

# FY10

## UNITED SOYBEAN BOARD ACTION PLAN



Our soybean checkoff.   
*Effective. Efficient. Farmer-Driven.*

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## **Action Plan FY10**

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## ***USB Long-Range Strategic Plan***

*Revised and Approved February 2009*

### ***USB Core Value:***

The Board, with honesty and integrity, collectively and individually, is committed to working within the letter and spirit of applicable law and regulation to achieve maximum value for each soybean farmer's checkoff dollar.

### ***Purpose:***

Invest checkoff funds to benefit U.S. soybean producers.

### ***Mission:***

Ensure that U.S. soy is the highest quality and most competitive in a global marketplace.

### ***Strategy:***

Engage industry on behalf of U.S. soybean farmers to maximize global utilization of U.S. soy in the feed, food, industrial and energy markets.

### ***Objectives:***

1. Annual utilization of 3.5 billion bushels of U.S. Soybeans by 2011.
2. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.
3. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

### ***Priority Issues:***

- Improved yields and quality
- Maintain and expand the livestock, poultry and aquaculture industries
- Ensure market access for U.S. soy
- Market volatility
- Research infrastructure

**UNITED SOYBEAN BOARD  
SUMMARY BUDGET  
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2010**

	<u>FY2010 BUDGET</u>	<u>Committee Allocations</u>	<u>June 2009 Adjustments</u>	<u>FY2010 BUDGET</u>
<b>BUDGETED REVENUES</b>				
QSSB Collections	\$ 60,057,813		4,067,187	64,125,000
Investment Income	0			0
Draw from Reserves	0			0
Carryover Funds	0			0
<b>Total Budgeted Revenues</b>	<b>\$ 60,057,813</b>	<b>0</b>	<b>4,067,187</b>	<b>64,125,000</b>
<b>BUDGETED EXPENDITURES</b>				
Animal Utilization	\$	13,963,913	1,067,807	15,031,720
Industrial Utilization		8,430,959	566,707	8,997,666
Supply		11,200,753	822,420	12,023,173
Human Utilization		4,525,767	261,211	4,786,978
Industry Relations		7,782,863	568,534	8,351,397
Market Access		4,100,570	501,388	4,601,958
Allocations to Committees	50,004,825	(50,004,825)	0	0
<b>Total Program Funding</b>	<b>\$ 50,004,825</b>	<b>0</b>	<b>3,788,067</b>	<b>53,792,892</b>
USB Evaluation of Programs	1,000,097	0	75,761	1,075,858
<b>Total Programs &amp; Evaluation</b>	<b>\$ 51,004,922</b>	<b>0</b>	<b>3,863,828</b>	<b>54,868,750</b>
USB Managed Programs	2,000,000		17,050	2,017,050
USDA	300,000			300,000
Administrative	3,002,891	0	203,359	3,206,250
New Initiatives	1,000,000			1,000,000
QSSB Assessment Credits	250,000			250,000
<b>Total Budgeted Expenditures</b>	<b>\$ 57,557,813</b>	<b>0</b>	<b>4,084,237</b>	<b>61,642,050</b>
<b>Board Unallocated</b>	<b>2,500,000</b>	<b>0</b>	<b>(17,050)</b>	<b>2,482,950</b>

Collections estimated upon 2.975 billion bushels usage at a \$8.50 average price at 2/17/09 board meeting.  
 Collections estimated upon 3 billion bushels usage at a \$9.00 average price at Treasurer's recommendation.

FY2010 ALLOCATION by Committee	International Marketing	Global Opportunities	Production	Domestic Marketing	New Uses	Communications	Special Initiatives	Total
<b>Animal Utilization</b>								15,031,720
Customer Preference	3,872,625							3,872,625
Demand Building	6,046,912			4,371,671	740,512			11,159,095
<b>Industrial Utilization</b>								8,997,666
Biodiesel				2,185,442		813,703		2,999,145
New Uses - R&C/Petrochemical	72,012			511,476	5,415,033			5,998,521
<b>Supply</b>								12,023,173
Composition - Improve varieties/germplasm			3,216,589	2,266,184				5,482,773
Yield			6,540,400					6,540,400
<b>Human Utilization - Protein/Oil</b>								4,786,978
Customer Preference	2,249,587							2,249,587
Demand Building	298,578			2,238,813				2,537,391
<b>Industry Relations</b>								8,351,397
Soybean Producers/Industry						5,511,091		5,511,091
Checkoff Organizations/USB & QSSBs						1,875,329		1,875,329
Research Coordination			964,977					964,977
Transportation Initiative								0
<b>Market Access</b>								4,601,958
Global Access	339,789							339,789
Competitiveness		1,913,787						1,913,787
Biotech Initiative							1,110,012	1,110,012
Sustainability Initiative							1,238,370	1,238,370
<b>Additional Allocation to Cmtee</b>								0
Treasurer's recommendation								0
<b>Proposed Allocation for FY 2010</b>	12,879,503	1,913,787	10,721,966	11,573,586	6,155,545	8,200,123	2,348,382	53,792,892

## Animal Utilization Domestic Marketing Committee

### Market Environment

The U.S. livestock sector is critically important to U.S. soybean production. Among the top producers of soybeans in the world, the U.S. sells about 80 percent of all meal produced to the domestic livestock sector. Maintaining domestic utilization of U.S. soy is tied directly to the livelihood of the U.S. livestock and poultry industries. Poultry, hogs and cattle consume 98 percent of soybean meal used in the United States because of the protein content and ideal amino acid profile of soybean meal. The growth of both the soybean and livestock sectors is dependent on the United States' ability to maintain the U.S. livestock sector through increased domestic meat consumption while increasing exports of meat and poultry products.

In 2008, livestock in the United States consumed over 30 million metric tons of soybean meal, which translates into 1.1 billion calculated bushels of soybeans or 1.4 billion bushels of soybean crush (bushel equivalents). Both U.S. soybean production and livestock production are in a transition period. The recession is affecting livestock and poultry production in the United States, which will have consequential effects on the soybean industry.

Soybean meal is the predominant non-animal protein source used in diet formulations for poultry, pork and beef due to its unique protein quality. However, there is competition from substitute ingredients. The increase of ethanol production from dry grind ethanol plants has increased the tonnage of Distillers Dried Grains with Solubles (DDGS) available worldwide, and has replaced portions of soybean meal (SBM), primarily in ruminant diets such as feedlot steers and dairy cattle. As dry grind ethanol facilities are slowed or completely shut down, the availability of DDGS and inconsistency of the product will decrease its effectiveness as market competition for share in the diet.

Maintaining soybean meal's position as the premier protein source in animal feed diets is necessary to the viability of the soybean meal market. In the United States, meal drives the value of soybeans. While soybean oil may be worth twice as much on a per unit basis, the bean provides four times the amount of meal by weight. The sheer volume of meal drives the commodity value for whole soybeans, not just the value of oil. It is also important to remember that oil can be stored for much longer periods of time than meal, due to the differences in shelf life.

Soybean meal consumption is predicted to decrease by over 2 million tons due to the decrease in animal production numbers. Two million tons of SBM equates to 84 million bushels of soybeans that won't need to be processed from roughly 2 million acres due to lost SBM demand. One factor that may make a difference in this SBM demand scenario is the shuttering of ethanol plants. As ethanol plants are idled back, their Distillers Dried Grains output decreases with their reduction in ethanol output. It's too early to tell what this means for 2009 SBM usage.

Economists predict that the recession will hit beef cattle producers harder than poultry or hog producers due to the rise in beef prices 1.5 times higher than pork prices. USDA predicts 2009 beef production forecast as unchanged for now, after reducing the 2008 production estimate by 30 million pounds. Price per cwt in 2009 was reduced to a range of \$91-97. Beef exports were raised slightly for 2008, but left unchanged for 2009. Export forecasts for other meats are unchanged from last month.

Chris Hurt of Purdue University expects a slight profit or a break-even year in 2009 for pork production as long as supplies stay low. According to the USDA, swine market herd numbers were down 2.1 percent in December 2008, 2.4 percent compared to December 2007. Forecasts for farrowings continue to be lower than last year while pigs per litter are expected to increase, effectively offsetting the effect of either factor.

The latest USDA report "indicates that the downward trend in sow farrowings and broiler hatchery egg sets will reduce the hogs and broilers available for slaughter." The report further explained, "Current slaughter data indicates that animal weights are lagging last year, and these lower weights are expected to continue through the early part of 2009 as producers adjust to poor returns."

Broiler production forecasts from USDA for 2008 and 2009 were reduced by 100 million and 200 million pounds, respectively, while average price remained even. Poultry numbers lead the meat industry contraction as large integrators are still experiencing the financial toll of increased feed costs from 2008. Broiler growers placed in program from weekly hatcheries are down 5 percent year on year from 2008, while cumulative placements are down 2 percent overall. January estimates reduced broiler production by 1 million pounds in December 2008 and the estimate for 2009 was reduced from 36.525 billion pounds to 36.325 billion pounds. Turkey flock numbers are contracting, as well.

A major chicken producer has declared bankruptcy and is facing reorganization and more beef packing plants have closed while profitability of livestock production hangs in the balance. The contemporary production practices used by livestock and poultry producers in the United States are under attack. Opposition groups have successfully challenged the confinement systems used by egg and pork producers in five states and won the battle.

The current market environment is tenuous for animal agriculture due to the systems that have evolved to protect and house the animal from weather, herd or flock dynamics, and disease. More than 98 percent of the United States population is three generations removed from the farm, leaving a knowledge gap of production practices that the opposition has been exploiting.

Building trust and consumer confidence in the contemporary system of food animal production is critical to the survivability of the U.S. livestock and poultry industries. As more challenges crop up at the state level the more precarious the position becomes. The increasing regulatory framework that defines which production practices are allowable and which are not continues to pose a challenge for producers trying to survive within the volatile market.

Building demand for U.S. meat in foreign markets results in increased demand for U.S. soy. Global meat markets shift continually, making USB efforts to assist in meat export marketing programs critical to the success of U.S. soy producers. Worldwide animal health issues such as Bovine Spongiform Encephalopathy (BSE), Hoof and Mouth Disease and High Pathogenic Avian Influenza (HPAI) all have detrimental effects on meat exports.

While the U.S. provides one of the safest, most reliable food supplies in the world, meat exports enter foreign countries frozen. Frozen meats face a stigma in many of these countries as sub-par to fresh, locally-raised meats. Many foreign markets critically need education on the equality of frozen to fresh products, as well as safe cooking procedures to either prevent or deactivate pathogens in meat preparation. The migration of meat production to foreign markets would drastically reduce the demand for U.S.-sourced soybeans. The premise is the preservation of the U.S. consumption of soy products through U.S. livestock and poultry.

Growth in poultry and red meat exports translates into more soybean meal utilization domestically as feed. Russia and China continue to top the list of U.S. chicken meat importers, while new growth opportunities are emerging in Central and South America for turkey meat. Maintaining Russia's position as a top importer of U.S. poultry has proven challenging due to the Russian political scene, and the use of U.S. poultry as a maneuvering point in trade debates. China has overtaken Russia as the top importer of U.S. chicken of late, and is poised to continue this trend. New markets are constantly evolving as U.S. chicken becomes more available globally and more countries develop cold storage and transportation options.

The United States continues to compete against in-country production, as well as against Brazilian chicken exports. The partnership between the soybean checkoff and the USA Poultry and Egg Export Council focuses on maintaining the existing markets and growing new markets through education and trade servicing.

The domestic aquaculture industry is limited in its ability to expand because of the high demand for shoreline and inland waterways for recreation and residential use. Historically, the industry has faced opposition from the fishing industry and consumers. However, a new era of social consciousness is offering a golden opportunity to the aquaculture industry that has never before existed. Consumers, restaurants, distributors and even aspects of the fishing industry are recognizing the limitations of meeting seafood demand with wild caught fish. "Sustainability" as a buzz word represents a major opportunity for the U.S. aquaculture industry that should be capitalized on immediately.

