop and implement plans to increase the state's use of alternative fuels and hybrid electric or other fuel-efficient or low-emission vehicles. Specifically, each plan must incorporate a goal to reduce or displace at least 20% of the fleet's consumption of petroleum by January 1, 2010. If the fleet includes vehicles modified for educational, emergency, or public safety purposes or vehicles used

for emergency or law enforcement purposes, the entity's plan must provide for a minimum 10% petroleum use reduction.

- Energy-Efficient Vehicle Acquisition Requirement – State fleets are encouraged to make every effort to ensure that at least 30% of newly purchased motor vehicles are energy-efficient vehicles. Energy-efficient vehicles are defined as passenger vehicles that are: alternative fuel vehicles as identified by the Energy Policy Act of 1992 (Public Law 102-486) including those using ethanol, biodiesel, or other alternative fuel; a hybrid-electric vehicle; or a conventional gasoline vehicle achieving a fuel economy of at least 25 miles per gallon or greater.

- Biofuels Committee – The Governor's Interagency Alternative Fuels Working group, supported administratively by the Department of Environment and Conservation, has been established to develop a comprehensive state alternative fuels strategy that will provide a roadmap to make Tennessee a leader in the production, distribution, and use of biofuels. The Working Group is also tasked with developing a comprehensive, statewide public education and outreach campaign to increase public awareness and understanding of alternative fuels, particularly biofuels. Furthermore, state agencies are required to strive to use ethanol and biodiesel in appropriate state-owned vehicles whenever possible and should support the development of biofuels refueling infrastructure. The Departments of General Services and Transportation are required to develop a program to educate state employees about the use of biofuels and publicize fuel availability as new refueling sites become available. The Department of Transportation must continue efforts to encourage development of publicly accessible biofuel refueling stations across the state.

- Biofuels Specifications – The Tennessee Department of Agriculture has the authority to inspect and test biofuels under the Kerosene and Motor Fuels Quality Inspection Act of 1989.

III. Facility Size

a. Current Facility Size

Using the data in Table 2, the average existing facility size is about 9-10 million gallons per year capacity. However, two size issues are important to note. First, the average size of current facilities varies depending on the feedstock, and the facility size of biodiesel plants is growing over time. The largest facilities are in the 50 to 80 million gallon range. These facilities are multi-feedstock. The average of facilities using soybean oil as their primary feedstock is just over 11 million gallons. The average of mixed feedstock facilities is also about 11 million

gallons, but the average of those using waste sources such as recycled cooking oil or trap grease is less than 1million gallons.

b. Planned Facility Size

Because the biodiesel industry is in an expansion phase, capacity of planned expansion is important in examination of facility size. From Table 3, the average planned facility size or added capacity is nearly 20 million gallons. The largest planned facilities will use mixed feedstocks. The largest planned facility is 125 million gallons (Agri-Source Fuels, Inc., Dade City, FL). Several other planned facilities are in the 80 to 100 million gallon range and will use soybean oil, canola oil, or mixed feedstocks.

IV. Prices and Costs of Production for Biodiesel

a. Prices of Biodiesel

As shown in Table 8, recently, the national average price of diesel was around $2.96, while the average price of biodiesel (B100) was $3.27, for a price wedge of $.31/gallon. When put on an energy equivalent basis, the price wedge is $.57/gallon (U.S. DOE/EERE, 2007d). In regions for which diesel and B100 prices were available, the B100 price averaged about 10 percent above conventional diesel prices.

b. Costs and Feedstocks

Biodiesel production costs have been estimated in a variety of studies. The capital costs are similar for the various feedstocks. However, the feedstock costs could vary considerably. In addition, feedstock costs are the largest contributor to biodiesel production costs. Table 9 shows the price per pound of soybean oil, canola oil, estimated price of yellow grease, and feedstock costs per gallon of biodiesel. Notably, yellow grease has the lowest feedstock costs, followed by soybean, and then canola oil. Radich (2002) estimates that feedstock costs are about 88% of

costs for biodiesel from soybean oil and about 77% for biodiesel from yellow grease. This would imply for 2006/07 an overall biodiesel cost from soybean oil of $2.98 and from yellow grease of $1.67. Canola biodiesel costs would be $0.35 to $0.40 higher than soybean due to feedstock costs. These costs can be compared with petroleum feedstock costs for conventional diesel of about $1.56 (retail price of $2.96 from Table 8) (U.S. DOE/EERE, 2007d), multiplied by crude oil percent of retail cost of 53% (U.S. DOE/EIA, Sept 2006a)).

i. Soybean Oil

For 2007, U.S. soybean oil production is estimated at 20.4 billion pounds, or 10.2 million tons. The United States is the largest producer of soybean oil followed by China, Argentina, Brazil, and the European Union. The United States' soybean oil production has increased an average of 2.40 percent from 1980 to 2006 (Figure 3). For 2006, world production of soybean oil is estimated at 38.5 million tons. Argentina is the largest exporter of soybean oil at 6.5 million tons, followed by Brazil (2.3), United States (0.6), and the European Union (0.3). For soybean oil imports in 2006, China was the largest importer at 2.1 million tons, followed by India (1.9), Iran (0.9), and the European Union (0.8). For 2006, U.S. soybean oil consumption is estimated at 19.9 billion pounds, or 9.9 million tons. The national consumption has increased an average of 2.93 percent from 1980 to 2006 (Figure 4). Nearly all soybean oil is used for food purposes. For 2007/2008, U.S. exports 1.4 billion pounds of soybean oil would have been enough to produce about 181.8 million gallons of biodiesel.

ii. Yellow Grease

Yellow grease is manufactured from spent cooking oil and other fats and oils from commercial or industrial cooking facilities. It may be vegetable oil or animal fat that has been heated and used for cooking. Yellow grease has alternative uses to biodiesel production and is

often sold to livestock feed or pet food manufacturers. About 70 to 95 percent of the available yellow grease is now being collected in metropolitan areas.

Data from 1993 to 1998 suggest the average supply of yellow grease in the United States was 2.633 billion pounds (about enough to make 344 million gallons of biodiesel). In an EIA study, it was assumed that competing uses would limit biodiesel production from yellow grease to 100 million gallons per year (Radich). If the total amount (2.633 billion pounds) is divided by the population estimates at the time (1996 population of 265 million), this is about 9.9 pounds per person.

Using this projected amount and population projections (Census Bureau) implies by 2012, about 3.111 billion pounds of yellow grease would be produced (Table 10). If about 29 percent of this could be allocated to biodiesel production, this is about 904 million pounds. This would be about 117 million gallons of biodiesel from yellow grease. Using these same assumptions, the projected potential for Tennessee is about 2.3 million gallons of biodiesel from yellow grease.

It should be noted that in addition to yellow grease, other sources of feedstock for biodiesel could include tallow and poultry fat. In 2003, inedible tallow and grease combined was about 6,245 million pounds, with 1,555 million pounds of this amount exported (USDA/NASS, Agricultural Statistics). Assuming availability rates of 29 percent for inedible tallow and grease (as with yellow grease), this would be enough biodiesel feedstock for about 235 million gallons of biodiesel based on 2003 statistics. Recent (August 2007) inedible tallow prices are $27 per hundredweight compared with recent prices for yellow grease of $19.50 (USDA/AMS, 2007). About 75 percent of domestic consumption of inedible tallow and grease goes into animal feeds.

iii. Canola Oil

An emerging biodiesel feedstock is canola oil. Canola is a name applied to edible oilseed rape and the plant belongs to the mustard family. Like soybeans, canola contains both high oil content and high protein content. It contains about 40% oil and 23% protein compared to 20% oil and 40% protein for soybeans. The U.S. produces less than 1% of the world's production of canola. However, Canada produces about 15% of the world's canola. In 2006, U.S. canola yields were 1,366 pounds per acre with about 1.4 billion pounds of total production. In 2007, just over 1 million acres were planted and harvested (Table 15). Over 90% of the acres harvested were in North Dakota. While production is concentrated in a few states, with development of varieties, canola can be produced in many states of the U.S. Canola oil production in the United States is about 1.0 billion pounds, while imports are about 1.6 billion pounds (Table 11).

There are many byproducts available when production of biodiesel from canola occurs. As with soybeans, in the extracting the oil, a meal is produced (Figure 5). The meal can be used by dairy, poultry, and swine, as well as specialty livestock. The oil can be used for a variety of purposes, one of which is biodiesel. Currently, Canada exports nearly all its canola meal to the United States along with nearly 67% of its canola exports. Canada produces canola on 11.3 million acres (ten year average) (Canola Council). Based on information on production plans, ADM is constructing or planning facilities in the northern U.S.

A comparison of canola with soybeans is provided in Table 12. While the market for canola in the U.S. is not well developed and is small in comparison with soybean markets, canola has promise as a biodiesel feedstock. A primary reason is because canola yields of oil per acre are higher than those of soybeans. Consequently, the yield of biodiesel per acre would be higher

for canola than for soybeans. Furthermore, while canola is now primarily grown in the northern states, because there are both spring and winter types, the growing region could be considerably wider. It should be noted, however, that research and development is underway to increase both soybean yields per acre and also oil yields per bushel of soybeans.

c. Glycerine Byproduct Market

The term glycerine is used for U.S. products where the principal component is glycerol. The term glycerin is used for purified commercial products containing 95 percent or more glycerol (USDA/ERS, 1996). High quality glycerine is derived from vegetable, animal origin, or synthetically. Buyers for a number of years, however, have differentiated between vegetable based or animal based glycerine. Demand for vegetable glycerine has gained prominence compared to traditional forms of natural glycerine. For consumer products such as cosmetics and toiletries, a natural or vegetable origin product is seen as a positive promotional term. Contaminated beef products resulting in increased public concern have contributed to companies specifying vegetable or synthetic glycerine (Chemical Market Reporter, 2002; Heming, 1999). Glycerine targeted for industrial uses is offered in three different types—pharmaceutical glycerine, technical glycerine, and dynamite glycerine. All three can be purchased in bulk or are packaged in 551 pound barrels.

