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**STATEMENT OF THE
AMERICAN SOYBEAN ASSOCIATION**

To the

**NATIONAL RESEARCH COUNCIL
COMMITTEE ON ECONOMIC AND ENVIRONMENTAL IMPACTS
OF INCREASING BIOFUELS PRODUCTION**

April 15, 2010

The American Soybean Association (ASA) thanks the National Research Council and the Committee on Economic and Environmental Impacts of Increasing Biofuels Production for the opportunity to comment and provide input on the study of current projected biofuel production, use and impacts.

ASA's comments will focus specifically on biodiesel produced from soybean oil, the associated agronomic issues, and dynamics of soybean markets. ASA will seek to address the specific questions on which the committee is seeking input, while also providing information on soybean agronomics and economics that we believe are relevant and important to your analysis. While we will touch upon some of the broader issues, we will defer to the National Biodiesel Board and other sources and experts from whom the Committee will receive comments and in-depth analysis regarding impacts of the entire biodiesel and biofuels markets.

Background

Soybean farmers have a great interest in the development and expansion of the U.S. biodiesel industry. Biodiesel has provided a significant market opportunity for U.S. soybean farmers, and jobs and economic development for rural communities. Soy biodiesel is also one of the cleanest burning biofuels currently used in commercial markets.

Biodiesel produced from soybean oil and other feedstocks is a renewable and sustainable energy source that can play a significant role in our national efforts to increase our energy security and improve our environmental footprint. Biodiesel is an advanced biofuel as defined in statute for the Renewable Fuel Standard (RFS) and for other federal biofuels programs, such as those authorized under the Food, Conservation and Energy Act of 2008 and administered by the U.S. Department of Agriculture.

The U.S. Environmental Protection Agency (EPA) in their life-cycle analysis conducted for implementation of the RFS determined that the median greenhouse gas emissions of biodiesel were 57% less than petroleum diesel. EPA determined that the GHG emissions reductions from biodiesel could range as high as 85%. It is also important to note that these comparisons include indirect emissions from biodiesel measured against petroleum emissions that do not include indirect emissions. Furthermore, the indirect emissions calculations for biodiesel include indirect land use factors and many in the scientific community believe that the science associated with indirect land use effects is too limited and uncertain to rely upon at this time. To our knowledge, each and every analysis that exists shows that biodiesel results in significantly lower GHG emissions than petroleum diesel.

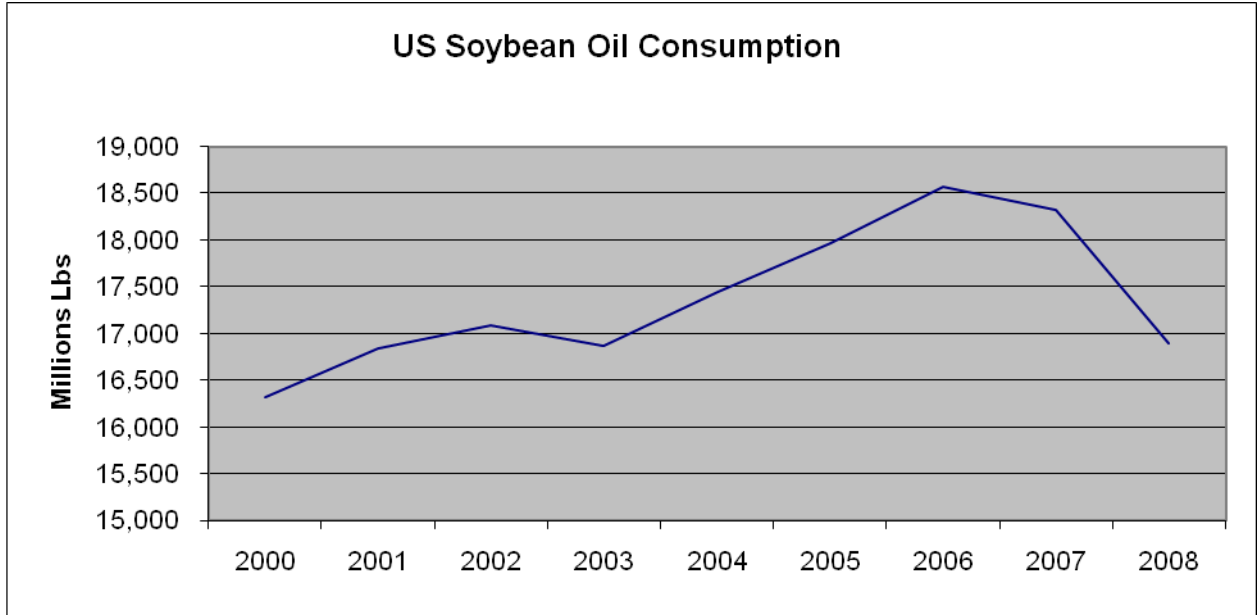
To this point, biodiesel production in the United States has predominantly utilized soybean oil as a feedstock. While other feedstocks are becoming more viable, soybean oil remains the primary feedstock of choice for U.S. biodiesel production. As a result, biodiesel has provided a significant market opportunity for U.S. soybean producers by increasing demand for soybean oil. Historically, there have been surplus stocks of soybean oil.¹ The surplus oil has resulted in depressed prices for soybeans and restricted markets for soybean farmers. For crop year 2008/9 there was soybean oil ending stocks of 2,742 million pounds. This is the amount remaining after all domestic use and exports. According to the USDA March 2010 Oil Crops Outlook, “There are only two years (2007 and 2008) when domestic soybean oil stocks were as high as they were at the end of January (3.224 billion pounds). By September, season-ending soybean oil stocks may retreat on account of a seasonally declining crush, a low extraction rate, and strong export demand. Despite this, the 2009/10 soybean oil carryout is higher than previously expected (at 2.637 billion pounds) because of this month’s forecasts of higher production and lower domestic use.”²