At the same time, consumers view aquaculture as inferior to wild caught in terms of taste, healthfulness and freshness. Farm-raised fish still take a back seat to wild caught. For example, in the hybrid striped bass industry, regional wild caught striped bass own the market when in season and capture a premium, while the farm-raised hybrid striped bass market must work around wild caught availability and accept a lower price. The market is ripe to receive education regarding the consistent high quality, healthfulness and environmental benefits of U.S.-produced aquaculture.

In addition, the southern catfish industry is in serious decline because it cannot compete with low-cost imports. The catfish industry relies on tired farming practices, with some reluctance to change. However, younger aquafarmers have exhibited some willingness to try new technology. Auburn University and local extension services have been working to bring new technologies and management practices to southern catfish producers. Domestic Marketing has begun funding a project with Auburn University to improve technology practices. Continued progress in technology and production management practices is imperative to the survival of the U.S. catfish industry. Offshore fish farms have taken off in international markets such as Chile and China, thanks in large part to USSEC and New Uses programs. However, the U.S. aquaculture industry cannot yet take advantage of offshore aquaculture. USB's Domestic Marketing Committee can best help by learning from the successes of USSEC and New Uses, while building a foundation with the industry to be ready should offshore aquaculture become a reality.

Although the domestic aquaculture industry has a membership organization to represent them, the National Aquaculture Association (NAA) is limited in its ability to provide marketing support to the industry due to lack of funds and limited staff. This organization was supported by the DMC in FY 2009, and has begun efforts to educate the media and stakeholders on U.S. aquaculture production. Much work needs to be done. For example, the industry is in need of education on how to address biosecurity issues and also talk to its customers about safe production practices.

### **Strategic Approach**

The strategic approach for the Animal Utilization target area is to build demand for U.S.-sourced soybean meal to assist in reaching the annual utilization objective of 3.5 billion bushels through domestic livestock and poultry feed consumption. Within the Animal Utilization strategic approach, it is essential to concentrate on the maintenance and growth of SBM feed markets existing in the United States.

Poultry and livestock consume 98 percent of domestic soybean meal. The migration of meat production to foreign markets would drastically reduce the demand for U.S.-sourced soybeans. The premise is the preservation of the U.S. consumption of soy products through U.S. livestock and poultry. This approach is focused on supporting the #1 customer for U.S. soybean meal – American livestock and poultry producers – and building recognition as to the importance of livestock production among several sectors.

The Animal Utilization target area addresses the LRSP objective of collaborating on the development and achieving adoption and global acceptance of improved soy technologies and biotechnology by researching the application of new traits on solving problems in feeding soybean meal to livestock. The strategic approach is focused on supporting improvements and early adoption of traits such as increased metabolizable energy and removal of anti-nutritional factors.

The mission of supporting the animal agriculture industry is to create an environment in which a safe, reliable and affordable supply of protein products consistent with evolving consumer values for environmental and animal welfare standards can be provided while assuring animal producers the maximum opportunity to sustain profitable operations. Success will be driven by a value chain-based coalition of national, state, and local

organizations that will work to create the opportunity for profitable U.S. animal agriculture, soybean producers' biggest customer. This approach builds to the LRSP objective of promoting U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs with our primary customers.

USB's aquaculture efforts have been led by USSEC and New Uses in recent years, since the majority of aquaculture production opportunities exist overseas until new policies allow a broadening of domestic aquaculture. DMC programs have focused on assisting the aquaculture industry in helping themselves in terms of education, promotion and improving production practices. DMC's focus is to work in partnership with International Marketing and New Uses to complement their efforts and avoid duplicate programs that would waste checkoff funds. By working through the National Aquaculture Association, and by aligning closely with USSEC and New Uses efforts, the DMC can help the existing U.S. aquaculture industry while paving the way for future opportunities.

**Ability to Impact**

USB can impact the Animal Utilization target area by supporting U.S. livestock, poultry and aquaculture industries. This includes increasing awareness of the importance of these industries to U.S. soybean farmers and providing solutions to digestion and environmental issues.

Supporting domestic livestock and poultry production by communicating the importance of livestock to soybean producers helps to ensure long-term domestic soybean meal customers. By encouraging the export of U.S.-produced pork, chicken and beef, more soybean meal is used domestically, and the domestic livestock industry is supported by increasing the availability of animal protein worldwide.

USB can also facilitate greater demand through development of composition-modified soybeans, such as low-phytate and reduced-oligosaccharide soybeans that would have greater digestibility by changing the complex fiber fraction to digestible sugars. The improved digestibility would result in less wasted phosphorus and less solid waste pollution from swine and poultry manure.

Research conducted on allergenic responses in swine has the ability to affect the entire pig population. Development of an allergenicity model in swine could create models for other species with allergenic responses, including humans.

USB's Domestic Marketing Committee has the ability to help U.S. farmed catfish operations improve technologies and management practices through projects to demonstrate the cost reductions, feed gain improvements and efficiency improvements now available. Demonstrations of these practices will encourage adoption by other fish farms and help maintain soybean markets.

The DMC can also build effective industry relationships and assist the National Aquaculture Association, which has limited available funding, to build outreach activities and market to the food and restaurant industries the health, economic and environmental benefits of aquaculture.

**LRSP Objective 1:**

I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**A. Domestic Marketing – Animal Utilization**

**Goal:**

1. Preserve the domestic soybean meal market at 98 percent consumption rate.

**Strategy:**

a. Demand Building

Educate animal nutritionists and feed formulators on the consistency, superior amino acid complex, and availability of U.S. soybean meal.

**Tactics:**

- i. Review up-to-date soybean and SBM research in feed rations and educate feed industry with relevant information.
- ii. Determine livestock industry customer needs through interaction at trade shows, scientific societies, technical gatherings and working groups.
- iii. Encourage the feed and livestock industries to support new SBM research.
- iv. Develop and identify customer needs for soybean meal.

**Performance Measures:**

- i. At least three feed and livestock companies or organizations engaged in supporting new SBM research and development through funding and work-in-kind.
- ii. Two key customer needs pertaining to SBM are identified.

**Strategy:**

b. Demand Building

Coordinate with leading animal nutritionists to target soybean checkoff investment in animal-related research.

**Tactics:**

- i. Continued implementation of the Animal Nutrition Working Group plan that will stimulate information sharing to QUALISOY within the next three years focused specifically on meal enhancement for animal utilization.
- ii. Coordinate to include U.S. soy farmers, crushers, feeders and processors in the Animal Nutrition Working Group.

**Performance Measures:**

- i. Provide two strategic value enhancements for SBM through the Animal Nutrition Working Group to QUALISOY, DMC, and other program committees.
- ii. Firm commitments for ANWG participation through FY 2011 by at least 90 percent of attendees.

- iii. At least 90 percent of attendees agree to actively assist USB on issues facing SBM utilization.
- iv. All attendees comprehend USB's focus and progress relative to meal improvement efforts over the past 10 years.
- v. Confirm that changes in soybean composition affecting SBM are necessary to maintaining a competitive market position for meal globally.
- vi. Prioritize USB's meal composition targets.
- vii. Practical barriers to the most efficient utilization of soybean meal's nutrient potential have been identified.
- viii. Initial performance thresholds for industry adaptation of value-adding opportunities have been established.
- ix. Identification of a research pathway for soybean meal trait improvements.

**Goal:**

2. Build support for livestock and poultry production in the United States.

**Strategy:**

- a. Demand Building  
Support the domestic animal agriculture industry through the Center for Food Integrity (CFI).

**Tactics:**

- i. Define and direct specific CFI animal agriculture initiatives.
- ii. Coordinate a communication network with national, state and local stakeholder groups.
- iii. Quickly and accurately address public misinformation around food animal production, in both a proactive and reactive manner (respond to public directly; liaison with state livestock coalitions; ensure available support).
- iv. Assemble a broad-based forum of collaborating members, beyond domestic livestock producers, to address food animal industry issues.
- v. Conduct an annual strategy conference where food animal coalition members assemble with committee members to plan strategies and tactics that are beneficial for animal agriculture.
- vi. Develop a resource center to support domestic livestock production and address livestock industry issues as they arise.
- vii. Broaden funding partnerships to include the entire food system in its efforts to support domestic livestock production.
- viii. Continue the Value Chain Roundtable of Food/Restaurateur executives and staff to establish goals for communicating safe and sustainable U.S. food production.

**Performance Measures:**

- i. Ten organizations join CFI Livestock Committee.
- ii. All state livestock coalitions represented at the National Animal Ag Strategy conference.

- iii. Expansion from livestock producers to food producers within the coalition.
- iv. Two national organizations participating in Operation Hometown Outreach.
- v. Successful implementation of one CEO Roundtable of the Food/Restaurateur sector with clear direction to move forward.
- vi. Representation from 3 of the top 10 from both Food and Restaurant sectors on the roundtable.
- vii. Establishment of clear goals and objectives for the Animal Ag Coalition from this sector.
- viii. Support from the Food/Restaurateur sector for the Animal Ag Coalition through memberships and funding.

**Strategy:**

- b. Demand Building  
Gain support from the animal feed industry for QUALISOY.

**Tactics:**

- i. Utilize partnerships from the ANWG and feed industry outreach projects to build recognition for QUALISOY.
- ii. Build platform of support for QUALISOY research programs and trait improvements.
- iii. Collaborate with the animal agriculture supply chain by supporting QUALISOY efforts on those traits that specifically affect livestock production.

**Performance Measures:**

- i. Willingness of ANWG members to participate in QUALISOY-hosted activities.
- ii. Greater recognition of QUALISOY in the feed industry beyond the ANWG.
- iii. Accelerated adoption of new traits in feed industry.
- iv. Willingness of feed industry to partner on QUALISOY research activities.

**Goal:**

- 3. Expand targeted animal nutrition opportunities.

**Strategy:**

- a. Demand Building  
Increase the competitive value of SBM as a key feed ingredient for U.S. animal agriculture.

**Tactics:**

- i. Complete research on allergenicity and anti-nutritional factors in swine diets.
- ii. Further research in coordination with USDA-ARS on trait-improved soybeans with reduced anti-nutritional factors.

- iii. Evaluate low-phytate/phosphorus, reduced-oligosaccharide soybean meal in swine diets.
- iv. Identify new genetic, processing, enzymatic treatments that improve the value of SBM.

**Performance Measures:**

- i. Development of an allergenicity model in swine.
- ii. New soybean lines identified with removal of anti-nutritional factors and allergens.
- iii. Accelerated adoption of new traits in feed industry.

**Strategy:**

- b. Demand Building  
Continue information gathering on soybean meal production and consumption numbers in the U.S.

**Tactics:**

- i. Document the value and sustainability of livestock production in the United States through economic, environmental, land value, and health effects research.
- ii. Conduct an annual update to the Economic Analysis Report on all 50 states with executive summary interpretation.
- iii. Educate QSSBs and soybean farmers on the findings from the Environmental Regulatory Audit.

**Performance Measures:**

- i. Delivery of a written report and executive summary of the economic analysis for all 50 states, including PowerPoint presentations, including all support data that can be delivered by farmers or staff.

**Goal:**

- 4. Grow meat export opportunities.

**Strategy:**

- a. Demand Building  
Expand U.S. meat and poultry exports.

**Tactics:**

- i. Promote U.S. poultry exports and provide technical support in maintenance, growth and emerging markets through the USA Poultry and Egg Export Council (USAPEEC).
- ii. Promote U.S. pork exports and provide technical support in maintenance, growth and emerging markets through the U.S. Meat Export Federation (USMEF).

**Performance Measures:**

- i. Grow global poultry consumption by 5 percent in selected countries.
- ii. Maintain poultry meat exports to Russia.
- iii. Increase poultry meat exports to China.

- iv. Grow global pork consumption 29 percent by 2015 and 57 percent by 2030.
- v. Increase pork meat exports to Mexico and Japan.

**Strategy:**

- b. Demand Building  
Enhance perception of U.S. meat and poultry products as high quality among trade organizations and consumers.

**Tactics:**

- i. Re-establish identity of U.S. poultry and red meat as safe in markets that have banned U.S. product from trade.
- ii. Focus on building market opportunities and improving consumer acceptance to U.S. poultry in maintenance, growth and new markets.
- iii. Address public health and safety issues.
- iv. Address concerns or negative connotations affecting meat and poultry export due to consumption of biotechnologically-enhanced soybean meal.