Another issue is the increased demand for kosher-grade glycerine. Kosher grade glycerine is used in food, pharmaceuticals, and personal care products and can be vegetable or synthetic based. Kosher-grade glycerine production fulfills the desire of consumers to be absolutely certain of the purity of the product they are consuming. Price premiums for kosher quality glycerine above animal derived glycerine are not uncommon (Chemical Market Reporter, 2002; Heming, 1999).

Because of increased production from biodiesel plants, plus increased production of glycerine in general, the current glycerine market can be characterized as an abundance of supply. This rising supply and low prices is causing end-users to seek new applications for glycerine (Frost & Sullivan Market Insight, 2006). Glycerine has more than 1,500 known end uses. The manufacturing process of many pharmaceutical, food, and oral care products use refined glycerine. For the sectors that use glycerine, the food and personal care products sectors are the largest because of the trend for lower fat content in foods, particularly baked goods, and the aging baby boom generation's consumption of more skin care creams, including sunscreen lotions (Chemical Market Reporter, 2002). As biodiesel production continues to increase, an over-supply of glycerine is causing producers to seek new applications (for example, antifreeze and de-icing, plus glycerol-based solvents, to name a few) (Chemical Market Reporter, 2006). For 2006, the Environmental Protection Agency (EPA) mandates the removal of sulfur from diesel fuel. The process of removing sulfur from diesel results in the loss of natural lubricity. Fatty acids, such as glycerine and other derivatives, are increasingly being used in lubricity additive products (Chemical Market Reporter, 2006).

The glycerine market is complex, unpredictable and noted for volatile price swings. In the past, major variation in global glycerine prices has occurred. Predicting future glycerine prices is very difficult because of the large number of end uses and complexity of supply markets. For the United States, glycerine production capacity is estimated at 557 million pounds per year (2005 estimate) (Chemical Market Reporter, 2006). Demand for glycerine was estimated at 443 million pounds in 2004 and 447 million pounds in 2005 (Figure 6). Between 1995 and 2005, growth in demand averaged 1.3 percent per year. Glycerine production for 2005

is estimated at 226 million pounds, roughly 60-70 million pounds lower than 2004 production levels of 290 million pounds (Heming, 2005).

For the United States, prices continue to decrease because glycerine is plentiful and stocks are high. In 2005, glycerine prices for both kosher and tallow origin refined glycerine have dropped below $0.37 per pound (Table 13). From 1995 to 2005, glycerine prices averaged $0.61 per pound for the United States. For that same time period for the United States, the drop in price averaged 6.6 percent per year. Glycerine price forecasts for both the United States and Europe for 2006 and 2008 are presented in Table 14. United States prices are forecasted to remain relatively flat for the time period (Heming, 2005).

The worldwide oleochemicals market, which includes glycerine, is experiencing both capacity expansions, plant closures, and fluctuating supply and demand. Significant expansion is taking place in Pacific Asia, especially China, which has resulted in many European and North American players either forming joint ventures in Asia or exiting the business (Chemical Market Reporter, 2006). Because of increased biodiesel production and its affects on the glycerine market, a loss of EUR $50 to $100 million is estimated for the European market. For 2005, European Union biodiesel production was estimated at 2.6 million tons. For 2006, European biodiesel capacity is estimated at 3.4 million tons with capacity expected to increase to 4 million tons (Chemical Market Reporter, 2006).

A leading world producer of fatty acids and glycerin is Uniqema. With total production capacity at over 771 million tons per year, the company has sites in Europe, the United States and Malaysia (Chemical Market Reporter, 2006). Agribusiness firms, Cargill and Archer Daniels Midland (ADM), are planning to develop a biobased chemical business. Cargill plans to open a 37.5 million gallon biodiesel facility in 2006, plus 30 million pounds per year glycerine

refinery in Iowa (Chemical Market Reporter, 2006). ADM plans to use some of the glycerine output as feedstock for polyols production in North Dakota. Asian suppliers are opening sales offices in the United States (Chemical Market Reporter, 2006).

V. Distribution/Location Issues

Most petroleum diesel fuel is transported by pipeline from refineries and ports to terminals that are close to consumption areas. The diesel is then loaded onto tanker trucks for delivery to individual refueling stations. Unlike petroleum diesel products, biodiesel has not been transported through pipelines. Biodiesel is transported by truck and blended at the rack, which is move expensive than pipeline transport. Trucking costs are on the order of 15 times as expensive as pipeline and barging is about 2 to 3 times as expensive (Jacobs, 2002).

However, Countrymark recently announced it successfully transported a 5% biodiesel blend through its private carrier pipeline system. The ability to move biodiesel through pipelines represents a potentially significant market breakthrough because biodiesel can be transported, stored, and delivered using the same infrastructure and equipment as petroleum diesel (Imperium Renewables).

In general, biodiesel facilities are located near feedstock sources. For example, near major soybean producing areas or near urban areas for yellow grease. Table 15 displays information about where most production of canola and soybeans occur. The majority of canola is produced in North Dakota. Soybean production occurs primarily in the Midwest (Iowa, Illinois, Minnesota, Indiana, Missouri, Nebraska, and Ohio) although the production of soybeans is much more geographically dispersed than canola production. Tennessee produces about 44 million bushels of soybeans per year. At 1.4 gallons of biodiesel per bushel of soybeans, the total potential biodiesel production from Tennessee soybeans is 61.6 million gallons (about one

large scale facility). This assumes all soybean production is used for biodiesel. Also, in Table 16, projections of availability of yellow grease feedstock availability are made based upon state populations, using 9.9 pounds of yellow grease per person. For yellow grease, states with largest potential would be California, Texas, New York, Florida, Illinois, and Pennsylvania. Tennessee has the potential for about 2.3 million gallons of biodiesel from yellow grease generated in the state. Tallow is a product of livestock slaughter. Accordingly, potential for biodiesel production from inedible tallow feedstocks would be near livestock slaughter facilities. Table 17 displays the number of head and total live weight of commercial slaughter of cattle by state. For inedible beef tallow feedstocks, the states with the greatest potential would include Kansas, Nebraska, Texas, and Colorado.

As of August 2007, there were a total of 750 stations which sold biodiesel. As can be seen in Table 18, North Carolina, South Carolina, Texas, and Missouri have the largest number of stations. Tennessee has 39 stations (USDOE/EERE, 2007e).

References

Ash, M. and E. Dohlman. 2006. *Oil Crops Situation and Outlook Yearbook*. Washington, DC: U.S. Department of Agriculture/Economic Research Service, OCS-2006. Available at http://usda.mannlib.cornell.edu/usda/current/OCS-yearbook/OCS-yearbook-05-31-2006.pdf.

Canola Council of Canada. 2006. Available at http://www.canola-counci.org/portal.html.

Chemical Market Reporter. Various Dates. Available at http://www.chemexpo.com. Last accessed in 2002.

Chemical Market Reporter. Various Dates. Available at http://www.lib.utk.edu/ databases/. Last accessed in 2006.

East Tennessee Clean Fuels Coalition. Winter 2007. *East Tennessee Clean Fuels Advisor*. Quarterly Publication. Available at http://eerc.ra.utk.edu/etcfc/newsletter.html. Last accessed in 2007.

Frost & Sullivan Market Insight. 2006 (August). "R&D Creating New Avenues for Glycerine." Available at http://www.frost.com/prod/servlet/market-insight-top.pag?docid=77264824.

Heming, M. 1999. Editor, CTVO-Networkshop. Available at http://www.dainet. de/fnr/ctvo/byproducts/heming_hbi.doc. Last accessed in 2002.

Heming, M. 2005 (December). *Oleoline® Glycerine Market Report*. No. 71. Available at http://www.oleoline.com/reports.html.

Imperium Renewables. 2006. "Countrymark Moves Biodiesel Blend Through Pipeline." Available at http://www.sbd.55bell.com/archives/2006/08/index.html.

Jacobs, S. "Pipeline Factors Affecting Gasoline Prices." Colonial Pipeline FTC Conference, May 8, 2002.

National Biodiesel Board. 2007a. Biodiesel Production Graph. Available at http://www.biodiesel.org/pdf_files/fuelfactsheets/Production_Graph_Slide.pdf.

National Biodiesel Board. 2007b. Commercial Biodiesel Production Plants. Available at http://www.biodiesel.org/buyingbiodiesel/producers _marketers /ProducersMap-Existing.pdf .

National Biodiesel Board. 2007c. Biodiesel Production Plants Under Construction or Expansion. Available at http://www.biodiesel.org/ buyingbiodiesel/producers_marketers/ProducersMap-Construction.pdf .

Radich, A 2002. "Biodiesel Performance, Costs, and Use." Washington, DC: United States Department of Energy/Energy Information Administration. Available at http://www.eia.doe.gov/oiaf/analysispaper/biodiesel/index.html, 2002.

United States Census Bureau (Census Bureau). "Interim Projections of the Total Population for the United States and States: April 1, 2000 to July 1, 2030." Available at http://www.census.gov/population/projections/SummaryTabA1.pdf.

United States Department of Agriculture, Agricultural Marketing Service. August 29, 2007. Tallows, Hides, and Proteins Report. Available at http://marketnews.usda.gov/portal/lg/newsearch;jsessionid=1OPSGCBVOSJ5OCQKAE4CFEQ?results=true&_DARGS=/portal/usda/templates/html/header_left_lgmn.jsp.searchForm

United States Department of Agriculture, Economic Research Service. 2006 (August). "Agricultural Outlook." Available at http://www.ers.usda.gov/publications/agoutlook/aotables/2006/08Aug/Ao0806.pdf.

United States Department of Agriculture, Economic Research Service. 1996 (September). "Crambe, Industrial Rapeseed, and Tung Provide Valuable Oils." Industrial Uses/IUS-6. Available at http://www.ers.usda.gov/publications/IUS6/ius6c.pdf#search=%22www.ers.usda.gov%2Fpublications%2Fius6%2Fius6c.pdf%22.

United States Department of Agriculture, Foreign Agricultural Service. 2006. "Production, Supply, & Distribution Online". Available at http://www.fas.usda.gov/psd/complete_files/default.asp.