As illustrated in Tables 1.1 and 1.2, Soybean oil usage in the food market has experienced a significant decline since 2007 as a result of the concern over consumption of trans fat and the subsequent movement away from soybean oil in favor of canola and palm oils in the food market.

¹ United States Department of Agriculture, National Agricultural Statistics Service: Historical Track Record - Stocks of Grains, Oilseeds, and Hay. USDA website (Washington, D.C. 2010).

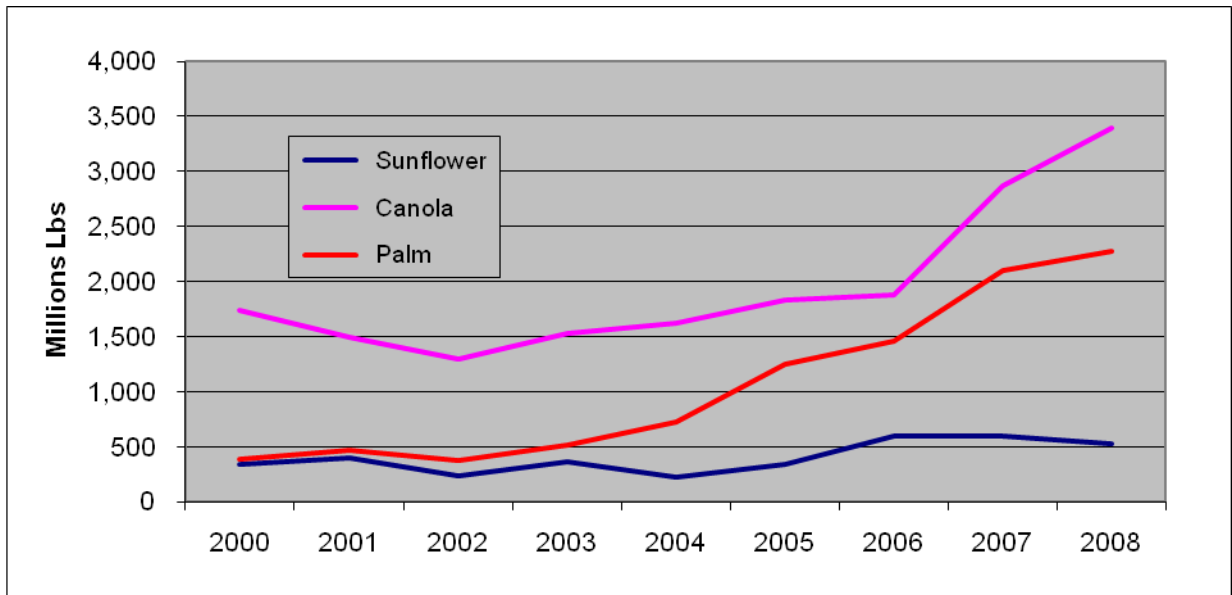
² United States Department of Agriculture, Economic Research Service: Oil Crops Outlook (Washington, DC, March 11, 2010), 3.

Table 1.1



Source: Oilseed Crushings and Production, Consumption, and Stocks, Bureau of the Census

Table 1.2



Source: Oilseed Crushings and Production, Consumption, and Stocks, Bureau of the Census

USDA projects that “soybean oil used for domestic food consumption is projected to decline again in 2010/11 as manufacturers continue to replace soybean oil with other vegetable oils to reduce trans fats.

This would be the sixth consecutive annual decline in food use of soybean oil for a 2.8 billion pound (16 percent) overall reduction since 2004/05.”³

In the March Oil Crops Outlook, USDA indicated that, “The forecast of domestic soybean oil use in 2009/10 was reduced 300 million pounds this month to 16.2 billion (versus 16.4 billion in 2008/09). Due to the weak economy, signs of recovery from last year’s drop in the edible use of vegetable oil are still lacking. At the same time, soybean oil’s share of total use continues to decline compared with other oils (particularly canola oil, palm oil, and corn oil). A decline in the edible consumption this year would offset a small increase in the domestic use of soybean oil for biodiesel.”⁴

One fundamental fact that also must be understood is that soybeans are produced primarily for their 80% meal content, a valuable protein source that is used in the feed and food market. For livestock feed, the poultry industry is the largest user of soybean meal (approximately 50%), followed by the swine industry (approximately 25%).