**Performance Measures:**

- i. Consumer perception of U.S.-produced poultry and meat as safe and wholesome improved.
- ii. Confidence in U.S.-produced chicken is improved by 5 percent in Russian marketplace.

**Strategy:**

- c. Demand Building  
Support the long-term growth of worldwide protein consumption through increased consumption of U.S.-grown meat, dairy and egg products.

**Tactics:**

- i. Conduct an update to the 2006 Value of U.S. Meat Exports study.
- ii. Research and document new meat export opportunities.
- iii. Continue to build upon new markets for turkey exports.
- iv. Examine ROI in supporting beef exports.

**Performance Measures:**

- i. At least one new growth market for U.S. meat and poultry exports identified and due diligence on the value of that market as compared to maintenance and growth markets completed.

**Goal:**

- 5. Maintain domestic aquaculture markets for soybean meal in the face of increased production costs and low cost competition from seafood imports.

**Strategy:**

- a. Demand Building  
Support improved technologies and management practices to optimize production and decrease costs for domestic catfish production.

**Tactics:**

- i. Educate southern catfish producers on the benefits and opportunities for improved production technologies and management practices.
- ii. Conduct demonstrations of improved catfish farming technologies and communicate results.

**Performance Measures:**

- i. At least one new management practice concept and at least one new technology has been demonstrated to two separate catfish producers in FY 2010, with evaluation of success or failure leading to next steps.
- ii. At least two catfish producers have plans to adopt improved farming technologies and/or practices.

**Strategy:**

- b. Demand Building  
Support improved technologies and management practices to introduce and establish alternative finfish and shellfish species production to augment traditional domestic aquaculture.

**Tactics:**

- i. Partner with aquaculture producers, academia and stakeholders to evaluate and trial improved technologies and management practices for finfish or shellfish.
- ii. Evaluate successes and failures and use learned information to further opportunities.

**Performance Measures:**

- i. At least one non-catfish aquaculture producer trialed a USB-assisted technology or management practice improvement.
- ii. A pathway to next steps in technology improvements and better management practices has been determined.

**Goal:**

6. Set the stage for an opening of market opportunities in anticipation of possible future market climate changes that favor aquaculture production.

**Strategy:**

- a. Demand Building  
Establish relationships and partnerships with domestic aquaculture organizations.

**Tactics:**

- i. Continue membership in the National Aquaculture Association (NAA) and participate in USSEC/New Uses-led stakeholder events.

- ii. Evaluate other opportunities to support the NAA and engage with stakeholders through USSEC/New Uses as appropriate.

**Performance Measures:**

- i. DMC directors and staff have a clear understanding of the objectives of the NAA and understand how USB can help NAA to achieve those objectives.
- ii. Checkoff resources have enabled NAA to increase its outreach and communications activities and make headway in building relationships with food industry media.

**Strategy:**

b. Demand Building

Assist in educating targeted audiences of local aquaculture communities, the food industry and stakeholders on the health, economic and environmental benefits of domestic aquaculture.

**Tactics:**

- i. Support the National Aquaculture Association in outreach and education efforts.
- ii. Through NAA, conduct outreach to food industry and food media through meetings and industry events.
- iii. Educate aquaculture stakeholders on how to improve biosecurity and address biosecurity issues.
- iv. Provide training and education for aquaculture stakeholders based on emerging industry challenges.

**Performance Measures:**

- i. Aquaculture benefit messages have been developed and a program is under way to communicate information.
- ii. Food industry and media rely on NAA as appropriate source on the benefits of domestically-farmed finfish and shellfish.
- iii. At least one industry training seminar on aquaculture biosecurity has been completed with participants demonstrating the ability to improve biosecurity practices.

**LRSP Objective 2:**

- II. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

**Goal:**

- 1. Support competitive improvements to the soybean for animal consumption and encourage early adoption of new soybean traits focused on animal consumption.

**Strategy:**

a. Demand Building

Research the value of improved variety soybean meal in livestock diets.

**Tactics:**

- i. Engage the Animal Nutrition Working Group in evaluation of new traits.
- ii. Incorporate ILSI standards for evaluation of output traits in animal feeding trials.
- iii. Develop a multi-specie animal feeding trial testing the increased availability of energy from reduced-oligosaccharide soybeans.
- iv. Conduct animal trials on trait-improved soybean meal to demonstrate market value in conjunction with QUALISOY.

**Performance Measures:**

- i. One completed feeding study showing clear difference in animals fed contemporary soybean meal versus improved trait soybean meals.
- ii. Feeding trials completed in conjunction with major integrators in poultry and swine feeding, and feed companies for ruminant research.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Goal:**

1. Gather and make available to the industry information on sustainable animal agriculture practices.

**Strategy:**

- a. Demand Building  
Establish research-based information clearinghouse of animal agriculture information as a resource tool.

**Tactics:**

- i. Work for the Center for Food Integrity to gather and house information regarding animal agriculture production that will assist the animal agriculture industry.

**Performance Measures:**

- i. Methods for collecting and housing data have been identified.
- ii. Input from animal ag industry stakeholders has been gathered to determine what data will be most useful.
- iii. A timeline and plan for implementing the resource has been established.

**Goal:**

2. Assist industry in establishing sustainability definitions.

**Strategy:**

- a. Demand Building  
Coordinate with livestock organizations to establish sustainability definitions within agriculture.

**Tactics:**

- i. Conduct roundtable discussions with CFI Animal Ag Committee to build consensus on sustainability definitions.
- ii. Document definitions and agree on a process for ongoing review and modification.
- iii. Communicate findings through CFI.

**Performance Measures:**

- i. Successful meetings have occurred with lively discussion and broad participation.
- ii. A document has been created and sent through a review process by stakeholders.
- iii. Circulation of the document has occurred and potential external communication opportunities considered.

**Financial Allocations:**

Domestic Marketing – Animal Utilization: \$4,371,671

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## **Animal Utilization International Marketing Committee**

### **Market Environment**

Global soybean production for 2008/2009 is estimated at 220.9 MMT. This represents a 7 percent decrease over the production in 2007/2008, which was 219.9 MMT. The U.S. share of the world production is estimated to be 33 percent.

The United States continued as the largest producer of soybeans in the world, followed by Brazil and Argentina in 2007/2008. This year the U.S. total soy production at 80.54 million tons was 12.6 percent higher than the previous year due to the shift in acres from corn back to soybeans production. 2009 soybean plantings are expected to push soy production to over 81 million metric tons.

Mexico remains the number 1 export market for soybean meal at 1.14 million metric tons, with Canada following at a close second at 1.31 million metric tons.

A study from the United Nations Food and Agriculture Organization (UN FAO) predicts: "Net cereal imports by developing countries will almost triple over the next 30 years, while their net meat imports might even increase by a factor of almost five." Steady long run growth in the livestock sectors of developing countries in Asia, Latin America, North Africa, and the Middle East accounts for most of the growth in world coarse grain imports projected during the next decade.

Foreign countries that were once primary export opportunities for U.S. meat and poultry are growing their own domestic livestock industries. International consumption of soybean meal was 157.5 MMT in 2008, which would represent a 2 percent decrease over the previous year.

Soybean meal utilization in poultry alone is 54 percent of the international markets followed by swine (30 percent), dairy (9 percent), and aquaculture (7 percent). Expansion into high value products, such as full fat soybean meal, bypass soybean meal for ruminants, and starter diets for piglets and chicks is providing new market opportunities for U.S. soy products in international feed markets.

Predictions indicate that the global broiler trade will increase by 28 percent in the coming decade, reaching 7.6 MMT in 2012. The U.S. exported 6.7 million pounds of broiler production in 2008. The top five broiler meat producing nations in the world are now the United States, China, Brazil, Mexico, and India. China is also the largest producer of eggs in the world with production of 243 million tons, followed by the U.S., Japan, Russia, and Mexico.

Local poultry producers are also currently investing in animal feed production expansion, aiming to meet the increasing needs of their chicken farms. The poultry sector currently accounts for about 56 percent of Brazil's animal feed consumption. Brazil's chicken exports totaled 2.505 million tons in 2006, down from 2.739 million tons in 2005. Brazil currently is the world's largest chicken exporter, but the nation is experiencing declines in poultry exports due to Avian Influenza.

Canada is a major competitor with the U.S. in pork exports to Asia and Mexico. Brazil is also a major pork exporter.

Growth in aquaculture production is expected to continue at the current growth rate of 9 percent per year. Land based meat production is currently growing at about 3 percent. Increases in world aquaculture production will be driven by increases in the Chinese production, with South and Southeast Asia, Latin America, the Caribbean and Europe providing smaller increases. Freshwater species and mollusks are expected to dominate aquaculture production in the near future but demand for high value marine species continues to grow.

U.S. soybean meal faces increasing competition from global soybean producers, synthetic amino acids and other crops such as canola, corn and sunflower. Co-products, such as those from the production of ethanol, represent an additional competitive threat.

### **Strategic Approach**

The focus of this strategic approach is to establish U.S.-sourced soybean meal as the protein supplement of choice in animal rations throughout the world. One of the key components of increasing utilization of soy that encompasses the international animal production industries is to establish positive relations within the animal agriculture industries. These relationships are bridged through technical assistance programs, attendance at short courses and educational seminars, such as bio-security management, feed formulation, etc. Another key approach is establishing a market for value enhanced US soybean meal. This is meal that can be identified as having specific attributes that differentiates it from commodity soybean meal.

### **Ability to Impact**

USB can impact the animal utilization target area by supporting the global livestock, poultry and aquaculture industries. In addition, USB can continue to build demand and preference for U.S. soybeans and SBM by supporting export strategies and continuing to research the use of value-added SBM in livestock, poultry and aquaculture. By making compositional improvements to U.S. soybeans that end-users demand, the U.S. soybean industry can build customer preference.

USB can build demand in global aquaculture for soy-based diets. This includes supporting research to optimize the use of soybean meal and SPC in feed rations for selected species. It is projected that soybean meal inclusion rates in global aquafeeds overall will increase 17-25 percent based on SBM quality and economics of fish production. Global SBM demand for the aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90 percent of that growth in overseas markets. Both the inclusion rate and total demand numbers for soybean meal are conservative. The global aquaculture industry is the fastest growing sector of animal production. Global demand for cultured aquatic products, given the limitation of zero growth in wild catch, is expected to grow from its 2000 level of approximately 32 million metric tons to more than 53 million metric tons in 2020.

**LRSP Objective 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**Committee – Target Area:**

- A. IM – Animal Utilization

**Goal 1:**

1. In markets with large and/or expanding animal agriculture production, sustain and expand soy inclusion rates in animal feeding rations.

**Strategy 1:**

- a. Demand Building

**Tactics:**

- i. In China, USSEC will continue working with the swine and poultry industries to increase soy utilization in animal feeds.
- ii. Through the Soy-in-Aquaculture program, USSEC will increase the use of soy in global aquaculture production by shifting the industry away from traditional feeding practices that are manure-based (in the freshwater sector) and fresh-fish based (in the marine sector).
- iii. In India, efforts continue to focus on targeted feed manufacturers who still have limited awareness of the economic and nutritional potential for soy in either existing products or new products.
- iv. In Korea, USSEC continues efforts to educate dairy farmers on TMR about the feeding value of soy hulls as a source of energy and roughage, in turn aiding the Korean crushing industry to increase its hipro dehulled meal production.
- v. In the Middle East, USSEC will continue to promote the economic advantages and production/logistical benefits of buying and installing extruders for full-fat soybean meal production.

**Performance Measures:**

- i. In China, 166 key feed millers will increase their soybean consumption by attending nutrition and technical production seminars and assisting them with the use of advanced production technology and marketing.
- ii. Through the Soy-in-Aquaculture program, 60 aquaculture production units will switch to soy-based diets.
- iii. In India, 320 feed manufacturers will use soybeans in their animal feed products.
- iv. In Korea, three crushers will obtain a hipro dehulled meal production of 35 percent.
- v. In the Middle East, there will be a total of 180 extruders installed in the region.

**Strategy 2:**

- b. Customer Preference

**Tactics:**

- i. In Europe, USSEC will continue to conduct feeding trials with U.S. vs. South American soybean meal to showcase the U.S.'s superior digestible amino acid complex traits.