United States Department of Agriculture, National Agricultural Statistics Service. "Agricultural Statistics, Chapter 3." Available at http://www.nass.usda.gov/Publications/Ag_Statistics/agr06/CHAP03.PDF.

United States Department of Agriculture, National Agricultural Statistics Service, Quickstats, Internet site at http://www.nass.usda.gov:8080/ QuickStats/PullData_US.jsp.

United States Department of Energy, Energy Efficiency and Renewable Energy (USDOE/EERE). 2007a. "Energy Policy Act of 2005." Available at http://www.eere.energy.gov/afdc/laws/ epact_2005.html.

United States Department of Energy, Energy Efficiency and Renewable Energy (USDOE/EERE). 2007b. "State and Federal Incentives and Laws." Available at http://www.eere.energy.gov/afdc/progs/fed_all.cgi?afdc/US/0

United States Department of Energy, Energy Efficiency and Renewable Energy (USDOE/EERE). 2007c. "Tennessee Incentives and Laws." Available at http://www.eere.energy.gov/afdc/progs/state_summary.cgi?afdc/TN.

United States Department of Energy, Energy Efficiency and Renewable Energy. 2007d. "Clean Cities Alternative Fuel Price Report." Available at http://www.eere.energy.gov/afdc/resources/pricereport/pdfs/afpr_jul07.pdf .

United States Department of Energy, Alternative Fuels Data Center. 2007e. (August). "Alternative Fueling Station Counts by State and Fuel Type." Available at http://www.eere.energy.gov/afdc/infrastructure/station_counts.html.

United States Department of Energy, Energy Information Administration. 2006 (February). "Annual Energy Outlook 2006 With Projections to 2030." DOE/EIA-0383(2006). Available at http://www.eia.doe.gov/oiaf/aeo/pdf/ 0383(2006).pdf.

United States Department of Energy, Energy Information Administration. 2006a (September). "Gasoline and Fuel Update." Available at http://tonto.eia. doe.gov/oog/info/gdu/gasdiesel.asp.

United States Department of Energy, Energy Information Administration. 2006b (September). "Short-Term Energy Outlook." Available at http://www.eia. doe.gov/emeu/steo/pub/contents.html.

Urbanchuk, J. 2006. "Contribution Of The Biodiesel Industry To The Economy Of The United States." Prepared for the National Biodiesel Board With Funding Support from the United Soybean Board. Available at http://www.biodiesel.org/ resources/reportsdatabase/reports/gen/20060720_gen-371.pdf#search=%22 biodiesel%20demand%22.

APPENDIX

Tables and Figures

Table 1. Biodiesel Production in the United States.

Fiscal Year	U.S. Biodiesel Production (Million Gallons)	Percent Annual Growth
1999	0.5	
2000	2	300.0%
2001	5	150.0%
2002	15	200.0%
2003	20	33.3%
2004	25	25.0%
2005	75	200.0%
2006	250	233.3%

(Source: National Biodiesel Board, http://www.biodiesel.org/pdf_files/fuelfactsheets/ Biodiesel_Sales_ Graph.pdf)

Table 2. Existing Biodiesel Production Plants.

State	Company Name	City	Annual Production Capacity	Primary Feedstock
AL	Alabama Biodiesel Corporation	Moundville		Soy
AL	Allied Renewable Energy, LLC	Birmingham	15,000,000	Soy
AL	Eagle Biodiesel, Inc.	Bridgeport	30,000,000	
AL	Independence Renewable Energy Corp	Perdue Hill	40,000,000	Multi Feedstock
AR	FurtureFuel Chemical Company	Batesville	24,000,000	Multi Feedstock
AR	Patriot Biofuels, Inc.	Stuttgart	3,000,000	Multi Feedstock
CA	Bay Biodiesel, LLC	San Jose	3,000,000	Soy
CA	Biodiesel Industries of Port Hueneme	Port Hueneme	3,000,000	Multi Feedstock
CA	Blue Sky Bio-Fuels, Inc.	Oakland		Multi Feedstock
CA	Central Valley Biofuels, LLC	Orange Cove		Soy, Cottonseed
CA	Energy Alternative Solutions, Inc	Gonzales	4,000,000	Multi Feedstock
CA	Evergreen Biodiesel	Big Oak Flat	50,000	Recycled Cooking Oil
CA	Imperial Western Products	Coachella	8,000,000	Multi Feedstock
CA	So Cal Biofuel	Anaheim	1,100,000	Yellow Grease
CA	Yokayo Biofuels, Inc.	Ukiah	250,000	Recycled Cooking Oil
CO	American Agri-Diesel LLC	Burlington	6,000,000	Soy
CO	Bio Energy of America	Denver	10,000,000	Soy
CO	Bio Energy of America	Denver	8,000,000	Soy
CT	BioPur Inc.	Bethlehem	1,000,000	Multi Feedstock
DE	Mid-Atlantic Biodiesel	Clayton	6,500,000	Multi Feedstock
FL	Purada Processing, LLC	Lakeland	18,000,000	Soy
GA	Georgia Biofuels Corp.	Loganville	1,000,000	Plant Oils, Animal Fats
GA	Middle Georgia Biofuels	East Dublin	2,500,000	Multi Feedstock
GA	Peach State Labs	Rome		Soy
GA	Sunshine BioFuels, LLC	Camilla	6,000,000	Soy
GA	US Biofuels Inc.	Rome	10,000,000	Multi Feedstock
HI	Pacific Biodiesel	Honolulu	1,000,000	Recycled Cooking Oil
HI	Pacific Biodiesel	Kahului	500,000	Recycled Cooking Oil
IA	AGP	Sergeant Bluff	30,000,000	Soy
IA	Cargill	Iowa Falls	37,500,000	Soy
IA	Central Iowa Energy, LLC	Newton	30,000,000	Multi Feedstock
IA	Clinton County Bio Energy, LLC	Clinton	10,000,000	Soy
IA	Freedom Fuels, LLC	Mason City	30,000,000	Soy
IA	Renewable Energy Group, Inc.	Ralston	12,000,000	Soy
IA	Riksch BioFuels, LLC	Crawfordsville	10,000,000	Multi Feedstock
IA	Sioux Biochemical, Inc.	Sioux Center	2,000,000	Corn
IA	Soy Solutions	Milford	2,000,000	Soy
IA	Tri-City Energy	Keokuk	5,000,000	Soy
IA	Western Iowa Energy	Wall Lake	30,000,000	Multi Feedstock
ID	Blue Sky Biodiesel, LLC	New Plymouth	10,000,000	Soy
IL	Incobrasa Industries, Ltd.	Gilman	31,000,000	Soy
IL	Midwest Biodiesel Products, Inc.	South Roxanna	30,000,000	Soy
IL	Stepan Company	Millsdale	22,000,000	Soy
IN	Evergreen Renewables	Hammond	5,000,000	Soy
IN	Heartland Biofuel	Flora	450,000	Multi Feedstock
IN	Integrity Biofuels	Morristown	10,000,000	Soy
IN	P.E.C. Biofuels IN, Inc.	Elkhart		
KY	Griffin Industries	Butler	2,000,000	Multi Feedstock
KY	Union County Biodiesel Company, LLC	Sturgis	5,000,000	Soy
LA	Allegro Biodiesel Corporation	Pollock	12,000,000	Soy
MA	MBP Bioenergy, LLC	West Bridgewater	500,000	Recycled Cooking Oil
MD	Maryland Biodiesel	Berlin	1,000,000	Soy
ME	Bio Renewable Fuels	Fairfield	10,000,000	Yellow Grease
MI	Ag Solutions, Inc.	Gladstone	5,000,000	Multi Feedstock

Table 2. Existing Biodiesel Production Plants.

State	Company Name	City	Annual Production Capacity	Primary Feedstock
MI	Michigan Biodiesel, LLC	Bangor	10,000,000	Soy
MN	FUMPA BioFuels	Redwood Falls	3,000,000	Multi Feedstock
MN	Green Range Renewable Energy	Ironton	150,000	Recycled Cooking Oil
MN	Midwest Renewable LLC	Menahga	4,000,000	Soy
MN	Minnesota Soybean Processors	Brewster	30,000,000	Soy
MN	Soymor	Albert Lea	30,000,000	Soy
MO	Global Fuels, LLC	Dexter	3,000,000	Multi Feedstock
MO	Mid America Biofuels, LLC	Mexico	30,000,000	Soy
MO	Missouri Better Bean	Bunceton	15,000,000	Multi Feedstock
MO	Missouri Bio-Products, Inc.	Bethel	2,000,000	Multi Feedstock
MO	Natural Biodiesel Plant, LLC	Hayti	5,000,000	Multi Feedstock
MS	CFC Transportation, Inc	Columbus	1,500,000	Multi Feedstock
MS	Channel Chemical Corporation	Gulfport	5,000,000	Soy
MS	Delta Biofuels, Inc.	Natchez	80,000,000	Multi Feedstock
MS	North Mississippi Biodiesel	New Albany	7,000,000	Soy
NC	Blue Ridge Biofuels	Asheville	1,000,000	Multi Feedstock
NC	Evans Environmental Energies, Inc.	Wilson	6,000,000	
NC	Foothills Bio-Energies, LLC	Lenoir	5,000,000	Multi Feedstock
NC	Gortman Biofuel, LLC	Winston Salem	100,000	
NC	North Carolina BioFuels, LLC	Seaboard	1,000,000	Soy
NC	Piedmont Biofuels	Pittsboro	4,000,000	Multi Feedstock
NC	Smoky Mountain Biofuels, Inc	Cullowhee		
NE	Horizon Biofuels, Inc.	Arlington	500,000	Animal Fat
NE	Pioneer Biodiesel, LLC	Gering	2,000,000	Soy
NE	Wyobraska Biodiesel, LLC	Gering	10,000,000	Soy
NJ	Eastern BioFuels, LLC	Newark	24,000,000	Soy, Palm
NJ	Fuel Bio One, LLC	Elizabeth	50,000,000	Multi Feedstock
NM	Rio Valley Biofuels, LLC	Anthony		Multi Feedstock
NV	Bently Biofuels	Minden	1,000,000	Multi Feedstock
NV	Biodiesel of Las Vegas	Las Vegas	5,000,000	Multi Feedstock
NY	North American Biofuels Company	Bohemia	2,500,000	Trap Grease, Recycle Cooking Oil
NY	Sheppard Grain, Inc.	Phelps		Soy
OH	Agrifuels, LLC	Bremen	3,000,000	Soy
OH	American Ag Fuels, LLC	Defiance	1,500,000	Multi Feedstock
OH	Center Alternative Energy Company	Cleveland	5,000,000	Soy
OH	Jatrodiesel Inc.	Miamisburg	5,000,000	Multi Feedstock
OH	PEC Biofuels	Hicksville	7,500,000	Soy
OH	Peter Cremer	Cincinnati	30,000,000	Soy
OK	Earth Biofuels, Inc.	Durant	10,000,000	Multi Feedstock
OK	Green Country Biodiesel, Inc	Chelsea	2,500,000	Multi Feedstock
OR	Green Fuels of Oregon, Inc.	Klamath Falls	1,000,000	Canola
OR	SeQuential-Pacific Biodiesel, LLC	Salem	1,000,000	Multi Feedstock
PA	Biodiesel of Pensylvania, Inc.	White Deer	1,500,000	Soybean Oil
PA	Keystone BioFuels, Inc.	Shiremanstown		Soy
PA	Soy Energy, Inc.	New Oxford	1,500,000	Soy
PA	United Biofuels, Inc.	York	1,500,000	Soy
PA	United Oil Company	Pittsburgh	5,000,000	Multi Feedstock
RI	Mason Biodiesel, LLC	Westerly	2,500,000	Soy
SC	Carolina Biofuels, LLC	Greenville	30,000,000	Soy
SC	Southeast BioDiesel, LLC	Charleston	6,000,000	Multi Feedstock
SD	Midwest BioDiesel Producers, LLC	Alexandria	7,000,000	Soy
TN	Agri-Energy, Inc	Louisburg	5,000,000	Soy
TN	BIG Biodiesel, LLC	Pulaski	250,000	Soy
TN	Biofuel of Tennessee, LLC	Decaturville	10,000,000	Soy
TN	Blue Sky Biodiesel, Inc.	Wartburg	3,000,000	Multi Feedstock