An increase in the quantity of soybeans that are grown and processed that might result from increased demand for soybean oil to produce biodiesel, also results in a significant increase in soy meal. An increase in the supply of soy meal causes prices for that commodity to decrease⁵. Soy biodiesel has a positive impact on food and feed markets as an increase in soybean oil demand and utilization results in more plentiful and lower cost soy meal. Higher demand for soybean oil results in more soybeans crushed domestically. This increased supply lowered soybean meal prices by \$19 to \$45 per ton from where they would have been without biodiesel-driven demand. An estimated 39.5 million tons of soybean meal were produced during the 2008/09 marketing year which resulted in feed cost savings between \$750 million and \$1.7 billion.⁶

U.S. soybean producers also continue to export record levels of soybeans, primarily to China.

U.S. soybean exports for 2009/10 increased 25 million bushels for the month of March. The strong pace through March is projected to carry U.S. soybean exports to a record 1.445 billion bushels, 13% above the previous record set just last year.⁷

Production and yield increases

The 2009/10 U.S. soybean crop is expected to be the largest in history in terms of both acres harvested and average yield per acre. Yields for the 2009/10 crop are forecast at 44 bushels per acre, up 4.3 bushels per acre from 2008/09. The *Prospective Plantings* report issued by USDA, National Agricultural Statistics Service (NASS) on March 31, 2010 estimates that soybean planted acres in the U.S. for 2009/10 will again set a record, increasing by 1% over the 2008/09 record level.

³ United States Department of Agriculture, Office of the Chief Economist: Grains and Oilseeds Outlook (Washington, D.C. February 19, 2010), 7.

⁴ United States Department of Agriculture, Economic Research Service: Oil Crops Outlook (Washington, DC, March 11, 2010), 3.

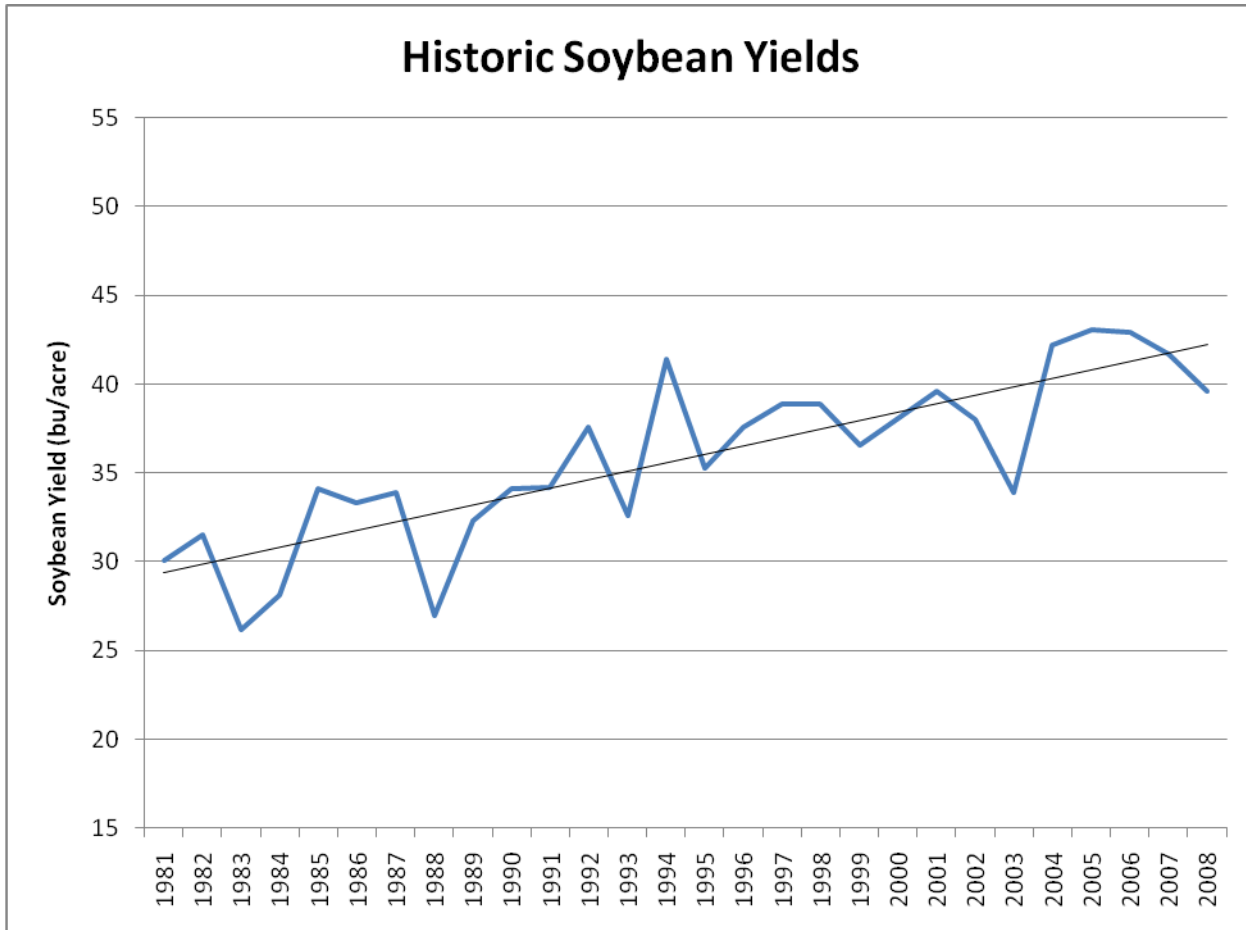
⁵ LMC International. “Indirect Land Use Analysis – The Impacts of a Rise in US Biodiesel Demand,” prepared for the National Biodiesel Board, 2009.