- ii. In Japan, USSEC's technologies are continuing to be utilized by the target audience showing consistent usage of U.S. soybean meal in the industry.
- iii. In Latin America, USSEC will continue to educate importers on better purchasing practices of soybean meal.
- iv. In Southeast Asia, USSEC continues to focus on the core buyers of bulk soybeans in the region who have the highest purchasing potential and ability to capture the value that U.S. soybeans have to offer.
- v. In Taiwan, USSEC will continue to educate new key buyers on the benefits of U.S. soy vs. soy of other origins.

**Performance Measures:**

- i. In Europe, 7 technically advanced and innovative feed companies will become convinced that micronized or higher inclusion rates of soy have value in their diets.
- ii. In Japan, targeted feed companies will obtain a U.S. soybean meal inclusion rate of 13.8 percent.
- iii. In Latin America, 67 major U.S. soybean meal importers will utilize better purchasing practices.
- iv. In Southeast Asia, 11 core buyers will develop a preference of U.S. soybeans.
- v. In Taiwan, 90 percent of preferred customers will support the U.S. as their first choice for soybean supplies.

**LRSP Objective 2:**

- ii. Approval in the importing countries that comprise 90 percent of U.S. soy products for each biotech event by the time of its commercialization.

**Committee – Target Area:**

- A. IM – Animal Utilization

**Goal 1:**

- 1. When specific soybean varieties with precise traits benefiting animal production are commercialized, USSEC will introduce them to the global animal production industry.

**Strategy 1:**

- a. Demand Building

**Tactics:**

- i. Organize feeding demonstrations in target markets that validate the efficacy of the new traits in animal production.
- ii. Organize informational campaigns in target markets about new soybean varieties to educate the global animal production industry on the benefits of utilizing U.S. soy.

**Performance Measures:**

- i. Feeding demonstrations will be arranged in a number of target markets to showcase the U.S. new soybean varieties and their benefits vs. South American soybeans.

- ii. Informational campaigns such as mailings, one-on-one meetings with the industry, and presentations at key conferences will be held to showcase the new U.S. soybean varieties and their benefits to the global soybean industry as a whole.

**Strategy 2:**

**b. Customer Preference**

**Tactics:**

- i. Offer educational programs to USSEC preferred customers in target markets to introduce new U.S. soybean varieties that will enable these preferred customers to purchase those varieties that meet their needs.
- ii. Provide USSEC preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

**Performance Measures:**

- i. USSEC will continue to provide avenues, such as trade shows and international trade team visits to the U.S., to allow interested importers and U.S. suppliers to develop relationships leading to U.S. soy purchasing sales of the new varieties.
- ii. Arrange U.S. site visits with companies producing the new U.S. soybean varieties to showcase to our preferred customers the new and exciting benefits U.S. soy has obtained through these new traits.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area:**

**A. IM – Animal Utilization**

**Goal 1:**

- 1. In markets where feed industries must demonstrate the sustainability of their raw material supply chains, US soybean meal will be recognized as an economically and environmentally raw material for animal feed rations.

**Strategy 1:**

**a. Demand Building**

**Tactics:**

- i. USSEC will continue its educational campaigns in Europe to emphasize the strides that have been made in the U.S. soybean industry in regards to sustainability, ultimately leading to an increase in U.S. imports for livestock feeds.

**Performance Measures:**

- i. USSEC will continue Grower Leader Trade Missions to Europe in order to educate European industry and government officials on the U.S. soybean industry's dedication to sustainability and the animal production industry.
- ii. Through participation at key conferences and presentations to the European animal agriculture industry, USSEC will continue its campaign

at establishing U.S. soy as a sustainable resource in the animal agriculture industry.

**Strategy 2:**

**b. Customer Preference**

**Tactics:**

- i. USSEC will continue to alert integrated processors and officials alike that U.S. soybean meal possesses the ingredients needed to be a sustainable product.
- ii. USSEC will position U.S. soybean meal vs. soybean meal of origins to European animal agriculture officials in which these officials ultimately realize that U.S. soybean meal should be their soybean meal of choice.

**Performance Measures:**

- i. Offer educational seminars in all global markets to USSEC preferred customers to show our dedication to responsible stewardship.

**Financial Allocations:**

IM – Animal Utilization: Customer Preference	<u>\$ 3,872,625</u>
IM – Animal Utilization: Demand Building	\$ 6,046,912
Total:	\$ 9,919,537

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## **Animal Utilization New Uses Committee**

### **Market Environment**

Aquaculture is the fastest growing animal agricultural industry. Aquaculture producers are seeking more efficient and sustainable ways to cultivate healthy species to satisfy growing market needs in a world whose population and food requirements are growing rapidly. The availability of quality protein ingredients for aquafeeds is a critical concern of aquaculture producers and feed manufacturers. Static supply of fishmeal, long the staple ingredient for high quality aquacultural feeds, is insufficient to meet the growing feed protein needs of the global aquaculture industry. Additional renewable and sustainable protein alternatives are needed. The rapidly expanding market for farm-raised fish is providing market opportunities for soybean meal, soy oil and soy protein concentrate both in the U.S. and overseas. The feed industry has recognized for many years that plant-based aquafeeds are an essential requirement for the future development of aquaculture. Soy continues to be the preferred alternative because it is readily available, nutritional, economical, renewable and environmentally friendly.

### **Strategic Approach**

The focus of this strategy is to establish U.S.-sourced soybean meal as the protein supplement of choice in aquafeed rations throughout the world. The strategic approach includes targeted research based on USB-supported planning to determine factors that limit the replacement of fish meal and oil with soybean meal and oil, and soy protein concentrate. Federal government intramural and competitive programs will be aligned with the findings of the research needed to increase the use of soy in aquaculture diets. Based on research results, the benefits of soy-based diets will be promoted globally through USSEC IM and domestic communications and feeding demonstrations. Efforts will continue through the USB-Aquaculture Industry Coalition to build interest in and promote the demand for soy as a primary source of protein and oil in domestic and international commercial fish rations.

### **Ability to Impact**

USB can impact the animal utilization target area by building demand in the global aquaculture industry for soy-based diets. This includes supporting research to optimize the use of soybean meal and oil and soy protein concentrate in feed rations for selected species.

It is projected that soy inclusion rates in global aquafeeds overall will increase to 17-25 percent based on quality and economics of fish production. Global soybean meal demand for the aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90 percent of that growth in overseas markets. Both the inclusion rate and total demand numbers for soybean meal are conservative. The global aquaculture industry is the fastest growing sector of animal production. Global demand for cultured aquatic products, given the limitation of zero growth in wild catch, is expected to grow from its 2000 level of approximately 32 million metric tons to more than 53 million metric tons in 2020.

**LRSP Objectives 1 & 3:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area**

- A. New Uses – Animal Utilization

**Goal:**

1. Build demand for U.S. soy in aquaculture markets.

**Strategy 1:**

- a. Demand Building  
Support research related activities that will enhance marketing efforts to increase use of soy products in aquafeeds.

**Tactics:**

- i. Utilize the services of universities, federal agencies, and other organizations to improve understanding of the factors that limit the replacement of standard fish-meal based diets with soy-based diets in selected species.
- ii. Refine Stearidonic Acid (STA) soy oil replacement of fish oil to increase omega-3 fatty acid content in fish being fed soy-based diets.
- iii. Evaluate the impact of low-phytic acid cultivars of soy on the environment and product quality.
- iv. Develop a standard line of fish in order to compare various feed formulations, having a fish population with a uniform genetic background available to all researchers that could improve the ability to compare results across studies and simplify interpretation of results.
- v. Develop technical bulletins to communicate research results to aquaculture nutritionists and the feed industry.
- vi. Collaborate with Domestic Marketing to educate catfish producers on the opportunities for more favorable economics by demonstrating and communicating the benefits of improved production technologies and management practices and use learned information to further opportunities for other fish species.
- vii. Continue to build a coalition with the aquaculture industry to enhance research and support for soy-based rations.
- viii. Build awareness and adoption of soy in aquafeeds through support of the National Academy of Sciences Board on Agriculture and Natural Resources efforts to update a 1993 report on the Nutrient Requirements of Fish.
- ix. Align federal programs with the recommendations of the Plant Products in Aquafeed Working Group, and, to the extent possible, develop new sources of funding for researchers.

**Performance Measures:**

- i. Nutrition requirements identified and feed formulations determined for marine shrimp, cobia and Atlantic cod.
- ii. One member of industry funds or shares research on soybean meal.

- iii. Quantifiable progress toward the development of new Federal projects or realignment of existing projects to the strategies or goals identified by the USB Animal Utilization Action Plan in general and the Plant Products in Aquafeed Strategic Plan specifically will be demonstrated.

**Financial Allocation:**

New Uses – Animal Utilization: \$740,512

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## **Communications Committee Industrial Utilization**

### **Market Environment**

The U.S. agriculture industry continues to be one of the more positive sectors of the U.S. economy, but that excitement doesn't come without significant change and rising outside pressures. Most row crop prices and demand for most oilseeds remain strong. Technological advances continue to challenge U.S. soybean farmers to grow products with the purpose of meeting specific customer demands in certain segments. Overproduction may once again become a detriment to the U.S. soy industry should the "10 percent higher yield" promise ring true from major seed and other input technology providers. Soybean acreage was near an all-time high in 2008 and grew even larger in 2009. This continuous climb in acreage can be attributed to many variables, with a leading factor being the anticipated margin between production costs and sale price of corn versus soybeans, which in some cases makes soybeans the more profitable option.

While the collective outlook for soybean planted acreage, demand and prices remains modestly positive, U.S. soybean farmers face additional challenges, including rising input costs and a shrinking land base along with some concerns about the financial underpinnings of current farmland values. These "closer to home" issues along with a signs of a slow U.S. economic recovery have created pessimism on the overall attitudes of U.S. consumers, and farmers are no different.

The most recent USB Soybean Producer Attitudes Survey shows 51 percent of U.S. soybean farmers use soy biodiesel on their farm, down from 57 percent last winter. The same survey shows soybean farmers indicate "lack of availability" remains the biggest obstacle for them, with cost cited as the second reason. Fuel suppliers and biodiesel manufacturers who blend soy biodiesel with petroleum diesel for farmers, truckers and other major diesel users receive a one cent tax credit for every one percent of biodiesel they blend with petroleum diesel. But many fuel suppliers continue to price soy biodiesel blends at or above the price of petroleum diesel.

Changes to the federal Renewable Fuel Standards being proposed by the Environmental Protection Agency (EPA) will also have an impact on biodiesel communications in FY 2010. The EPA proposed rules, combined with the European Union duties placed on imports of U.S. biodiesel, could potentially halve the U.S. biodiesel production, according to the National Biodiesel Board.

### **Strategic Approach**

Along with soybean farmers, communications will focus more in FY 2010 on industry influencers (including equipment manufacturers and biodiesel producers) providing both proactive and reactive information as necessary. This includes partnerships with industry trade associations as well as other commodity organizations to accomplish checkoff priorities. Ongoing outreach with these organizations, and one-on-one interactions with their leadership, allows checkoff farmer-leaders to promote priorities and engage these organizations in activities that will help accomplish USB objectives.

The checkoff will work with biodiesel and biobased product manufacturers and users to continue driving awareness and utilization of industrial soy products. One significant message the checkoff plans to convey in FY 2010 is the superiority of soybean oil as a feedstock for

biodiesel. Efforts will be focused on biodiesel producers with the goal of increasing the percentage of soybean oil used in biodiesel production.

**Ability to Impact**

USB is responsible to every contributor of the soybean checkoff, each of whom has a vested interest in the activities of the checkoff. Within the soybean industry, USB is largely viewed as a reliable, third-party resource. The combination of the two allows USB to make a strong impact on the soybean industry.

**LRSP Objectives**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.
- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area**

- A. Communications – Industrial Utilization

**Goal:**

Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the agriculture value chain and consumer thought leaders.