Table 2. Existing Biodiesel Production Plants.

State	Company Name	City	Annual Production Capacity	Primary Feedstock
TN	Memphis Biofuels, LLC	Memphis	50,000,000	Multi Feedstock
TN	Milagro Biofuels of Memphis	Memphis	5,000,000	Soy
TN	NuOil	Counce	1,500,000	Soy
TN	TN Bio Energy	Summitville		Soy
TX	Agribiofuels, LLC	Dayton		
TX	AgriMax Fuels, LLC	Channelview	3,000,000	Soy
TX	Biodiesel Industries of Greater Dallas-Fort Worth	Denton	3,000,000	Multi Feedstock
TX	BioSelect Fuels (GBBLP)	Galveston	21,000,000	Multi Feedstock
TX	Brownfield Biodiesel, LLC	Ralls	2,000,000	Cottonseed, Soy, Canola
TX	Central Texas Biofuels	Giddings	1,500,000	Waste Vegetable Oil
TX	ECO Friendly Products, Inc.	Channelview	3,000,000	Multi Feedstock
TX	GeoGreen Fuels, LLC	Gonzales	3,000,000	Multi Feedstock
TX	Huish Detergents	Pasadena	15,000,000	Palm
TX	Johann Haltermann Ltd	Houston	20,000,000	Soy
TX	Kemlink Energy, Inc.	Pasadena	2,500,000	Multi Feedstock
TX	Momentum Biofuels, Inc.	Pasadena	20,000,000	Soy, tallow
TX	New Fuel Company	Dallas	250,000	Multi Feedstock
TX	NMM, Ltd	Channelview	1,000,000	Soy
TX	Organic Fuels, LLC	Galena Park	30,000,000	Multi Feedstock
TX	Pacific Biodiesel Texas	Hillsboro	2,500,000	Multi Feedstock
TX	Safe Renewable Corp.	Conroe	30,000,000	Multi Feedstock
TX	Smithfield Bioenergy LLC	Cleburne	12,000,000	Multi Feedstock
TX	SMS Envirofuels	Poteet	6,000,000	Soy
TX	Valco Bioenergy	Harlingen	3,000,000	Cottonseed
UT	Domestic Energy Partners	Spanish Fork	9,000,000	Multi Feedstock
VA	Chesapeake Custom Chemical	Ridgeway	5,000,000	Soy
VA	RECO Biodiesel, LLC	Richmond	10,000,000	Soy
VA	Renroh Environmental Company	South Boston	80,000	
VA	Virginia Biodiesel Refinery	New Kent	7,000,000	Soy
WA	Central Washington Biodiesel, LLC	Ellensburg		Multi Feedstock
WA	Gen-X Energy Group, Inc.	Burbank	15,000,000	Multi Feedstock
WA	Olympic Biofuels. LLC	Poulsbo	200,000	Multi Feedstock
WA	Seattle Biodiesel	Seattle	5,000,000	Multi Feedstock
WA	Standard Biodiesel USA Inc.	Arlington	5,000,000	Waste Vegetable Oil
WI	Renewable Alternatives	Manitowoc		Soy
WI	Sanimax Energy Inc.	Deforest	20,000,000	Multi Feedstock
WI	Walsh Bio Diesel, LLC	Mauston	5,000,000	Soy
WI	WRR Environmental Services	Eau Claire		Multi Feedstock
WY	Blue Sky Biodiesel, LLC	Cheyenne	5,000,000	Soy
			1,343,380,000	Total
			10,025,224	Average

(Source: National Biodiesel Board, http://www.biodiesel.org/buyingbiodiesel/producers_marketers/ProducersMap-Existing.pdf)

Table 3. Planned New and Expansion of Production Facilities.

State	Company	City	Annual Production Capacity	Primary Feedstock	Target Completion Date
AR	Ag BioEnergy, LLC	Arkansas City	6,000,000	Soy	September 2007
AR	Delta American Fuel, LLC	Helena	40,000,000	Multi Feedstock	June 2007
AR	Pinnacle Biofuels, Inc.	Crossett	10,000,000	Multi Feedstock	September 2007
AZ	Amereco Arizona, LLC	Arlington	15,000,000	Multi Feedstock	August 2007
CA	Biodiesel Industries of Port Hueneme	Port Hueneme	7,000,000	Full Spectrum	October 2007
CA	GeoGreen Biofuels, LLC	Vernon	3,000,000	Recycled Cooking Oil	August 2007
CA	Greener Tomorrow	Chino		Recycled Cooking Oil	June 2007
CA	LC Biofuels	Richmond	365,000	Multi Feedstock	December 2007
CA	Noil Energy Group	Commerce	5,000,000	Multi Feedstock	December 2007
CA	Sacramento Biofuels, LLC	Sacramento			March 2008
CO	Great White Bottling, Inc.	Denver	4,000,000	Soy	August 2007
CO	Prospect Biofuels, LLC	Keenesburg	5,000,000	Soy	June 2007
CT	BioDiesel One Ltd	Southington	4,000,000	Recycled Cooking Oil	August 2007
CT	CT Biodiesel, LLC	Cheshire	4,000,000	Yellow Grease, Tallow, Soy, Poultry Fat	July 2007
FL	Agri-Source Fuels, Inc.	Dade City	125,000,000	Multi Feedstock	June 2007
FL	U.S. Biodiesel, Inc.	Winter Haven	5,000,000		August 2007
FL	Xenerga, Inc.	Kissimmee	5,000,000	Recycled Cooking Oil, Animal Fats	September 2007
GA	Alterra Bioenergy of Middle Georgia, LLC	Gordon	15,000,000	Soy	July 2007
GA	Alterra Bioenergy of Plains Georgia, LLC	Plains	30,000,000	Soy	December 2
GA	ECO Solutions, LLC	Chatsworth	25,000,000	Multi Feedstock	May 2007
GA	Farmers & Truckers Biodiesel of Georgia, LLC	Augusta	5,000,000	Soy, Poultry Fat	June 2007
GA	Georgia Mountain Biofuels, Inc.	Toccoa	2,000,000	Multi Feedstock	October 20
GA	Southwest Georgia Oil Company, Inc.	Bainbridge	10,000,000	Multi Feedstock	October 20
IA	East Fork Biodiesel, LLC	Algona	60,000,000	Multi Feedstock	October 20
IA	Iowa Renewable Energy, LLC	Washington	30,000,000	Multi Feedstock	July 2007
IA	Western Dubuque Biodiesel	Farley	30,000,000	Soy	July 2007
ID	Premier Fuel Company, Inc.	Rupert		Soy, Canola	August 200
IL	Biofuels Company of America, LLC	Danville	45,000,000	Soy	1st Q 2008
IL	Diamond Biofuels	Mazon	500,000	Animal Fats, Recycled Cooking Oil	July 2007
IL	Heartland Biodiesel, Inc.	Marion	5,000,000	Soy	July 2007
IL	Nova Biosource	Senaca	60,000,000	Multi Feedstock	July 2008
IN	e-biofuels, LLC	Middletown	25,000,000	Soy	June 2007
IN	Louis Dreyfus Agricultural Industries, LLC	Claypool	80,000,000	Soy	October 20
IN	SNEBio, LLC	Newburgh	15,000,000	Soy	August 200
KS	Healy Biodiesel, Inc.	Sedgwick	1,000,000	Recycled Cooking Oil	June 2007
KS	Krystal Clean Biofuels	Lenexa		Multi Feedstock	
KY	Owensboro Grain	Owensboro	50,000,000	Soy	August 2007
MD	Chesapeake Green Fuels, LLC	Adamstown	1,000,000	Multi Feedstock	June 2007
MD	Greenlight Biofuels, LLC	Princess Anne	4,000,000	Multi Feedstock	4Q 2007
MI	Biodiesel Industries of Detroit	Detroit	10,000,000	Full Spectrum	September 2007
MI	NextDiesel	Adrian	20,000,000	Multi Feedstock	June 2007
MI	Northwest Michigan Biofuels	South Boardman	500,000	Yellow Grease, Soy	Fall 2007
MO	AGP	St. Joseph	30,000,000	Soy	September 2007

Table 3. Planned New and Expansion of Production Facilities.