⁶ Centrec, LLC. “Economic Impacts of Biodiesel Production on the Soybean Sector,” prepared for the United Soybean Board, July 2009.

⁷ USDA: *World Agricultural Supply & Demand Estimates report*, (Washington, D.C. April 9, 2010).

Yield increases by U.S. soybean farmers will play a significant role in meeting biofuel feedstock demand by producing more soybeans on the same amount of land. Historical data tell us that productivity gains and yield increases occur for U.S. agriculture. Over the 25 year period from 1981-2006, U.S. soybean farmers increased their yield from 30 bushels per acre to 43 bushels per acre. This equates to an average yield increase of one-half bushel per acre per year.

Table 2

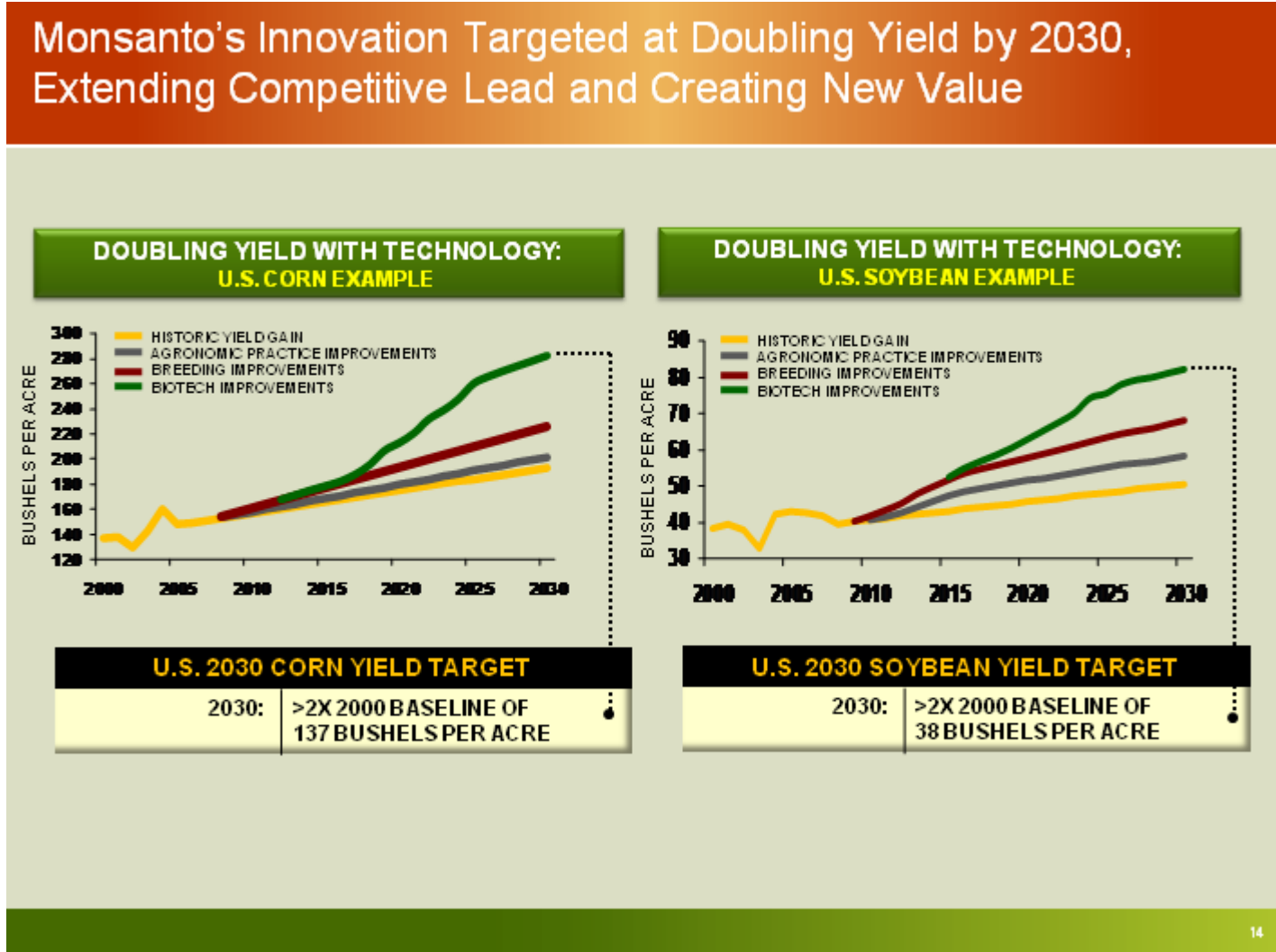


Source: USDA, National Agricultural Statistics Service.

This represents the minimum productivity increase that is likely to occur. With technologies currently in development, the yield increases going forward are expected to surpass those we have achieved over the past 25 years. U.S. seed technology companies are projecting that current soybean yields will double by 2030.

Seed technology companies, such as Monsanto, have contributed public comments in which they demonstrate that technological advances will significantly improve yields. The yield increases will occur at a rate greater than historical yield trend averages due to technological advances. In public comments submitted to EPA on the Proposed Rule for the RFS, Monsanto and other key stakeholders indicated that, “yield predictions based upon long-term historical data are also inaccurate due to significant changes in crop technology.”

Table 3



Statistical evidence available from seed technology companies, and illustrated in Table 2 above, demonstrates the shift in the rate of increase in yield trend lines from biotechnology that has been occurring and is expected to accelerate in future years. ASA strongly encourages the Committee to review comments submitted to EPA by seed technology companies and consult with them directly as part of the study on the impacts of increased biofuel production and use.

Renewable Fuel Standard

ASA supports the Renewable Fuel Standard (RFS), including a specific requirement for use of biomass-based diesel, and we want the program to succeed. We believe that a successful and workable RFS program will help our nation meet its energy and environmental security goals and provide an important market for U.S. soybean farmers. U.S. soybean farmers are proud of their contribution toward achieving the national goal of energy independence and will continue to do their part to improve their efficiency and productivity to meet the needs of the global food and fuel markets. ASA does not believe that an increase in U.S. soy biodiesel demand will have significant adverse impacts on

global food markets or the environment. We strongly disagree with the theories that increased U.S. soy biodiesel production will drive significant international land use change.