**Strategy 1:**

- a. Soybean Producers and Industry

**Tactics**

- i. Continue to build soy biodiesel availability and use among U.S. soybean farmers by emphasizing soy biodiesel quality and engine performance benefits in all materials and events.
- ii. Execute national opportunities, such as the National Farm Machinery Show National Championship Tractor Pulls and National Tractor Pullers Association events to increase the number of U.S. soybean farmers who believe perceived biodiesel problems have been resolved.
- iii. Communicate the superiority of soybean oil as a feedstock for biodiesel production to biodiesel producers.
- iv. Demonstrate the soybean checkoff’s key involvement in the development and continued growth of the U.S. biodiesel industry and for soy-based bioproducts.
- v. Increase demand for soy biodiesel among other major diesel users.
- vi. Provide support to National Biodiesel Board (NBB), Original Engine Manufacturers, the National Tractor Puller’s Association and the trucking industry to increase the availability and use of soy biodiesel.
- vii. Capitalize on the interest in soy biodiesel to create demand for other soy-based bioproducts.
- viii. Represent USB and actively participate in biodiesel industry activities and events.

- ix. Investigate new opportunities to communicate with consumer audiences on U.S. soybean farmers.

**Performance Measures**

- i. Help Increase the use of soy biodiesel among U.S. soybean farmers from 51 percent to 55 percent.
- ii. Help reduce the percentage of U.S. soybean farmers citing “availability” as a major reason they do not use soy biodiesel.
- iii. Communicate the superiority of soybean oil as a feedstock for biodiesel to increase the percentage of soybean oil currently used in biodiesel production.
- iv. Secure stories in mainstream media outlets that include a positive agriculture message on checkoff soy biodiesel and soy biobased products goals and priorities.

**Strategy 2:**

- b. USB Board & QSSBs

**Tactics**

- i. Organize and carry out a reimbursement program with QSSBs for pre-approved, state-based activities to increase the availability and use of soy biodiesel and/or biobased products.
- ii. Coordinate and provide communications support to QSSBs for biodiesel and soy-based bioproduct promotion activities.
- iii. Coordinate development of and supply soy biodiesel premiums, advertisements and educational materials for QSSBs.
- iv. Fulfill biodiesel information and material requests from USB Directors.

**Performance Measures**

- i. Increase the number of QSSBs eligible for soy biodiesel reimbursement program assistance.
- ii. Help increase the use of soy biodiesel among U.S. soybean farmers from 51 percent to 55 percent.
- iii. Help reduce the percentage of U.S. soybean farmers citing “availability” as a major reason they do not use soy biodiesel.

**Financial Allocations:** \$813,703

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## **Industrial Utilization Domestic Marketing Committee**

### **Market Environment**

The market environment for industrial utilization of soybean products reflects several factors:

- The prices of competing petrochemicals remain extremely volatile. Petrochemical prices rose sharply in 2007 and 2008 reflecting the high cost of crude oil and natural gas, before falling in late 2008 and the first quarter of 2009.
- The general global recession is negatively impacting sales of all chemical materials including soy.
- Despite the difficult economy, sales of soybean oil for industrial products rose to over a billion pounds and the introduction of soy adhesives for plywood increased soy meal consumption by an estimated 180 million pounds.
- Actions by European countries to curtail exports of biodiesel from the U.S. cast some doubts on the near-term demand for soybean oil to make biodiesel as well as the availability of by-product glycerin for industrial uses.
- However, in the future the Renewable Fuel Standard (RFS) should continue to create demand for soy-based biodiesel, and the demand for Bioheat as a fuel for boilers and home heating is increasing. Currently three states, New York, Maine and Connecticut, have tax credits or exemptions and Massachusetts has a B2 (increasing 1 percent per year to a B5) mandate in place. The city of New York is proposing a B20 mandate.
- New soy industrial products continue to be well received in the marketplace due to environmental and sustainability advantages. Examples include the new plywood adhesives made with soy flour, which eliminates formaldehyde, or soy spray foam insulation, which provides significant energy savings. Both show strong growth despite the downturn in construction.
- The debate over global warming and a potential cap and trade system for greenhouse gas emissions could favor soy industrial products. An initial project and meeting with the Chicago Climate Exchange create optimism that the use of substitution of soy products for petrochemical could be used to generate tradable carbon credits. Significant efforts to qualify soy products remain to be completed and federal actions to create a cap and trade system is still far from certain.
- Interest in soy industrial products is global in scope. A study released by the LMC group has estimated soy oil industrial use for plastics in Asia to surpass levels in the U.S. with strong utilization and growth in South America as well. U.S. producers are known to be exporting soy polyols and other soy derivatives to Europe with success.

Typically, soy industrial uses such as plastics are growing due to their higher value and/or lower cost. No direct federal subsidies are available to stimulate market growth. Some assistance is being given, however, by Federal Procurement Preference programs. The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) reinforces and strengthens USDA's BioPreferred Program for listing biobased products eligible to receive federal purchasing preference (including ways to accelerate the listing of finished products that use intermediate biobased ingredients and/or biobased components). The 2008 Farm Bill also directs USDA to complete the "USDA Certified Biobased" labeling program as expeditiously as possible and makes feedstocks and intermediates eligible

to receive the label. This label can play an important role in increasing biobased product awareness. The label is particularly important to the Farm Bill's intent to make the federal procurement program a market development tool for biobased procurement across the nation. USB-funded public opinion research conducted in January 2009 found that 65 percent of Americans are totally unfamiliar with biobased products. The research also identified that the ability of biobased products to enhance U.S. energy security was the leading benefit of biobased products to the public. Being good for the environment followed closely as the second most compelling reason to support biobased products.

The 2009 Economic Stimulus Bill creates new opportunities to increase the purchasing of biobased products by federal agencies as well as state and local governments, particularly in the areas of energy efficiency improvements for government buildings, road and other infrastructure repair and construction, and housing weatherization programs. The use of biobased products will help to create "green jobs", reduce dependence on imported oil, and support sustainable development.

USB's work with federal employees creates a springboard to educate state and local governments as well as the private sector about biobased products benefits. The federal government buys more than \$500 billion in goods and services annually. The federal recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general. Federal procurement as well as the biobased label that USDA will create can play a major role in increasing public awareness of biobased products and their benefits. Already, the Midwestern Governors Association has approved launch of a biobased procurement initiative based on the federal Biopreferred program. Counties are also seeking opportunities to buy green products through the federal General Services Administration.

### **Strategic Approach**

The Domestic Marketing – Industrial Utilization target area has two strategies: 1) biodiesel; and 2) research and commercialization. The strategic approach for biodiesel includes the continued support of the National Biodiesel Board's efforts in the areas of Industry Communications and Coordination, Technical and Operations Support, and BQ 9000 Quality Assurance. Four additional strategies for FY 2010 and beyond are: 1) Original Equipment Manufacturer engine/engine oil testing; 2) follow-up on maintaining the ASTM standards for biodiesel and biodiesel blends; 3) UL tank, piping, and dispenser and pipeline transport approvals; and 4) biodiesel sustainability.

The research and commercialization approach focuses on increasing acceptance and usage of biobased products within the public and federal markets. The federal market is large and can be a market leader for other levels of government and the private sector. The strategic focus for biobased products is on leveraging USB's efforts with manufacturers and federal agencies, and promoting the various incentives and drivers in place within the federal government to move biobased products into the market.

Ongoing issues to be addressed in both the bioproducts and biodiesel areas are "sustainability" and "land use". Potential biodiesel and biobased products users around the world are frequently asking the question, "Are the soybeans being grown in a sustainable manner and were rainforests or wildlife habitats disturbed or destroyed in order to grow this crop?" USB will have to continue to answer these questions in its biodiesel and biobased products outreach.

**Ability to Impact**

*Biodiesel* – USB can continue to support the use of biodiesel fuel to farmers, truckers and the general public and work to increase awareness and usage of soy-based products within the federal government. Although the current economic environment for biodiesel is challenging due to federal and state initiatives, we expect to see continued demand growth for biodiesel long-term.

The Original Equipment Manufacturer (OEM) engine testing program continues to assess the effects of biodiesel blends (B20) on the performance of modern diesel engine and emissions control systems meeting emissions standards that will go into effect between now and 2010 for on-road engines, and in the post-2010 timeframe, for off-road engines. This work will include research to understand the impact of B20 on the operation and durability of particle filters and NO<sub>x</sub> control devices, to optimize engine and emission control systems for operation on B20, and to understand how B20 affects engine component durability and engine oil dilution. The studies will utilize biodiesel and petroleum diesel that are representative of commercial fuels.

ASTM has now implemented stability specifications, as well as additional controls to address filter clogging and precipitates above the cloud point from the presence of minor compounds in the B100 blend stock specification ASTM D6751. This action cleared the way for the October 2008 passage of the allowance of up to 5 percent biodiesel in the conventional specifications for on/off road diesel fuel (D975) and home heating oil (D396). Additionally, specs were passed for a new ASTM specification for on/off road fuels for B6 to B20 blends (D7467). During the balloting process, the veracity of several of the parameters in D6751 were questioned, but the existing data, much of it funded by USB, was sufficient to pass the blended fuel specifications. ASTM working groups and industry efforts have been formed to follow-up on the parameters or areas that were questioned in the balloting process. To maintain the ASTM specifications we now have, additional efforts are needed in the areas of oxidation stability, water separators, cold weather operability methods specifications and solubility of minor compounds in Ultra Low Sulfur Diesel (ULSD). Supplying a quality biodiesel product to consumers is a top priority. In order to help ensure biodiesel quality, the BQ-9000 Accreditation Program was developed and is being promoted to producers, marketers and consumers. It is a cooperative and voluntary program for the accreditation of producers and markets of biodiesel. The program is a unique combination of the ASTM standard for biodiesel, ASTM D6751, and a quality systems program that includes storage, sampling, testing, blending, shipping, distribution, and fuel management practices.

*Research and Commercialization* – Soybean oil can be an effective competitor to petrochemical products both functionally and economically. In the past decade, scores of new soy industrial products have been launched as a result of checkoff funding, including plastics, lubricants, coatings, inks, adhesives and solvents.

Checkoff funding has been effective in the development of new technologies through research and in transferring technologies to partners to gain trial and adoption. Volatility in petroleum prices and long-term projections for increased demand continue to create opportunities for soy-based industrial products to compete. The checkoff can support research to reduce processing costs for soy products to further improve competitiveness. The checkoff cannot influence regulatory issues, but has responded to regulations that favor soy product use by developing products that have economic advantages in meeting regulations and assists in the development of procurement

standards and guidelines that encourage active adoption. The checkoff can also take advantage of the new, growing private sector interest in adopting sustainable business practices by providing information to companies and sustainability opinion leaders about the benefits of using more sustainable products made with renewable, biobased feedstocks. USB can document successful biobased product purchasing by the federal government to validate the role biobased products can play in helping the private sector achieve its sustainability objectives.

USB will continue to promote the use of biobased products through government procurement by continuing trial and adoption programs with identified federal, state and/or local agencies. These efforts are even more important now that USDA has issued multiple rules that include hundreds of biobased products that government agencies are expected to purchase under the program and the Federal Acquisition Regulation. This program contains the uniform policies and procedures for acquisition used by federal government agencies, including requirements for biobased purchasing.

The federal biobased program has also triggered states to approve legislation that is modeled after the federal biobased procurement programs. The Midwest Governors Association has launched a biobased initiative while the National Association of State Procurement Officials has included biobased in its 2009 overall “green procurement” conference. Members of the National Association of Counties have also proposed a resolution to allow counties to buy green products through federal procurement programs and seven counties are already participating in USB biobased products demonstrations. All of these efforts create new opportunities for biobased products.

USB will also initiate outreach and education activities aimed at the private sector’s interest in sustainable practices. Because of USB’s leadership on biobased product outreach to government audiences, private-sector entities, such as the hotel industry, have shown interest in USB serving as a resource to their greening and sustainability programs. Widespread media coverage on land use studies and food vs. fuel debates have already prompted existing biobased customers as well as potential users of biobased products to ask questions about the sustainability of soy as a feedstock for biobased products. These questions must be addressed or they will undercut the progress of the biobased economy. USB’s work on updating the lifecycle analysis of soybeans provides an important tool in positioning soy-biobased products as environmentally beneficial.