State	Company	City	Annual Production Capacity	Primary Feedstock	Target Completion Date
MO	Great River Soy Processing Cooperative	Lilbourn	5,000,000	Soy	October 2007
MO	High Hill Biodiesel, Inc.	High Hill	5,000,000	Multi Feedstock	June 2007
MO	Paseo Biofuels, LLC	Kansas City	40,000,000	Soy, Animal Fats	December 2007
MO	Prairie Pride	Deerfield	30,000,000	Soy	December 2007
MS	Scott Petroleum Corporation	Greenville	20,000,000	Multi Feedstock	September 2007
MS	Universal Bioenergy North America, Inc	Nettleton	40,000,000		June 2007
NC	American Distillation, Inc.	Leland	1,500,000	Soy	July 2007
NC	Filter Specialty Bioenergy LLC	Autryville	1,600,000	Multi Feedstock	December 2007
NC	Triangle Biofuels Industries, Inc.	Wilson	1,500,000	Multi Feedstock	June 2007
ND	ADM	Velva	85,000,000	Canola	July 2007
ND	All American Biodiesel	York	2,000,000	Soy	August 2007
ND	Dakota Skies Biodiesel, LLC	Minot	10,000,000	Canola	December 2008
NE	Beatrice Biodiesel, LLC	Beatrice	50,000,000	Soy	September 20
NE	Northeast Nebraska Biodiesel, LLC	Scribner		Soy	June 2007
NE	Sunrise Biodiesel, Inc.	Grant	12,000,000	Tallow, Soy	July 2007
NJ	Bio Energy of America	Edison	60,000,000	Soy	July 2007
NM	ARES Blue Sun Development	Clovis	15,000,000	Multi Feedstock	December 200
NV	Biodiesel of Las Vegas	Las Vegas	60,000,000	Multi Feedstock	November 200
NY	NextGen Fuel, Inc	Fulton	1,000,000	Soy	February 2007
NY	Tri-State Biodiesel, LLC	Brooklyn	5,000,000	Recycled Cooking Oil	February 2008
OH	American Ag Fuels, LLC	Defiance	5,500,000	Multi Feedstock	August 2007
OH	American Made Fuels, Inc.	Canton	3,000,000		June 2007
OH	Deep Fried Diesel, LLC	Cincinnati		Waste Vegetable Oil	August 2007
OK	Best Energy Solutions, LLC	Tulsa	1,000,000	Soy	August 2007
OK	High Plains Bioenergy	Guymon	30,000,000	Multi Feedstock	September 200
OR	SeQuential-Pacific Biodiesel, LLC	Salem	4,000,000	Multi Feedstock	February 2008
PA	Choice FuelCorp Inc.	South Williamsport	2,000,000	Multi Feedstock	June 2007
PA	Keystone BioFuels, Inc.	Shiremanstown		Soy	August 2007
PA	Lake Erie Biofuels	Erie	45,000,000	Soy	August 2007
PA	Middletown Biofuels, LLC	Middletown	2,000,000	Soy	August 2007
PA	PA Biofuels, LLC	Pittsburgh	5,000,000	Tallow, Yellow Grease	December 2007
RI	Newport Biodiesel, LLC	Newport	500,000	Recycled Cooking Oil	August 2008
SC	Ecogy Biofuels, LLC	Estill	30,000,000	Soy	September 2007
TN	Freedom Biofuels, Inc.	Madison	12,000,000	Soy	June 2007
TN	Green Earth Bio-Fuel, Inc	Parsons	2,000,000	Soy	June 2007
TN	Nu-Energie, LLC	Surgoinsville	10,000,000	Multi Feedstock	August 2007
TX	Ag Fuels Ltd	Sealy	3,600,000		August 2007
TX	Big Daddy's Biodiesel, Inc.	Hereford	30,000,000	Soy	Fall 2007
TX	Biodiesel Industries of Greater Dallas-Fort Worth	Denton	7,000,000	Multi Feedstock	December 2007
TX	Bio-Renewable Technologies, LLC	Converse	1,000,000	Multi Feedstock	August 2007
TX	Direct Fuels	Euless	10,000,000	Multi Feedstock	September 2007
TX	Fuel & Lube, LLC	Richmond	5,000,000	Recycled Cooking Oil	July 2007
TX	Green Diesel, LLC	Houston		Soy	June 2007
TX	Green Earth Fuels of Houston, LLC	Houston	86,000,000	Multi Feedstock	July 2007
TX	Greenlight Biofuels, Ltd.	Littlefield	5,000,000	Cottonseed, Animal Fats	June 2007

Table 3. Planned New and Expansion of Production Facilities.

State	Company	City	Annual Production Capacity	Primary Feedstock	Target Completion Date
TX	Lipetrol Technologies, LP	Pine Hurst	10,000,000	Multi Feestock	June 2007
TX	NFE Biofuels	Houston	60,000,000	Multi Feedstock	October 2008
TX	Paquin Energy and Fuel	Fort Worth	10,000,000	Multi Feedstock	August 2007
TX	Red River Biodiesel Ltd.	Texarkana	15,000,000	Multi Feedstock	December 2007
TX	Texas Biotech, Inc	Arlington			July 2007
UT	Washakie Renewable Energy, LLC	Plymouth			July 2007
VA	Red Birch Energy, Inc.	Martinsville	1,000,000	Multi Feedstock	September 2007
WA	Imperium Grays Harbor	Hoquiam	100,000,000	Multi Feedstock	July 2007
WA	Inland Empire Oilseeds, LLC	Odessa	8,500,000	Canola	February 2008
WA	TG Energy, Inc.	Ferndale	10,000,000	Canola, Soy	September 2007
WI	Best Biodiesel, Inc.	Cashton	8,000,000	Soy	July 2007
WI	North Prairie Productions, LLC	Evansville	45,000,000	Soy	July 2008
WV	AC & S, Inc.	Nitro	3,000,000	Soy	August 2007

(Source: National Biodiesel Board, http://www.biodiesel.org/buyingbiodiesel/producers_marketers/ProducersMap-Construction.pdf)

Table 4. Summary of Existing Biodiesel Facilities for Tennessee, 2006.

Name	City	County	Capacity	Feedstock	Production
Agri-Energy, Inc	Lewisburg	Marshall	5,000,000	Soybean Oil	Feb-06
FreedomBiofuels	Madison	Davidson	12,000,000	Soybean Oil	Dec-06
Memphis Biofuels	Memphis	Shelby	50,000,000	Multiple Feedstocks	Nov-06
Milagro Biofuels	Memphis	Shelby	5,000,000	Soybean Oil	Oct-06
NuOil, Inc	Counce	Hardin	6,000,000	Soybean Oil	Nov-05
TN Bioenergy, Inc	Summitville	Coffee	2,500,000	Yellow Grease	Mar-06
Total			80,500,000		

Source: East Tennessee Clean Fuels Coalition, East Tennessee Clean Fuels Advisor, Quarterly Publication, Winter 2007.

Table 5. Summary of Planned Biodiesel Facilities for Tennessee, 2006.

Name	City	County	Capacity	Feedstock	Production
Alabama Bioenergy, Inc	Bridgeport	Jackson	10,000,000	Soybean Oil	Jan-07
BioPowerUSA, LLC	TBD	Knox	5,000,000	Multiple Feedstocks	Sep-07
Biofuels of TN	Decaturville	Decatur	10,000,000	Soybean Oil	Jan-07
Energia Fuels, LLC	Greenfield	Weakley	50,000,000	Soybean Oil	TBD
GS Agrifuels Corp	Memphis	Shelby	10,000,000	Animal Fat	Jul-07
Northington Energy	Wartburg	Morgan	1,000,000	Soybean Oil	May-07
TN Bioenergy, Inc	Manchester	Coffee	6,000,000	Soybean Oil	Feb-07
Total			92,000,000		

Source: East Tennessee Clean Fuels Coalition, East Tennessee Clean Fuels Advisor, Quarterly Publication, Winter 2007

Table 6. Projections of Biodiesel Production under High Oil Price Scenario by Urbanchuk.

Year	Transportation Diesel Use	Projected Biodiesel	Percent Annual Growth in Biodiesel
	(Million Gallons)		
2005	43,240.4	75.0	
2006	44,441.3	150.0	100.0%
2007	45,538.6	172.0	14.7%
2008	46,359.8	215.6	25.3%
2009	47,369.0	269.5	25.0%
2010	48,392.6	323.4	20.0%
2011	49,409.2	388.1	20.0%
2012	50,228.3	465.8	20.0%
2013	50,964.0	535.6	15.0%
2014	51,624.3	589.2	10.0%
2015	52,309.7	648.1	10.0%

(Source: Urbanchuk, 2006).

Table 7. Projections of Biodiesel Production Based on NBB Current and Planned Capacity with Growth to Reach 90% of Current and Planned Capacity by 2012.

Year	Projected Production (Billion Gallons)	Percent Annual Growth
2006	.25	
2007	.88*	
2008	2.1*	
2009	2.4	9.1%
2010	2.6	8.3%
2011	2.8	7.7%
2012	3.0	7.1%

*Projected 2007 production is current of 1.39 capacity multiplied by the recently used 63% of capacity. Projected 2008 production using current capacity and planned capacity of 3.3 billion gallons recently used 63% of capacity (National Biodiesel Board).

Table 8. Retail Diesel and Biodiesel Prices, July 2007.