The Committee specifically requested input on the following questions:

• What are the costs and disruptive effects on the economy and environment of meeting the RFS mandate by 2022?

ASA does not believe that the RFS, especially the biomass-based diesel requirement, will result in any significant costs or disruptive effects to the economy or environment. In fact, ASA believes that all indications are that the increased demand for biodiesel will have positive effects on the economy and the environment.

On the economic front, increased domestic biodiesel production will support job creation and provide economic stimulus, particularly in rural America. More biodiesel producers, producing more biodiesel will result in more jobs and increased tax revenue for local, state, and federal governments. The market for soybean oil will improve revenue for farmers and help rural economies. As discussed previously, increased soy oil demand will result in increased soy meal supply and lower prices for the food market as well as livestock producers who utilize it as feed.

On the environmental front, biodiesel results in significant air quality benefits, including reductions in greenhouse gas emissions. Biodiesel's emissions significantly out-perform petroleum-based diesel. Biodiesel is the only alternative fuel to voluntarily perform EPA Tier I and Tier II testing to quantify emission characteristics and health effects. That study found that B20 (20 percent biodiesel blended with 80 percent petroleum diesel fuel) provided significant reductions in total hydrocarbons; carbon monoxide; and total particulate matter. The ozone forming potential of the hydrocarbon emissions of pure biodiesel is nearly 50 percent less than that of petroleum fuel. Pure biodiesel typically does not contain sulfur and, therefore, reduces sulfur dioxide exhaust from diesel engines to virtually zero.⁸

The greenhouse gas emissions of biodiesel are fully detailed in the EPA's life-cycle analysis for the RFS and depending on the particular feedstock used and the uncertain indirect emissions factors, was found to achieve emissions reductions of up to 85%.

There are no significant adverse water quality impacts and no adverse net effects on land use change that result from U.S. soy biodiesel production (see Land Use section).

There could be some land conversion consequences resulting from the cellulosic biofuel requirements under the RFS. Currently, the production processes have not been developed to the point that it is commercially available, however, if cellulosic production does become feasible, the volume levels targeted in the RFS could result in land being used to grow dedicated cellulosic energy crops, such as switchgrass. A study conducted by the University of Tennessee on behalf of the organization

⁸ National Biodiesel Board. Comments to EPA on RFS, September 25, 2009.