**LRSP Objectives 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**A. Domestic Marketing – Industrial Utilization**

**Goal:**

- 1. Increase the use of biodiesel in vehicles to help drive the utilization of 3.5 billion bushels of soybeans.

**Strategy 1:**

- a. Biodiesel

Communicate with engine manufacturers, stakeholders, biodiesel producers, biodiesel consumers and the media regarding the many benefits of soy biodiesel.

**Tactics:**

- i. Target soy biodiesel messages and communicate with key audiences through trade organizations, associations, publications and general media using a comprehensive communications and coordination effort and to assure a smooth transition into the National Renewable Fuel Standard.
- ii. Promote and advertise fuel quality by educating users, marketers and suppliers about the ASTM specification and BQ-9000 quality assurance program.
- iii. Encourage sales of biodiesel blends and build industry credibility.
- iv. Document the economic and societal benefits of increased biodiesel production and use.
- v. Provide technical, economic and information support to agencies, ASA, state soybean associations, and other stakeholders in the areas of fuel management, operations and maintenance, and on national biodiesel incentives.
- vi. Support QSSBs and other industry stakeholders in their biodiesel programs and activities.
- vii. Coordinate and prioritize biodiesel industry needs with biodiesel, petrodiesel, OEM, government and academic experts.
- viii. Provide support to state biodiesel coalitions.
- ix. Provide timely updates to Alliance and Backer members to assist them in staying current on the biodiesel industry.
- x. Monitor, analyze and report regulatory and legislative activities relevant to the use of biodiesel to USB and allied organizations.

**Performance Measures:**

- i. Media coverage increased by 5 percent, including 15 placements in national or top 20 media markets.
- ii. Increase the number of BQ-9000 companies in FY 2010 by 15 percent from the ending number in FY 2009.
- iii. A new BQ-9000 Laboratory Program is being launched later in FY09. Certify two laboratories under the program in FY10.
- iv. Develop and provide two press releases, two articles, two letters to the editor and provide 40 interviews to journalists covering biodiesel issues.
- v. Attend four face-to-face meetings supporting state biodiesel coalitions.
- vi. Develop a consensus-based biodiesel priorities program and secure NBB board member approval.
- vii. Growth of the Biodiesel Alliance and Backers membership by 10 percent.
- viii. Conduct one survey of Alliance and Backers members regarding increased support for biodiesel.
- ix. Build industry credibility by presenting at 10 major meetings or conferences and answering 50 questions per month.
- x. Increase public awareness of biodiesel.

**Strategy 2:**

- b. Biodiesel  
Collaborate with the biodiesel industry to develop biodiesel technical strategies and provide technical assistance to the biodiesel industry.

**Tactics:**

- i. Gather stakeholders together for discussions on quality, product availability, and other industry issues.
- ii. Participate in trade shows and industry meetings.

**Performance Measures:**

- i. Attendance at stakeholders meetings increase year over year.
- ii. Domestic Marketing Committee farmer-leaders attend at least three biodiesel meetings or events.

**Strategy 3:**

- c. Biodiesel  
Continue to gain and build support of the OEMs.

**Tactics:**

- i. Respond to field-related technical inquiries posed by the various OEM manufacturers.
- ii. Collaborate with OEMs to facilitate and respond to specific inquiries from fleets.
- iii. Maintain a National Biodiesel hotline to assist users, OEMs and fuel dealers as the National Renewable Fuel Standard is implemented.
- iv. Encourage adoption of BQ-9000 as a strong recommendation in OEM statements and owner's manuals.
- v. Encourage the adoption and enforcement of D6751 by state departments of Weights and Measures.
- vi. Educate diesel mechanics and diesel shop supervisors on biodiesel and biodiesel blends.
- vii. Educate OEM dealers on biodiesel and biodiesel blends.
- viii. Work with NREL to provide industry-wide fuel quality information on B2-5, B11, B20 and B100 for quality.
- ix. Provide resources to secure and/or maintain the ASTM specifications for biodiesel and represent the U.S. biodiesel industry in international specification negotiations with OEMs to ensure soybean oil biodiesel is not unfairly restricted or penalized for non-performance reasons.

**Performance Measures:**

- i. Work with NREL to share NREL fuel survey results in a minimum of three OEM meetings, webinars or conference calls.
- ii. Conduct 10 training programs on-site or CD-ROM/DVD for diesel mechanics and diesel shop supervisors.
- iii. Answer 250 inquiries through the National Biodiesel hotline.
- iv. Increase the states that have adopted D6751 from 40 to 44.
- v. Fifteen OEMs will recommend or require BQ-9000 in their owner's manual or warranty statements.
- vi. Educate a minimum of 300 OEM dealers.

- vii. Positive B20 warranty statements will total over 20 by the end of the fiscal year, up from 16 currently.
- viii. The ASTM specifications will be maintained for D6751, B5 and B6 to B20.
- ix. Represent the biodiesel industry at a minimum of two international specification meetings or conferences.

**Strategy 4:**

- d. Biodiesel  
Ensure production and marketing of high-quality biodiesel products.

**Tactics:**

- i. Educate biodiesel producers on the critical issue of product quality and specifications.
- ii. Work with the National Biodiesel Board and other stakeholders to document quality standards.

**Performance Measures:**

- i. Producer survey indicates improved perception of biodiesel quality.
- ii. Incidences of quality issues are reduced year over year.

**Strategy 5:**

- e. Biodiesel  
Respond to industry technical needs and develop and promote new and additional ASTM standards.

**Tactics:**

- i. Provide resources to address ASTM issues such as filter clogging above the cloud point, solubility of minor compounds in ULSD, lowering of existing specifications for adequate PM trap control (i.e., phosphorus or other metals), use of new water and sediment tests, impact of biodiesel on water separators, confirming oxidation stability values, and parameters needed for movement of biodiesel blends on the pipeline.
- ii. Provide resources to address approvals of biodiesel and biodiesel blends with tanks, pumps, and dispensers with UL, California Water Board, and other approval bodies.
- iii. Provide resources to work with the Jet Aircraft manufacturers, pipeline companies, and petroleum companies on securing technical approval for shipment of biodiesel blends on U.S. pipelines.
- iv. Boost consumer confidence and fuel quality by decreasing testing costs and improving system reliability.
- v. Encourage the development of quicker, less expensive analytical methods for biodiesel.
- vi. Work with technical experts to showcase major technical efforts with targeted biodiesel stakeholders (i.e., users, regulators, decision makers, etc.) through placement of technical articles in prominent trade publications, earned media, and development and presentation of information at conferences and technical meetings.

- vii. Work with NORA and heating oil technical experts to secure ASTM specifications, UL listings, and B20 support by burner manufacturers.

**Performance Measures:**

- i. Execution of research, including a public report, to support issues identified at ASTM.
- ii. Documentation of new test methods and their cost savings.
- iii. Four major technical efforts will be showcased in trade publications.
- iv. Presentation at six major conferences showcasing technical efforts.
- v. Identification and execution of research, including public reports, for addressing approvals of tanks, pumps, and dispensers.
- vi. Identification and execution of research, including public reports, for addressing approvals of biodiesel blends in U.S. pipelines.
- vii. Maintain D6751, B5 in D975 and D396, and the new specification for B6 to B20 for on/off road use, D7467.
- viii. Ballot ASTM specifications for heating oil in blends higher than B5 and document efforts for UL approvals of Bioheat.

**Goal:**

- 2. Increase biodiesel use in trucking, underground mine and home heating markets.

**Strategy 1:**

- a. Biodiesel  
Increase awareness of biodiesel availability and benefits by truckers, underground miners and in the home heating markets.

**Tactics:**

- i. Promote the use of biodiesel/low blend biodiesel to key organizations and influencers in the trucking industry and home heating oil market.
- ii. Promote the use of biodiesel to key organizations and influencers in new and important markets for biodiesel such as underground mines and greenhouse gas markets.
- iii. Create targeted biodiesel messages through collateral materials, special events and tours for dissemination to key audiences.
- iv. Provide information and technical support in the areas of fuel management, operations and maintenance.
- v. Support QSSBs in their truck industry outreach activities.
- vi. Promote the use of biodiesel in the home heating oil market as Bioheat.
- vii. Educate fuel terminal operators, fuel distributor/dealers, and oil burning equipment companies on the benefits of Bioheat™.
- viii. Utilize the newly designed Bioheat™ Web site to educate consumers and dealers on benefits of Bioheat.
- ix. Continue the strategic marketing relationships with organizations such as the American Trucking Association, Mine Safety and Health Administration, and the Oil Price Information Service.

**Performance Measures:**

- i. Prepare and conduct 12 face-to-face meetings, training seminars or webinars to educate potential Bioheat distributors and dealers.
- ii. Increase the number of licensees of the Bioheat trademark from 175 to 225.
- iii. Secure \$250,000 of in-kind or matching funding for Bioheat efforts by NORA, other regional heating oil organizations and heating oil dealers.
- iv. Increase web traffic on the newly designed Bioheat Web site by 50 percent for dealers and 100 percent for users through promotion and awareness efforts.
- v. Maintain the Bioheat hotline and answer 250 inquiries.
- vi. Increase biodiesel use within the trucking industry by truck accessible pumps through an increase of 15 percent.
- vii. Maintain and update biodiesel truck stop database.
- viii. Maintain and promote BioTrucker.com.
- ix. Assist three truck fleets in implementing biodiesel to help reduce their carbon footprint.
- x. Increase the number of fuel distributors and/or petro.
- xi. Increase awareness and usage within the trucking industry of biodiesel's potential as a lubricity additive by 20 percent.
- xii. Increase number of fuel distributors and/or petroleum marketers selling low blends of biodiesel and achieving greater farmer use of low blends by 20 percent.

**Goal:**

3. Meet Environmental Protection Agency (EPA) requirement to produce 90 percent less particulate matter and NO<sub>x</sub>.

**Strategy 1:**

- a. Biodiesel  
Jointly fund biodiesel emissions research with DOE and OEMs.

**Tactics:**

- i. Provide funds for incorporation of soy biodiesel in U.S. Department of Energy (DOE) and OEM new diesel engine and after-treatment device (catalyst and muffler technology) testing and design.
- ii. Coordinate and create unified messages and materials that demonstrate soy biodiesel's benefit as a diesel fuel additive to increase lubricity.
- iii. Publish research results and communicate findings.

**Performance Measures:**

- i. Soy biodiesel included in DOE and OEM diesel engine and after-treatment testing.
- ii. The biodiesel industry will invest in DOE and OEM engine and after-treatment testing.
- iii. A new diesel engine and after-treatment testing protocol will be designed and tests performed that demonstrate soy biodiesel's role in achieving EPA 2007 guidelines that will be reported.

## **B. Domestic Marketing – Industrial Utilization/Research and Commercialization**

### **Goal:**

1. Increase the use of soybean oil by growing soy biobased products markets.

### **Strategy 1:**

- a. Research and Commercialization  
Reduce obstacles and leverage incentives to increase government and private sector purchasing of soy-based products.

#### **Tactics:**

- i. Identify and communicate information as well as respond to questions concerning performance and content standards, environmental information, including sustainability, and product certification methods to reduce uncertainty of quality and consistency among customers.
- ii. Track and review technical implementation issues related to the Federal BioPreferred Program.
- iii. Track government purchasing activities that provide opportunities to expand the use of soy-based products.
- iv. Participate in government and industry meetings related to the procurement of biobased products.
- v. Identify and initiate demonstration projects or educational outreach activities with entities that want to increase the use of biobased products.
- vi. Track government and private-sector “sustainability” activities that provide opportunities to expand the use of soy-based products and participate in government and industry meetings related to the sustainability issue.
- vii. Work with agencies to identify best management practices that are effective in expanding the use of biobased products.
- viii. Work with agencies to provide information on soy-based products that can be incorporated into their affirmative purchasing programs for USDA-designated biobased items.
- ix. Identify pending contracting, subcontracting, and other sales and marketing opportunities with government agencies and share information with biobased product manufacturers and vendors.
- x. Assist product manufacturers with getting products listed with GSA, DoD E-Mall, AbilityOne (formerly JWOD) and USDA.
- xi. Survey and/or otherwise gain information from product manufacturers and/or federal agency personnel about the level of biobased product purchasing within the federal government.
- xii. Survey public opinion about biobased products to provide information to government and private-sector environmental and sustainability leaders.