	New England	Central Atlantic	Lower Atlantic	Midwest	Gulf Coast	Rocky Mountain	West Coast	National Average
				($/gallon)				
Diesel Prices	3.03	2.96	2.87	2.92	2.85	3.03	3.10	2.96
Biodiesel Prices (2 - 5% blend)		2.97	2.81		2.90	2.95	3.01	2.84
Biodiesel Prices (20% blend)	2.98	3.13	2.85	2.81	2.90	3.08	3.07	2.96
Biodiesel Prices (99-100% blend)		3.26	3.41	2.85	3.09	3.52	3.24	3.27

(Source: Clean Cities Alternative Fuel Price Report, July 2007, http://www.eere.energy.gov/afdc/resources/pricereport/price_report.html).

Table 9. Soybean Oil, Canola Oil, and Yellow Grease Feedstock Prices and Costs in Biodiesel.

	Feedstock Prices (cents/lb)			Feedstock Costs in Cents per Gallon (assuming 7.7 pounds per gallon)		
Marketing Year	Soybean Oil	Canola Oil	Yellow Grease*	Soybean Oil	Canola Oil	Yellow Grease*
1996/97	22.5	25.68	11.03	1.73	1.98	0.85
1997/98	25.8	28.83	12.64	1.99	2.22	0.97
1998/99	19.9	22.48	9.75	1.53	1.73	0.75
1999/00	15.6	17.11	7.64	1.20	1.32	0.59
2000/01	14.15	17.56	6.93	1.09	1.35	0.53
2001/02	16.46	23.45	8.07	1.27	1.81	0.62
2002/03	22.04	29.75	10.80	1.70	2.29	0.83
2003/04	29.97	33.76	14.69	2.31	2.60	1.13
2004/05	23.01	30.78	11.27	1.77	2.37	0.87
2005/06	23.75	29.00	11.64	1.83	2.23	0.90
2006/07	32.0-36.0	38.0-41.0	16.66	2.62	3.04	1.28

*Yellow grease prices are estimated at 49% of soybean oil prices.
(Source: Ash and Dohlman, 2007)

Table 10. Projected Yellow Grease Production and Yellow Grease Biodiesel Potential.

Year	Projected U.S. Population*	Projected Pounds Yellow Grease (Projected population x 9.9)	Available for Use Adjustment Using EIA Ratio (Projected pounds x 0.29)	Biodiesel Gallons from Yellow Grease (7.7 pounds per gallon biodiesel)
2005	295,507,134	2,925,520,627	850,442,043	110,447,019
2006	298,217,215	2,952,350,429	858,241,404	111,459,923
2007	300,912,947	2,979,038,175	865,999,470	112,467,464
2008	303,597,646	3,005,616,695	873,725,784	113,470,881
2009	306,272,395	3,032,096,711	881,423,462	114,470,579
2010	308,935,581	3,058,462,252	889,087,864	115,465,956
2011	311,600,880	3,084,848,712	896,758,347	116,462,123
2012	**314,281,098**	**3,111,382,870**	**904,471,765**	**117,463,866**
2013	316,971,485	3,138,017,702	912,214,448	118,469,409
2014	319,667,598	3,164,709,220	919,973,611	119,477,092
2015	322,365,787	3,191,421,291	927,738,747	120,485,552

*(Source: United States Census Bureau).

Table 11. Canola Oil: Supply and Disappearance, United States, 1991/92-2005/06

Beginning Oct.1	Beginning Stocks	Production	Imports	Total	Domestic	Exports	Total	Ending Stocks	Price (Midwest)
			Million pounds						Cents/lb
1991/92	41	25	815	881	795	15	810	71	23.65
1992/93	71	49	861	981	898	16	914	67	21.98
1993/94	67	406	902	1,375	1,162	76	1,238	137	23.97
1994/95	137	299	938	1,374	1,167	153	1,320	54	28.55
1995/96	54	356	1,086	1,496	1,272	147	1,419	77	29.03
1996/97	77	342	1,075	1,494	1,134	295	1,429	65	25.68
1997/98	65	451	1,088	1,604	1,143	349	1,492	112	28.83
1998/99	112	548	1,060	1,720	1,279	272	1,551	169	22.48
1999/00	169	617	1,139	1,925	1,435	284	1,719	206	17.11
2000/01	206	641	1,193	2,040	1,743	187	1,930	110	17.56
2001/02	110	582	1,108	1,800	1,493	255	1,748	52	23.45
2002/03	52	496	981	1,529	1,284	161	1,445	84	29.75
2003/04	84	601	1,223	1,908	1,539	278	1,817	91	33.76
2004/05	91	776	1,134	2,001	1,609	264	1,873	128	30.78
2005/06	128	899	1,604	2,632	1,898	471	2,369	263	31.00
2006/07	263	1,014	1,589	866	084	661	745	121	38.0-41.0

(Source: Ash, M. and E. Dohlman)

Table 12. Comparison of Canola and Soybeans.

	Soybeans	Canola
Oilseed yield/acre	2,550*	1,414
Oil pounds /pound oilseed	0.187**	0.383
Oil pounds/acre	476.00	541.56
Biodiesel gallons/acre	61.82	70.33
Total pounds of oilseed produced in U.S. (2006)	191,294,820,000	1,394,332,000
Total oil production (million pounds) (2006/2007)	20,430	1,014
Oil price (cents per pound)	32-36	38-41

*At 60 pounds per bushel, soybean yields of 42.5 bushels per acre would be about 2550 pounds per acre.
**The pounds of soybean oil per bushel are 11.2, so the gallons of oil per pound of soybeans would be about .187.

Table 13. U.S. and European Year-End Spot Prices of Kosher Quality Refined Glycerine, Bulk Delivered, 1995-2005.

Year	USA	Europe
	Cents/pound	Euro/metric ton
1995	105	1508
1996	80	1048
1997	52	844
1998	57	946
1999	58	1023
2000	75	1457
2001	47	997
2002	67	1180
2003	52	630
2004	45	570
2005	37	450
Average	61	968

(Source: Oleoline® Glycerine Market Report, No. 71, December 2005, Editor: M.P.D. Heming at http://www.oleoline.com/reports.html).

Table 14. Glycerine Price Forecasts, 2006-2008

Country	Mid 2006	End 2006	2008
United States			
99.5% Kosher spot price	USD 0.35 c/lb	USD 0.34 c/lb	USD 0.34 c/lb
99.5% tallow-based spot price	USD 0.30 c/lb	USD 0.30 c/lb	USD 0.30 c/lb
Europe			
99.5% Kosher spot price	EUR 450	EUR 425	EUR 410
99.5% tallow-based spot price	EUR 425	EUR 400	EUR 400
80% crude glycerine	EUR 125	EUR 125	EUR 150

(Source: Oleoline® Glycerine Market Report, No. 71, December 2005, Editor: M.P.D. Heming at http://www.oleoline.com/reports.html).

Table 15. Crop Feedstock Production with Potential for Biodiesel Use, by State, 2007.

State	Planted	Harvested	Yield	Production	Price per Unit	Value of
			Soybeans:			
	(1,000 acres)	(1,000 acres)	(bushels/acre)	(bushels)	($/bushel)	(1,000 $)
Iowa	10,150	10,100	50.5	510,050,000	6.25	3,187,813
Illinois	10,100	10,050	48	482,400,000	6.40	3,087,360
Minnesota	7,350	7,250	44	319,000,000	5.95	1,898,050
Indiana	5,700	5,680	50	284,000,000	6.30	1,789,200
Missouri	5,150	5,110	38	194,180,000	6.30	1,223,334
Nebraska	5,050	5,010	50	250,500,000	5.90	1,477,950
Ohio	4,650	4,620	47	217,140,000	6.25	1,357,125
South Dakota	3,950	3,850	34	130,900,000	5.70	746,130
North Dakota	3,900	3,870	31	119,970,000	5.85	701,825
Kansas	3,150	3,080	32	98,560,000	6.10	601,216
Arkansas	3,110	3,070	35	107,450,000	6.50	698,425
Michigan	2,000	1,990	45	89,550,000	6.10	546,255
Mississippi	1,670	1,650	26	42,900,000	6.30	270,270
Wisconsin	1,650	1,640	44	72,160,000	5.90	425,744
Kentucky	1,380	1,370	44	60,280,000	6.75	406,890
North Carolina	1,370	1,360	32	43,520,000	6.30	274,176
Tennessee	1,160	1,130	39	44,070,000	6.30	277,641
Louisiana	870	840	35	29,400,000	5.95	174,930
Virginia	520	510	31	15,810,000	6.20	98,022
Maryland	470	465	34	15,810,000	5.95	94,070
Pennsylvania	430	425	40	17,000,000	5.75	97,750
South Carolina	400	390	29	11,310,000	6.30	71,253
Oklahoma	310	215	17	3,655,000	6.20	22,661
Texas	225	155	24	3,720,000	5.40	20,088
New York	200	198	46	9,108,000	5.45	49,639
Delaware	180	177	31	5,487,000	6.00	32,922
Alabama	160	150	20	3,000,000	6.50	19,500
Georgia	155	140	25	3,500,000	6.00	21,000
New Jersey	88	86	35	3,010,000	5.90	17,759
West Virginia	17	16	42	672,000	6.05	4,066
Florida	7	5	27	135,000	5.90	797
United States	75,522	74,602	42.7	3,188,247,000	6.20	19,693,861
			Canola:			
	(1,000 acres)	(1,000 acres)	(pounds/acre)	(pounds)	$/cwt)	(1,000 $)
North Dakota	940	935	1,370	1,280,950,000	11.10	142,185
Other States	66	49.2	1,352	66,496,000	10.90	7,239
Minnesota	28	27	1,330	35,910,000	9.80	3,519
Montana	10	9.8	1,120	10,976,000	11.70	1,284
United States	1,044	1,021	1,366	1,394,332,000	11.10	154,227

(Source: USDA/NASS)