25x'25 suggested that land converted to dedicated energy crops would likely come from pastureland.⁹ Cellulosic feedstocks are presumed by many to not compete with food markets or have impacts on food markets, but this is not accurate. While cellulosic feedstocks themselves may not go into the food market, they are sources of feed for livestock and would likely be grown on land that is currently used for livestock pasture.

• **What are your top 3 concerns regarding possible consequences of meeting the RFS mandate?**

ASA's top 3 concerns relative to the RFS are:

- 1) Market uncertainty and industry instability created by efforts to block, delay, or waive the RFS. The uncertainty created by these potential challenges, no matter how unfounded they may be, can make investors and fuel customers hesitate or delay investment, and prevents producers from making efficient long-term business plans.
- 2) Failure to extend the biodiesel tax credit, which could result in biodiesel production being less cost competitive with petroleum and more expensive for consumers.
- 3) Flood of imported biodiesel or foreign feedstock from countries and regions with larger subsidies, fewer environmental, health, and labor regulations and overall lower export costs.

• **Under what circumstances could the RFS mandate be met without causing these concerns?**

1. The most important factor to ensuring that the RFS is met as cost effectively as possible is to create greater certainty and stability for producers. Specifically, the long-term extension of the biodiesel tax credit and restructuring of the credit from a blender's credit to a production credit would create stability, bolster investor and consumer confidence, make biodiesel cost competitive and less expensive for consumers, and provide a more level playing field with foreign biofuel and feedstock production.
2. Greater acceptance, support and cooperation from the U.S. petroleum industry would alleviate uncertainty and improve efficiency. The petroleum industry controls much of the fuel infrastructure including the distribution and retail outlets. Avoiding attempts by the petroleum industry to block, delay, or waive implementation of the RFS would also alleviate uncertainty and create more stability in the biofuels industry.
3. Support and pursuit of trade policies that ensure a more level playing field between U.S. and foreign produced biofuels and feedstocks would be beneficial for domestic biofuels producers. For example, the Differential Export Tax (DET) in Argentina provides an unfair competitive advantage to biodiesel produced in that country. DETs subsidize exports of processed products by taxing exports of the raw material at a higher rate than exports of the processed products derived from that raw material. The differential tax rate reduces processors' raw material cost more than it reduces their sales revenue.

⁹ Daniel de la Torre Ugarte, Burton C. English, Chad Hellwinckel, Tristram O. West, Kimberly L. Jensen, Christopher D. Clark, and R. Jamey Menard. "Analysis of the Implications of Climate Change Legislation to the Agriculture Sector," prepared for 25x'2, November, 2009.

For example, Argentina applies an export tax of 35% on soybeans, 32% on soybean oil and soybean meal, and 17.5% on soy biodiesel. This DET structure reduces Argentine processors' raw material costs by 35%, but it reduces their export sales revenue by only 32% for soybean oil and soybean meal, and by only 17.5% for soy biodiesel. Taxing the raw material at a higher rate than the processed products establishes a significant export subsidy for the processed products. In an assessment of DETs prepared for the United Soybean Board, dated July 7, 2006, Promar International estimated that the 15% DET on soy biodiesel will enable Argentina's processors to deliver soy biodiesel to the United States at a cost advantage of \$40 per metric ton or 14 cents per gallon. An export subsidy of this magnitude presents a major competitive threat to the emerging biodiesel industry in the United States.

4. In addition, agricultural feedstock and biofuel production would benefit from the streamlining of biotechnology regulatory approval processes that delay the development and commercialization of technologies that can improve crop yields, reduce inputs and production costs for biofuel feedstocks.

• In your view, what are the potential beneficial impacts of the RFS mandate in addition to improving energy security and reducing greenhouse gas emissions?

In addition to the energy security and environmental benefits, the RFS, by bolstering the U.S. biodiesel industry can also provide job creation, increased revenue for farmers, rural economic development, and positive impacts on supplies and prices of soy meal. As indicated previously, expansion of the domestic biofuels industry has broad economic benefits as more biodiesel producers, producing more biodiesel will result in more jobs and increased tax revenue for local, state, and federal governments.

• Which groups would gain or lose most from meeting the RFS mandate?

U.S. taxpayers and consumers gain the most from the RFS as a result of the benefits to the economy and the environment. Farmers and rural Americans also stand to experience specific gains. The organizations that would seem to lose the most would be foreign oil producers and oil importers since the production and utilization of domestically produced biofuels would displace fuel that is currently imported.

• What are the most important barriers to meeting the RFS mandate?

The greatest barriers to meeting the RFS are: the uncertainty in the biofuels industry resulting from the expiration of the biodiesel tax credit; lack of long-term tax credit; challenges to the eligibility and use of soy biodiesel to meet the biomass-based diesel requirement; and challenges from petroleum industry to the implementation of the RFS as a whole.