#### **Performance Measures:**

- i. Demonstration projects or educational outreach efforts initiated with three or more entities that are implementing biobased purchasing programs.

- ii. Identify and communicate potential government marketing and sales opportunities to biobased product manufacturers.
- iii. More products listed on the USDA List of Designated Items, GSA Multiple Awards Schedule, DoD E-Mall and or/AbilityOne.
- iv. Conduct bioproducts research, such as an attitude/use survey, of federal agencies.
- v. Conduct a bioproducts sales survey of biobased product manufacturers.
- vi. Conduct public opinion research to assess private-sector attitudes on biobased products in environmental “greening” and sustainability programs and provide resulting information to government and private-sector leaders.

**Strategy 2:**

- b. **Research and Commercialization**  
Increase awareness and knowledge within private, federal and public sectors regarding biobased product performance and benefits to stimulate growth of biobased products.

**Tactics:**

- i. Support soy-based product manufacturers in their efforts to increase awareness and adoption of their products.
- ii. Expand and update the USB [www.soybiobased.org](http://www.soybiobased.org) resource center of user testimonials and other information related to biobased product purchasing and use.
- iii. Monitor government and environmental awards programs, such as the White House Closing the Circle Award, for successes in soy-biobased products that can be shared throughout the government and with biobased manufacturers.
- iv. Use an electronic system to distribute information and to evaluate readership and interest in materials that are distributed electronically, as well as support research survey work.
- v. Survey and/or otherwise gain information from government and private-sector audiences about the level of awareness, knowledge, and attitudes toward purchasing of biobased products.
- vi. Continue to provide information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decisions.
- vii. Continue to update and distribute the Biobased Best Practices Guide to the federal audiences in hard copy, as appropriate, and on CD-ROM as well as through the USB [www.soybiobased.org](http://www.soybiobased.org) resource center.
- viii. Respond to questions about performance, sustainability, content, certification and testing issues raised by entities interested in using biobased products.
- ix. Attend and participate in conferences and meetings that provide opportunities to share information about the availability and benefits of products to the government purchasing community and the sustainability community.
- x. Work with, and leverage the efforts of, officials at the U.S. Departments of Agriculture and Energy, Office of the Federal

- Environmental Executive, Environmental Protection Agency, Office of Management and Budget, Department of the Interior and others who are working to increase the use of biobased products.
- xi. Identify informational resources on biobased products and purchasing that will be useful to the purchasing community and that can be posted on the USB-approved electronic resource center/Web site.
  - xii. Provide information for national, state and local bioproduct promotion activities that will increase availability and use of bioproducts within a state.

**Performance Measures:**

- i. Distribution list for the newsletter increased by 300 people who are involved in government procurement.
- ii. Four new informational materials added to the electronic resource center/Web site [www.soybiobased.org](http://www.soybiobased.org).
- iii. Testimonials of six “Biobased Champions” documented and distributed.
- iv. Specific information about the availability and benefits of biobased products provided to at least 200 individuals who are: 1) potential users of biobased products; 2) in the federal procurement system; 3) federal environmental staff; and/or 4) state, local, and private-sector representatives; and 5) sustainability opinion leaders.
- v. Information provided to one or more QSSBs to help in state or local-based product promotion programs.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**A. Domestic Marketing – Industrial Utilization/Biodiesel**

**Goal:**

- 1. Actively define and promote the greenhouse gas and sustainability benefits of soy biodiesel.

**Strategy 1:**

- a. Biodiesel  
Define sustainability as it pertains to soy biodiesel.

**Tactics:**

- i. Document and benchmark the biodiesel impact on sustainability issues with an emphasis on land use.
- ii. Develop and/or document organizations, experts, and studies that accurately define sustainability, and the benefits of biodiesel using the defined criteria.
- iii. Communicate biodiesel’s sustainability benefits to key influencers in industry, media, and state and federal agencies. Ensure accurate assessments of biodiesel’s impact on sustainability are available for use, and that they are widely known and used consistently across the country.

- iv. Participate in industry efforts to promote sustainability initiatives.

**Performance Measures:**

- i. Work with credible third-party organizations to accurately document the impact of the biodiesel demand on sustainability and land use.
- ii. Identify three organizations or experts that will be willing to respond to attacks on biodiesel sustainability profile.
- iii. Document and analyze existing sustainability studies that pertain to biodiesel. Conduct an assessment of their data and identify, if any, needed research.
- iv. Participate in four state or national efforts to define sustainability and ensure biodiesel impacts are fully recognized and appreciated in these efforts.
- v. Communicate biodiesel sustainability benefits to five key influencers in the media and industry.
- vi. Respond to negative biodiesel sustainability stories, usually within 24 hours.
- vii. Participate in two collaborative industry efforts to promote biodiesel and biofuels sustainability benefits.
- viii. Provide biodiesel sustainability information to Alliance and Backer members as well as scientists who have signed the scientists' declaration of support of biodiesel.

**B. Domestic Marketing – Industrial Utilization/Research and Commercialization**

**Goal:**

- 1. Actively define and promote the greenhouse gas and sustainability benefits of soy biobased products.

**Strategy 1:**

- a. Research and Commercialization  
Define sustainability as it pertains to soy biobased products.

**Tactics:**

- i. Ensure that key stakeholders are informed of the results of USB-funded research and other relevant research on the environmental, lifecycle and sustainability attributes of soybean production and soy-based products.
- ii. Work with the biodiesel industry to define and document the biodiesel and biobased product impact on sustainability issues with an emphasis on land use.
- iii. Communicate biobased product's sustainability benefits to key influencers in industry, media, and state and federal agencies.

**Performance Measures:**

- i. Participate in at least two state or national meetings on sustainability.
- ii. Develop two communications vehicles to showcase soy-biobased products' sustainable benefits.
- iii. Monitor sustainability studies that pertain to soy-biobased products.

- iv. Communicate sustainability benefits of biobased products to key influencers in government agencies as well as with industry and private-sector entities. Ensure accurate assessments of soybeans as a biobased feedstock and their impact on sustainability are widely known and used consistently across the country.
- v. Participate in industry efforts to foster credible sustainability initiatives, including discussions on sustainability standards that would impact biobased products.
- vi. Coordinate with industry on responses to studies or other challenges that would undermine the sustainability and environmental reputation of biobased products.

**Financial Allocations:**

Domestic Marketing –

Industrial Utilization/Biodiesel \$2,185,442

Domestic Marketing –

Industrial Utilization/Research and Commercialization \$511,476

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## **Industrial Utilization International Marketing Committee**

### **Market Environment**

In the international marketplace, the food vs. fuel debate continues to be a hot discussion topic. In European markets, soybeans and soybean products continue to be strongly influenced by the rapidly growing bio-energy demand for raw materials. Rising costs for petrochemical raw materials (crude oil and natural gas), along with changing environmental regulations and industry standards, are creating significant opportunities in the global marketplace for soy-based industrial products. EU biodiesel production capacities have rapidly increased from 1.9 MMT in 2002 to an estimated 16.0 MMT in 2008, an increase of 742 percent in the last 6 years, demand continues to increase exponentially. Glycerin, a soy biofuel derivative, is being tested for application in animal feeds as an energy source. Opportunities for vegetable oils in the biofuels industry grow every year in particular in Europe where there is the expectation that an inclusion rate of 10 percent has been mandated for all biofuels by 2020.

Two driving factors for soy-based products include a higher standard of living and government rules/regulations that support environmentally friendly products. Japan and Taiwan are markets that demonstrate these two traits and have USSEC new use programs in place. In Japan, soy ink has been successfully marketed over the years and accounts for over 60 percent of the offset ink market with more than 30 soy ink manufacturers and over 5,400 soy ink users. With the marked success in the ink industry, focus has somewhat shifted to other potential opportunities such as solvents, coatings and soil-bioremediation. Currently, in Taiwan, soybean and soybean products are not yet commercially recognized for their environmental benefits, and work continues to disprove this incorrect information and educate processors and end-users of soy's benefits in industrial uses.

### **Strategic Approach**

Through the strategy for new uses research and commercialization that involves supporting research of new product applications for plastics, coatings (i.e., paints), inks, adhesives, lubricants, solvents and emerging industrial opportunities while working to increase awareness, interest, trial and adoption of soy-based products within industry and the federal government, this strategic approach also has ramifications in our export markets. In markets such as Japan and Taiwan, where the U.S. maintains a disproportionately large market share, our crushing customers are becoming increasingly interested in commercializing soy oil-based commercial products. These products would be produced largely with oil derived from U.S. soybeans. Through expanding awareness to stimulate trial and adoption domestically, international markets in turn benefit from these findings. By communicating the output of soy industrial research and development activities to the global marketplace, the U.S. soy industry can further increase U.S. soy's usage in the industrial sector.

### **Ability to Impact**

USB can impact the Industrial Utilization Target Area by supporting development of new technologies and through research and technology transfer to partners for awareness, interest, trial and adoption. Through transference of this information, USSEC can continue to maintain strong relationships with our large, preferred customers, thus building on a platform to work with them on finding new industrial uses for soybeans.

**LRSP Objective 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**Committee – Target Area:**

- A. IM – Industrial Utilization

**Goal 1:**

1. Global biodiesel industry recognizes soy oil as a prominent feed stock for biodiesel production.

**Strategy 1:**

- a. New Uses Research & Commercialization

**Tactics:**

- i. In Japan, USSEC will continue promoting the commercialization of soy-based products made predominantly from soybean oil.
- ii. In Taiwan, USSEC will initiate new programs to promote soybean oil usage in other industrial applications to create new market opportunities for soy.

**Performance Measures:**

- i. In Japan, 45,000 MT of soybean oil will be consumed for industrial use.
- ii. In Taiwan, 7 plants will produce soy ink.

**LRSP Objective 2:**

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

**Committee – Target Area:**

- A. IM – Industrial Utilization

**Goal 1:**

1. When specific soybean varieties with precise traits benefiting industrial uses are commercialized, introduce these varieties' byproducts to the global alternative industrial use product manufacturers.

**Strategy 1:**

- a. New Uses Research & Commercialization

**Tactics:**

- i. Promotion of the environmental benefits of utilizing soy in industrial applications.

**Performance Measures:**

- i. In Taiwan, marketing campaigns will be established and rolled out to promote soy-based products that are economically viable and environmentally friendly.

**LRSP Objective 3:**

III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area:**

A. IM – Industrial Utilization

**Goal 1:**

1. In markets where industrial products industries must demonstrate the sustainability of their raw material supply chains, US soy oil will be recognized as an economically and environmentally raw material for industrial applications.

**Strategy 1:**

a. New Uses Research & Commercialization

**Tactics:**

- i. Position the U.S. soybean industry as a global sustainability advocate that creates demand for and facilitates delivery of sustainable technologies.

**Performance Measures:**

- i. Educate importers and end users in international markets that U.S. soybeans pose a reduced environmental impact vs. soybeans from other origins.

**Financial Allocations:**

IM – Industrial Utilization: New Uses Research & Commercialization	<u>\$72,012</u>
Total:	\$72,012

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## Industrial Utilization New Uses Committee

### Market Environment

The market environment for industrial utilization of soybean products reflects several factors:

- The prices of competing petrochemicals remain extremely volatile. Petrochemical prices rose sharply in 2007 and 2008 reflecting the high cost of crude oil and natural gas, before falling in late 2008 and the first quarter of 2009.
- The general global recession is negatively impacting sales of all chemical materials including soy.
- Despite the difficult economy, sales of soybean oil for industrial products rose to over a billion pounds and the introduction of soy adhesives for plywood increased soy meal consumption by an estimated 180 million pounds.
- New soy industrial products continue to be well received in the marketplace due to environmental and sustainability advantages. Examples include the new plywood adhesives made with soy flour that eliminates formaldehyde or soy spray foam insulation, which provides significant energy savings. Both show strong growth despite the downturn in construction.
- The debate over global warming and a potential cap and trade system for greenhouse gas emissions could favor soy industrial products. An initial project and meeting with the Chicago Climate Exchange created optimism regarding substitution of soy products for petrochemicals that could be used to generate tradable carbon credits. Significant efforts to qualify soy products remain to be completed and federal actions to create a cap and trade system is still far from certain.
- Interest in soy industrial products is global in scope. A study released by the LMC group has estimated soy oil industrial use for plastics in Asia to surpass levels in the U.S. with strong utilization and growth in South America as well. U.S. producers are known to be exporting soy polyols and other soy derivatives to Europe with success.