Table 16. Biodiesel from Yellow Grease Production Potential.*

Geographic Area	Population Estimate as of July 1, 2005	Yellow Grease (pounds)	Biodiesel Potential from Yellow Grease (gallons)	% of Production Potential
California	36,457,549	360,929,735	13,621,582	12.2
Texas	23,507,783	232,727,052	8,783,179	7.9
New York	19,306,183	191,131,212	7,213,342	6.4
Florida	18,089,888	179,089,891	6,758,899	6.0
Illinois	12,831,970	127,036,503	4,794,391	4.3
Pennsylvania	12,440,621	123,162,148	4,648,171	4.2
Ohio	11,478,006	113,632,259	4,288,511	3.8
Michigan	10,095,643	99,946,866	3,772,021	3.4
Georgia	9,363,941	92,703,016	3,498,636	3.1
North Carolina	8,856,505	87,679,400	3,309,043	3.0
New Jersey	8,724,560	86,373,144	3,259,745	2.9
Virginia	7,642,884	75,664,552	2,855,600	2.6
Massachusetts	6,437,193	63,728,211	2,405,119	2.2
Washington	6,395,798	63,318,400	2,389,653	2.1
Indiana	6,313,520	62,503,848	2,358,911	2.1
Arizona	6,166,318	61,046,548	2,303,913	2.1
Tennessee	6,038,803	59,784,150	2,256,269	2.0
Missouri	5,842,713	57,842,859	2,183,005	2.0
Maryland	5,615,727	55,595,697	2,098,196	1.9
Wisconsin	5,556,506	55,009,409	2,076,069	1.9
Minnesota	5,167,101	51,154,300	1,930,577	1.7
Colorado	4,753,377	47,058,432	1,775,997	1.6
Alabama	4,599,030	45,530,397	1,718,329	1.5
South Carolina	4,321,249	42,780,365	1,614,542	1.4
Louisiana	4,287,768	42,448,903	1,602,033	1.4
Kentucky	4,206,074	41,640,133	1,571,509	1.4
Oregon	3,700,758	36,637,504	1,382,709	1.2
Oklahoma	3,579,212	35,434,199	1,337,296	1.2
Connecticut	3,504,809	34,697,609	1,309,497	1.2
Iowa	2,982,085	29,522,642	1,114,192	1.0
Mississippi	2,910,540	28,814,346	1,087,461	1.0
Arkansas	2,810,872	27,827,633	1,050,222	0.9
Kansas	2,764,075	27,364,343	1,032,737	0.9
Utah	2,550,063	25,245,624	952,776	0.9
Nevada	2,495,529	24,705,737	932,401	0.8
New Mexico	1,954,599	19,350,530	730,294	0.7
West Virginia	1,818,470	18,002,853	679,432	0.6
Nebraska	1,768,331	17,506,477	660,699	0.6
Idaho	1,466,465	14,518,004	547,913	0.5
Maine	1,321,574	13,083,583	493,778	0.4
New Hampshire	1,314,895	13,017,461	491,282	0.4
Hawaii	1,285,498	12,726,430	480,299	0.4
Rhode Island	1,067,610	10,569,339	398,890	0.4
Montana	944,632	9,351,857	352,942	0.3

Table 16. Biodiesel from Yellow Grease Production Potential.*

Geographic Area	Population Estimate as of July 1, 2005	Yellow Grease (pounds)	Biodiesel Potential from Yellow Grease (gallons)	% of Production Potential
Delaware	853,476	8,449,412	318,883	0.3
South Dakota	781,919	7,740,998	292,147	0.3
Alaska	670,053	6,633,525	250,351	0.2
North Dakota	635,867	6,295,083	237,578	0.2
Vermont	623,908	6,176,689	233,110	0.2
District of Columbia	581,530	5,757,147	217,276	0.2
Wyoming	515,004	5,098,540	192,420	0.2
United States	299,398,484	2,964,044,992	111,863,828	100.0

*Assumptions are 9.9 pounds of yellow grease per person per year and 7.7 pounds of yellow grease required per gallon biodiesel x .2906 proportion available.
(Source: U.S. Census Bureau).

Table 17. Commercial Cattle Slaughter by State, 2006.

State	Head Slaughtered (1000 head)	Total Live Weight of Slaughter (1000 pounds)
Kansas	7,321.40	9,097,379
Nebraska	7,028.90	9,078,200
Texas	6,238.20	7,482,947
Colorado	2,086.70	2,655,335
Wisconsin	1,439.10	1,948,154
California	1,362.40	1,813,221
Pennsylvania	840.8	1,026,338
Washington	786.1	1,003,322
Minnesota	644	901,493
Utah	594.9	722,972
Michigan	441.4	599,360
Idaho	376	482,976
Georgia	238.1	203,625
North Carolina	192.1	195,300
Ohio	100.6	114,519
Delaware & Maryland	42.3	55,201
New York	37.5	44,064
New Jersey	26	32,006
Oklahoma	26.1	28,222
Oregon	20.6	25,368
Montana	20.7	23,918
Kentucky	16.4	14,820
Tennessee	14.9	13,909
New England	13.7	13,804
Louisiana	13	11,514
New Mexico	11.5	11,478
Virginia	10.8	10,960
Hawaii	9.2	9,957
Wyoming	7.6	9,082
West Virginia	9.2	8,855
Arkansas	9.5	8,826
Alabama	4.7	4,195
Alaska	0.9	967

(Source: USDA/NASS, Quickstats)

Table 18. Stations with Biodiesel Fuel.

State	Fueling Stations	State	Fueling Stations
Alabama	2	Montana	5
Alaska	0	Nebraska	5
Arizona	6	Nevada	27
Arkansas	3	New Hampshire	11
California	35	New Jersey	0
Colorado	24	New Mexico	5
Connecticut	1	New York	8
Delaware	3	North Carolina	57
Dist. of Columbia	1	North Dakota	0
Florida	12	Ohio	21
Georgia	25	Oklahoma	9
Hawaii	7	Oregon	35
Idaho	34	Pennsylvania	36
Illinois	12	Rhode Island	0
Indiana	11	South Carolina	68
Iowa	13	South Dakota	0
Kansas	4	Tennessee	39
Kentucky	5	Texas	54
Louisiana	2	Utah	4
Maine	2	Vermont	6
Maryland	6	Virginia	21
Massachusetts	6	Washington	33
Michigan	18	West Virginia	0
Minnesota	3	Wisconsin	4
Mississippi	5	Wyoming	14
Missouri	48	Total	750

(Source: US DOE, Alternative Fuels Data Center)

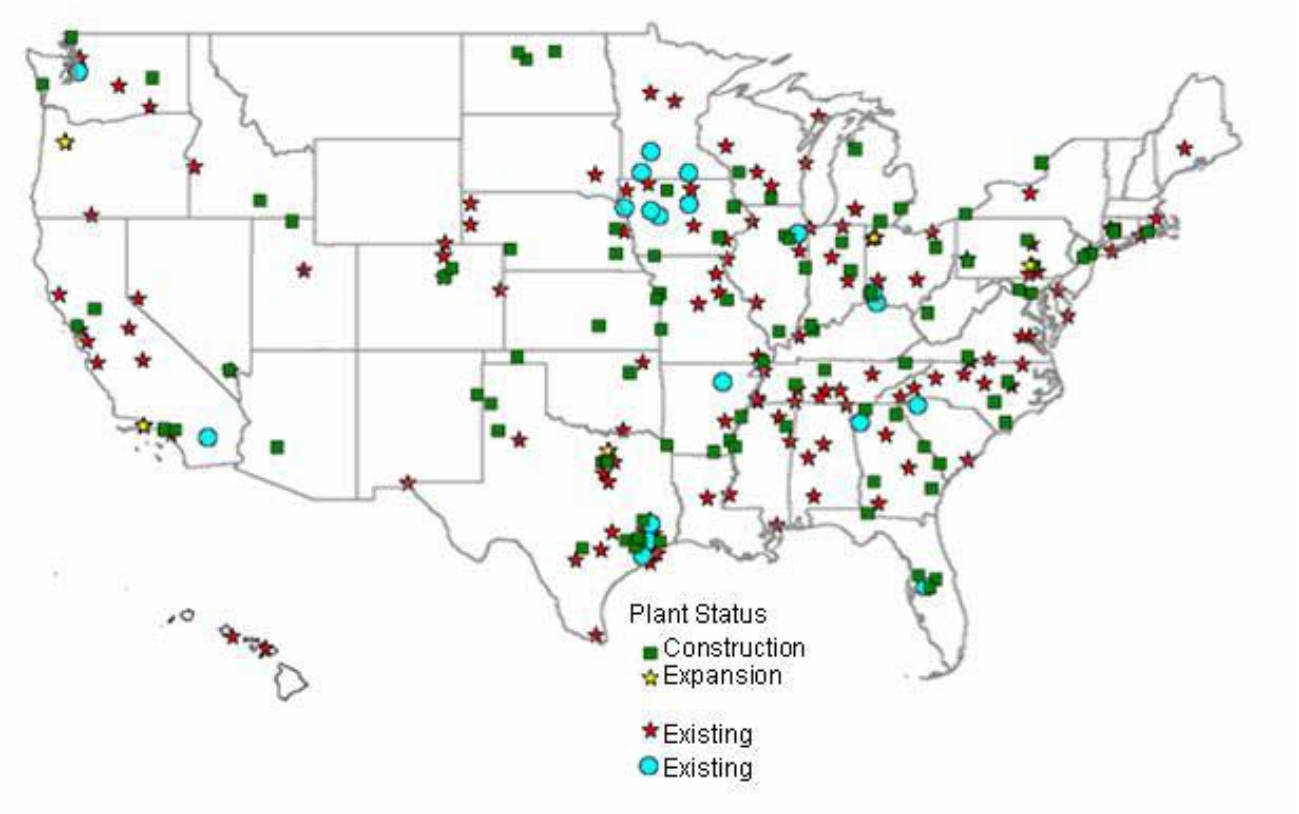

Figure 1. Biodiesel Production Plants, June 2007.
(Source: National Biodiesel Board)

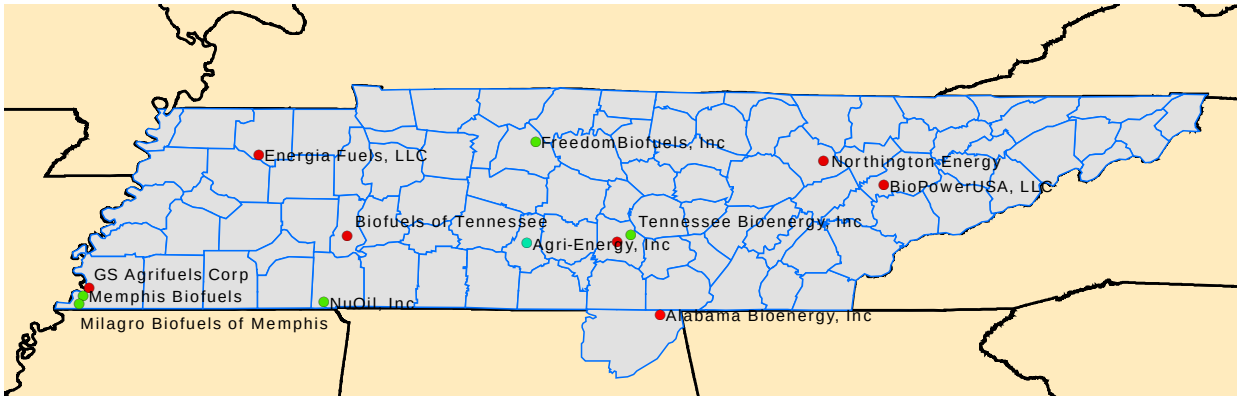

Figure 2. Location of Existing and Planned Biodiesel Production Facilities for Tennessee, 2006.