The ability of biofuels to achieve cost competitiveness with established petroleum fuels is also an overarching barrier. The petroleum fuels industry has been in place for decades and our entire fuel infrastructure including the production facilities, the pipelines and transportation networks, vehicle engine manufacturing, and the fueling stations are all built for petroleum. Overcoming this

infrastructure and institutional advantage will be a gradual and lengthy process that requires significant investment, commitment, and support on all fronts from policymakers and the public.

Land Use Impact

While the committee did not specifically seek comment on land use impacts of biofuels, ASA would like to take this opportunity to share some perspective and information on this issue that has, in our view, been incorrectly hypothesized as an adverse impact of increased soy biodiesel demand.

Indirect land use refers to the GHG emissions caused by land converted to crop production globally. There are numerous factors that we believe refute the possibility that significant international indirect land use change would result from the relatively small increase in U.S. biodiesel production called for under the RFS.

Everywhere in the world, soybeans are grown primarily for the demand for their 80 percent protein meal. By-products do not drive supply responses and soybean oil for biodiesel does not drive planting decisions for farmers. If it did, then farmers would plant crops, other than soybeans, that produce more oil per acre. This economic reality invalidates any link between use of soybean oil for biodiesel and magnified land use change impact. Furthermore, the volumes of biomass-based diesel that are required under the RFS represent modest increases above the 750 million gallons of U.S. biodiesel that were produced in 2008, prior to any biomass-based diesel RFS requirement. The additional volumes of biodiesel can be accomplished through any number of options, including utilization of soybean oil stocks, increases in soybean yields and productivity, increased utilization of other biodiesel feedstocks, and increased utilization of existing U.S. agricultural land.

The amount of farmland in the U.S. has been declining for a number of years, due largely to development pressures. The American Farmland Trust has calculated that every minute two acres of farmland are lost to development. As illustrated in Table 4 below, the most recent 2007 Census of Agriculture showed a continued decline in farmland since the 2002 and 1997 census. The market benefits that biofuels provide for farmers could help reduce, halt, or even reverse the crop and farm land losses and keep valuable land in production to help meet the growing global food, fiber, and energy demands.

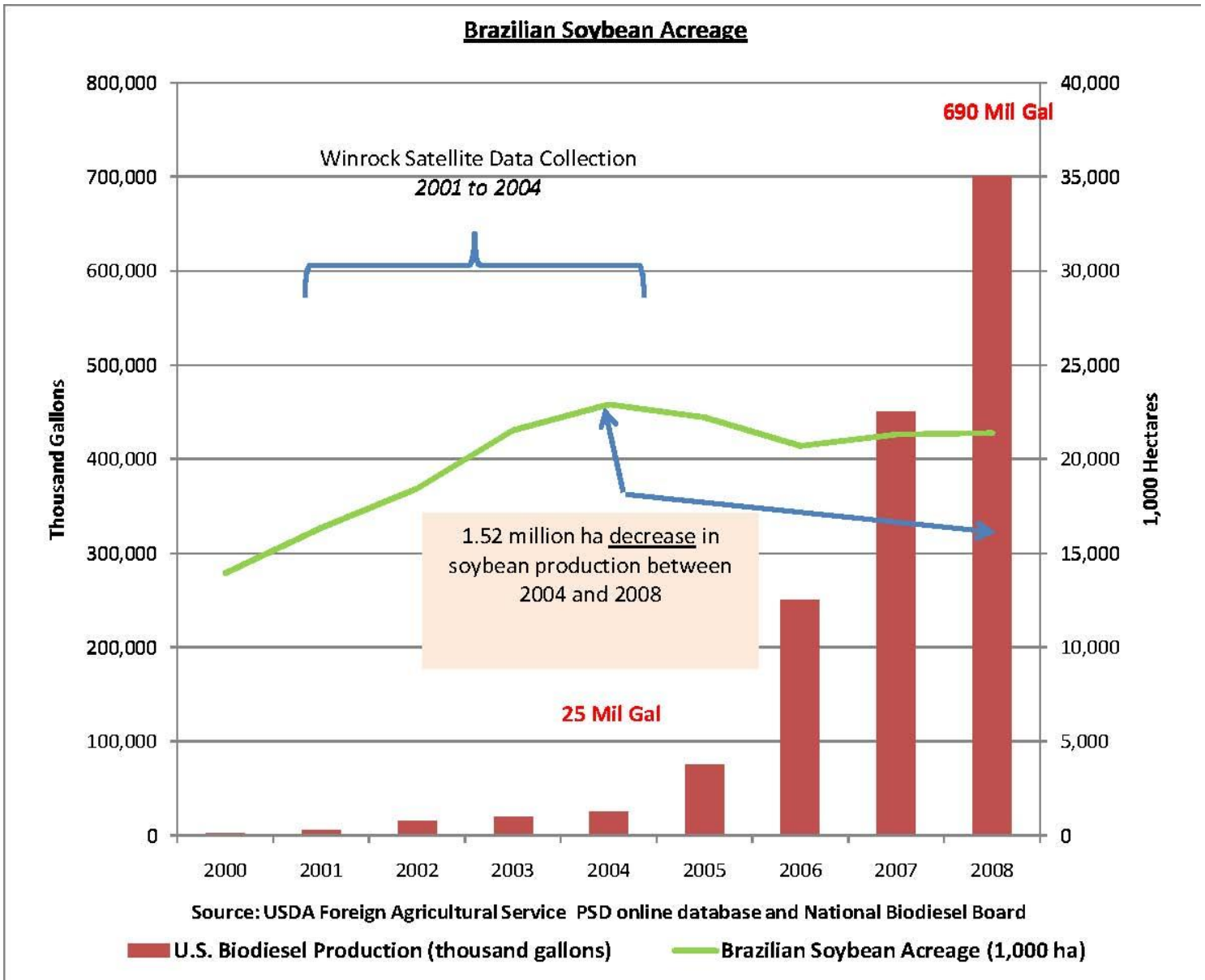
**Table 4
Farm Characteristics**

1997, 2002 and 2007 Census of Agriculture			
	1997	2002	2007
Approximate total land area (acres)	2,262,462,020	2,263,960,501	2,260,994,361
Total farmland (acres)	954,752,502	938,279,056	922,095,840
Percent of total land area	42.2	41.4	40.8
Cropland (acres)	445,324,765	434,164,946	406,424,909
Percent of total farmland	46.6	46.3	44.1
Percent in pasture	14.9	13.9	8.8
Percent irrigated	11.5	11.6	12.7
Harvested Cropland (acres)	318,937,401	302,697,252	309,607,601

In contrast, land use change and deforestation in Brazil and other countries is driven by numerous factors, including population growth, food and feed demand, timber prices, Brazilian agricultural policies and subsidies, Argentina's Differential Export Taxes, and the European Union's ban on U.S. soybean imports due to biotechnology barriers.

Deforestation may be happening, and it may happen in the future, but it is unrelated to the U.S. biodiesel program. In fact, there has been an inverse relationship between Brazilian soy area and U.S. biodiesel production. Acreage in Brazil dedicated to soybean cultivation actually *decreased* from 2004 through 2008. In 2004, soybean production in Brazil covered 22.917 million hectares. In 2008, soybean production accounted for 21.400 million hectares -- a *decrease* of 1.5 million hectares. As U.S. biodiesel production increased by 665 million gallons, land dedicated to soybean cultivation in Brazil decreased by 1.5 million hectares -- a real world outcome that refutes assumptions that U.S. biodiesel production drives land use change in Brazil. Brazilian soy area increased most in years (1998-2004) prior to the existence of significant U.S. biodiesel production. The previous increases in Brazilian soy area were prompted largely by Brazilian economic conditions, policies, and subsidies. In the period from 2004-2008, when U.S. biodiesel production increased from 25 million gallons to 700 million gallons, Brazilian soy area *decreased*. The history and relationship is illustrated in Table 3 below.

Table 4



Conclusion

Soybean farmers have a great interest in the development and expansion of the U.S. biodiesel industry. Biodiesel has provided a significant market opportunity for U.S. soybean farmers, and jobs and economic stimulus for the U.S. economy, especially in rural communities.

Biodiesel is an advanced biofuel as defined in statute for the Renewable Fuel Standard (RFS) and for other federal biofuels programs. The EPA determined that emissions reductions from biodiesel could range as high as 85%. To our knowledge, each and every analysis that exists shows that biodiesel results in significantly lower GHG emissions than petroleum diesel.

Soybeans are produced primarily for their 80% meal content, a valuable protein source that is used in the feed and food market. Biodiesel is produced from soybean oil, a commodity that has historically existed in surplus and whose use in the food market is declining significantly due to the trans fat issues. An increase in the quantity of soybeans that are grown and processed results in an increase in soy meal supply and decrease in meal prices for the food and feed markets.

ASA strongly believes that the RFS will have economic, energy, and environmental benefits for the country. Biodiesel, including soy biodiesel, can play a vital role in fulfilling the RFS and can do so without any adverse impacts to the food or feed markets. In fact, we believe soy biodiesel provides benefits to those sectors as well. Continued yield and productivity increases by U.S. soybean farmers will play a significant role in providing these benefits by producing more soybeans on the same amount of land. Long-term extension of the biodiesel tax credit, cooperation and support from the petroleum industry, and other policy support on trade and biotechnology issues will help alleviate uncertainty and instability in the biodiesel industry and ensure that the full potential can be reaped.

Again, ASA thanks the National Research Council and the Committee on Economic and Environmental Impacts of Increasing Biofuels Production for the opportunity to comment and provide input on the study of current projected biofuel production, use and impacts. We hope that the information and perspective provided by ASA will be of value to the committee and reflected in the results of your study. We strongly encourage you to consult with USDA, agriculture seed technology companies, and biofuel producers to garner additional information on soybean agronomics and economics that are relevant and important to your analysis.