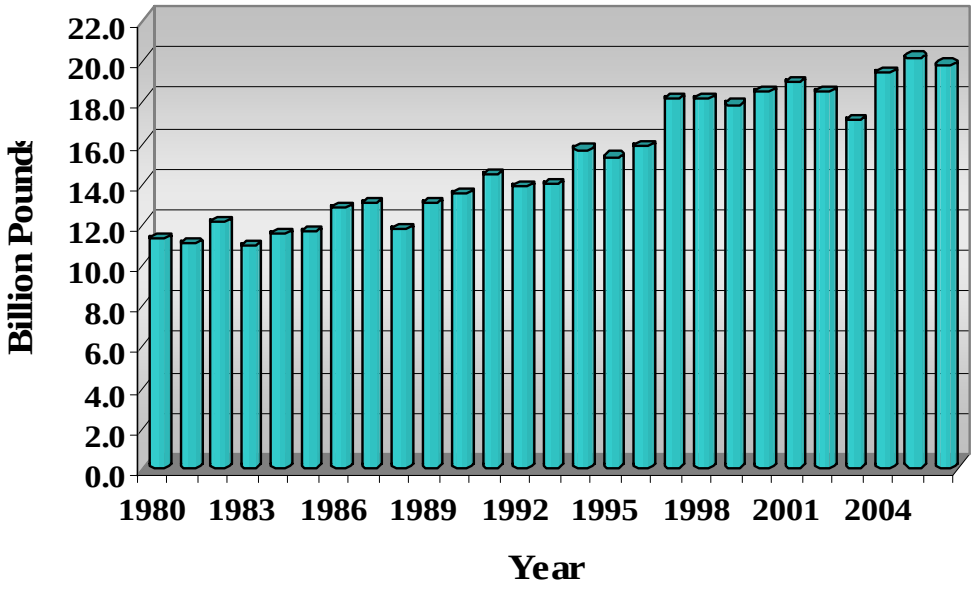

Figure 3. U.S. Domestic Soybean Oil Production.
Source: (Source: USDA, FAS)

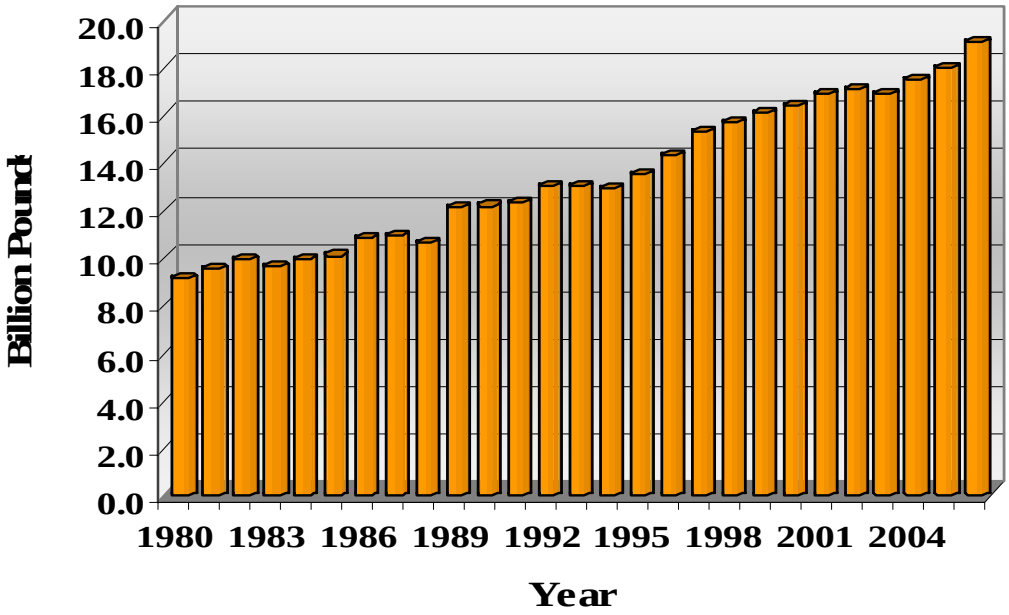

Figure 4. U.S. Domestic Soybean Oil Consumption.
(Source: USDA, FAS)

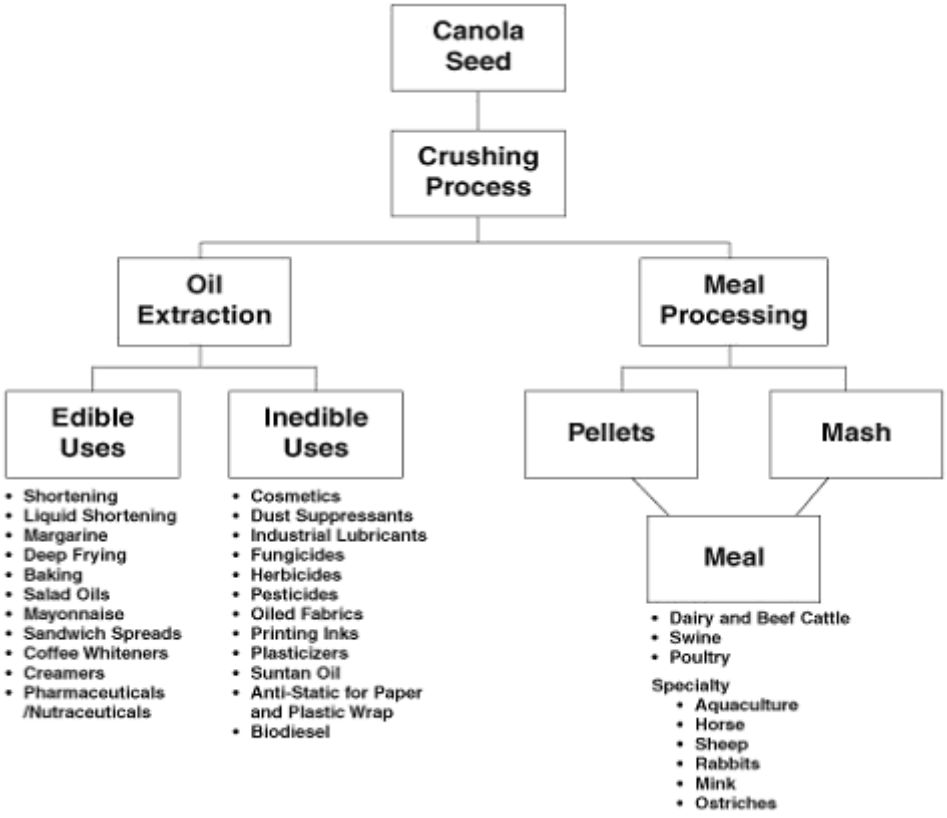

Figure 5. Canola Oil Production Schematic and Products Produced.
Source: http://www.canola-council.org/ind_overview.html

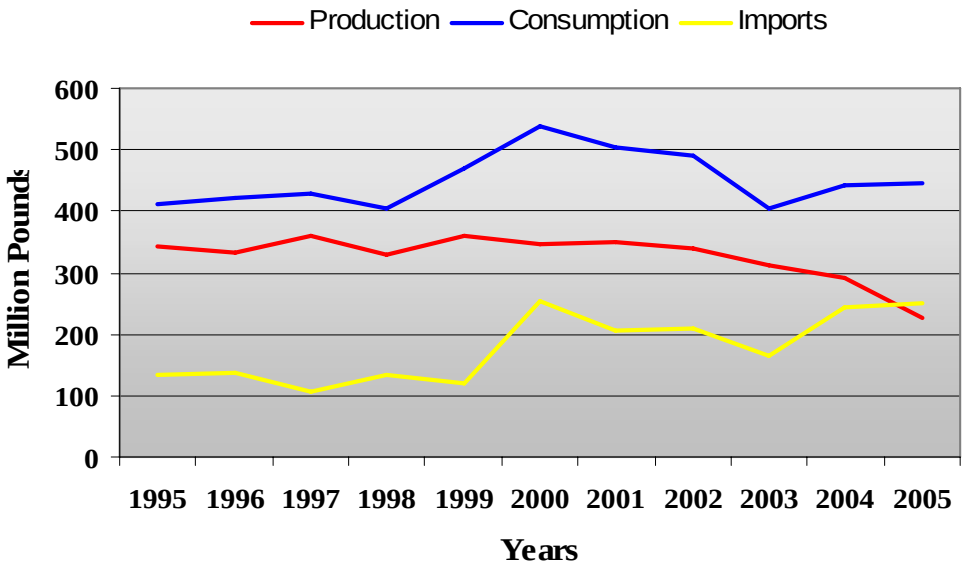

Figure 6. U.S. Production, Consumption, and Imports of Glycerine
Source: Oleoline® Glycerine Market Report, No. 71, December 2005, Editor: M.P.D. Heming at http://www.oleoline.com/reports.html