Typically, soy industrial uses such as plastics are growing due to their higher value and/or lower cost. No direct federal subsidies are available to stimulate market growth. Some assistance is being given; however, by Federal Procurement Preference programs. The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) reinforces and strengthens USDA's BioPreferred Program for listing biobased products eligible to receive federal purchasing preference (including ways to accelerate the listing of finished products that use intermediate biobased ingredients and/or biobased components). The 2008 Farm Bill also directs USDA to complete the "USDA Certified Biobased" labeling program as expeditiously as possible and makes feedstocks and intermediates eligible to receive the label. This label can play an important role in increasing biobased products awareness. The label is particularly important to the Farm Bill's intent to make the federal procurement program a market development tool for biobased procurement across the nation. USB-funded public opinion research conducted in January 2009 found that 65 percent of Americans are totally unfamiliar with biobased products. The research also identified that the ability of biobased products to enhance U.S. energy security was the leading benefit of biobased products to the public. The benefit of being good for the

environment followed closely as the second most compelling reason to support biobased products.

The 2009 Economic Stimulus Bill creates new opportunities to increase the purchasing of biobased products by federal agencies as well as state and local governments, particularly in the areas of energy efficiency improvements for government buildings, road and other infrastructure repair and construction, and housing weatherization programs. The use of biobased products will help to create “green jobs,” reduce dependence on imported oil, and support sustainable development.

USB’s work with federal employees creates a springboard to educate state and local governments as well as the private sector about biobased products benefits. The federal government buys more than \$500 billion in goods and services annually. The federal recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general. Federal procurement as well as the biobased label that USDA will create can play a major role in increasing public awareness of biobased products and their benefits. Already, the Midwestern Governors Association has approved launch of a biobased procurement initiative based on the federal Biopreferred program. Counties are also seeking opportunities to buy green products through the federal General Services Administration.

### **Strategic Approach**

The Industrial Utilization target area encompasses both new uses research and commercialization. The strategy involves supporting research of new product applications for plastics, coatings (i.e., paints and stains), inks, adhesives, fibers and emerging industrial opportunities while working to increase awareness, interest, trial and adoption of soy-based products within industry and the federal government.

Strategies for New Uses Research and Commercialization involve a multi-faceted approach.

***Diversifying*** – This strategy focuses on multiple areas with significant potential for soy use to reduce the risks associated with dependence on a few large markets such as food and biodiesel and demonstrate successful results across a balanced portfolio for emerging markets. The following industrial markets have been analyzed and selected: plastics; coatings/inks/solvents; adhesives; fibers; and emerging industrial opportunities.

Research projects on industrial uses for soybean meal were increased in FY09 and will continue in FY10 to balance the expanding demand for soybean oil. Examples include: textile fiber from soy meal; thermoplastic products from soy protein for films; molded products and rubber and adhesive products from modified soy flour for replacement of formaldehyde in engineered wood such as oriented strand board, particle board and plywood and commodity chemicals such as surfactants, fumaric acid used in coatings and plastics, isocyanates, and acrolein.

USB New Uses will continue research to utilize glycerin from the production of soy biodiesel for potential fits into the industrial products marketplace.

***Defending and increasing current markets*** – This involves research to increase soy oil reactivity to provide base technologies to defend current markets in inks and coatings, the largest current markets for industrial uses of soybean oil at an estimated quarter

billion pounds annually. Greater reactivity would provide for increased soy content and expanded applications in plastics, coatings and adhesives.

**Leveraging current trends** – Several trends such as new soy oil types through genetic engineering, carbon trading, environmental preferences, increased worker safety regulations and others all favor the substitution of soy for petroleum-based chemicals. Leveraging these trends means anticipating emerging needs and positioning new soy products to fill those needs. For instance, new soy oils with higher levels of oleic acid being developed by private companies and by the QUALISOY program have greater oxidative stability, which is highly desired for food uses and also preferable for some industrial applications such as soy polyols for polyurethane applications in plastics and crankcase oil or hydraulic fluid formulations in lubricants. Another trend under study is the potential for claiming “carbon credits” for soy industrial products, which would add value and offset material costs, thereby making soy products more affordable and profitable.

Fundamental research is needed to uncover new potential properties of soy and to develop sustainable new processing technologies allowed by trends such as biotechnology and bioprocessing. Leveraging these new technologies should provide cost-advantaged new industrial products from the whole soybean and all of its components.

**Reducing production costs** – These efforts focus on developing improved processes to produce soy methyl esters, soy protein concentrates and other soy intermediates for a variety of uses. New enzymatic catalysts show promise to reduce energy costs associated with production of soy products such as polyols and polyester resins in plastics and to allow economical production of commodity chemicals such as fumaric acid, isocyanates and surfactants.

**Expanding use of existing soy technologies** – Expanding the use of existing soy technologies includes developing new product applications. Existing uses such as automotive uses for soy polyols with Ford have led to expanded uses of foams in furniture and bedding and can lead to still more uses such as polyurethane gels for shoe soles.

**Leveraging resources** – To effectively leverage USB resources, this approach will seek matching funds from federal programs and/or commercial partner contributions. A majority of projects have commercial partners identified prior to funding. In some cases, USB industrial partner spending exceeds USB contributions by as much as 10:1.

**Expanding awareness to stimulate trial and adoption** – This is a three-pronged approach: 1) transfer new technology and develop partnerships with corporate parties; 2) provide technical and marketing support for commercial start-ups; and 3) monitor regulatory changes and their impact. This also involves communicating the output of soy industrial research and development activities to QSSBs and USB’s International Marketing, Domestic Marketing, and Production programs.

The Soy-based Products Outreach tactical approach focuses on increasing acceptance and usage of biobased industrial products within the public and federal markets. The federal market is large and can be a market leader for other levels of government and the private sector. The strategic focus for biobased products is on leveraging USB’s

efforts with manufacturers and federal agencies, and promoting the various incentives and drivers in place within the federal government to move biobased products into the market.

USB will continue to promote the use of biobased products through the federal procurement system by continuing trial and adoption programs with identified federal agencies. These efforts are even more important now since the U.S. Department of Agriculture (USDA) published final guidelines that establish provisions for the Federal Biobased Products Preferred Procurement Program, which requires all federal agencies to preferentially purchase biobased products designated by USDA as eligible under this program. The new guidelines establish the process by which USDA will designate items for preferred procurement by federal agencies. Federal agencies must assure within one year after the publication of this final rule that their procurement practices require the preference of biobased products consistent with this rule. So far, six items (categories of products such as penetrating lubricants, roof coatings, hydraulic fluids, etc.) have been designated by USDA and additional items will be designated in the coming year.

### **Ability to Impact**

USB has already impacted the Industrial Utilization target area as witnessed by the double digit rise of soy oil industrial use over the past three years and the launch of multiple successful new products. This has been accomplished by supporting development of new technologies and through technology transfer to partners creating awareness, interest, trial and adoption. USB-sponsored Technical Advisory Panels (TAPs) and participation at selected trade/tech shows have been particularly successful in fostering the advancement of soy-based industrial products and applications.

The current volatility of petrochemical prices and the overall “green movement” have positioned soy-based industrial products in a very favorable position with potential chemical and fabricated products manufacturers. There is a strong desire in the market for change to domestically-produced, environmentally favorable and more price-stable raw materials and products.

Soybeans can be an effective competitor to petrochemical products both functionally and economically. In FY09, there were more than two dozen new product or application introductions of soy-based industrial products as a result of checkoff funding. It is expected that this number will be equaled or exceeded in FY10 as the significant growth of product introductions continues from expanded industrial company involvement in the target market areas of plastics, lubricants, coatings, inks, adhesives and solvents. Additionally, many new soy products have been introduced as indirect results of checkoff-sponsored research.

Checkoff funding has been effective in the development of new technologies through research and in transferring technologies to partners to gain trial and adoption. The checkoff can support research to reduce processing costs for soy products to further improve competitiveness. The checkoff cannot influence regulatory issues, but has responded to regulations that favor soy product use by developing products that have economic advantages in meeting regulations and assisting in the development of procurement standards and guidelines that encourage active adoption.

USB will continue to promote the use of biobased products through the federal procurement system by continuing trial and adoption programs with identified federal

agencies. These efforts are even more important now since the U.S. Department of Agriculture (USDA) has both published the final guidelines for implementing the Federal Biobased Products Preferred Procurement (“BioPreferred”) Program, which was created under the 2002 Farm Bill, and issued multiple rules that include hundreds of biobased products that government agencies are expected to purchase under the program. The guidelines establish the process by which USDA will designate items for preferred procurement by federal agencies and the other rules designate those items. Federal biobased procurement was also aided in December 2006 when the federal government proposed adding biobased product purchasing to its Federal Acquisition Regulation that contains the uniform policies and procedures for acquisition of government agencies.

The federal biobased program has also triggered states to approve legislation that is modeled after the federal biobased procurement programs. Arkansas and Indiana legislatures have passed laws that will have their state government agencies buy biobased products that are designated under the federal program. In late 2007, the Midwestern Governors Association, which includes 11 states, took action to promote biobased products by agreeing to create a common approach to listing biobased products consistent with the federal BioPreferred program. Similarly, the National Association of Counties “Green Government” initiative is receptive to USB outreach on biobased products.

USB will also initiate new outreach and education activities aimed at the private sector’s interest in sustainable practices. Because of USB’s leadership on biobased product outreach to government audiences, private-sector entities have shown interest in USB serving as a resource to their greening and sustainability programs. Widespread media coverage on land use studies and food-vs.-fuel debates have already prompted existing biobased customers as well as potential users of biobased products to ask questions about the sustainability of soy as a feedstock for biobased products. These questions must be addressed or they will undercut the progress of the biobased economy.

**LRSP Objectives 1 & 3:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area**

- A. New Uses – Industrial Utilization

**Goal:**

- 1. Develop soy-based plastics for the petrochemical market.

**Strategy:**

- a. New Uses Research and Commercialization  
Improve soy polyol and soy polyester resin reactivity, which will increase soy content in formulations, expand applications and enhance manufacturing processes and quality control.

**Tactics:**

- i. Fund, monitor and advise industry on research that addresses improved performance of soy polyols for polyurethanes and polyester resins.

- ii. Provide independent technical information to basic suppliers, formulators, molders and fabricators on performance of soy polyols and soy polyester resins and the corresponding processes/product research.
- iii. Monitor and advise academic and industrial partners on the development of polyols with improved performance properties.
- iv. Fund research to provide higher concentrations of soy in automotive applications.

**Performance Measures:**

- i. At least five new soy-based polyester resin composites or soy polyol-containing polyurethane formulations in tests with parts manufacturers.
- ii. An increased range of soy polyols with improved reactivity, high molecular weight and good processing viscosity for polyurethanes.

**Strategy:**

- b. New Uses Research and Commercialization  
Industry and government recognition of economic, functional and marketing benefits of soy polyester resins and polyurethanes containing soy polyols.

**Tactics:**

- i. Provide technical information via TAP's, trade/tech shows and on-site visits to active researchers at companies comprising manufacturers, formulators and the rest of the supply chain in plastic markets.
- ii. Conduct life cycle studies for soy plastic products and applications.
- iii. Pursue non-automotive thermoset soy polyester composite applications utilizing simple and complex molding processes.
- iv. Accelerate interaction with the resin producers and transportation industry (automotive, marine, and rail) to achieve evaluation of soy-based thermoset products.
- v. Transfer technology for soy meal-based thermoplastics.
- vi. Explore outside partnerships and solicit funding support for leveraging USB efforts.

**Performance Measures:**

- i. Market introduction of two new soy-based polyurethane applications.
- ii. Introduction of two new soy-based polyester resin applications.
- iii. One additional automotive company and their tier suppliers evaluating soy thermoset plastic applications.
- iv. A non-automotive company (i.e., furniture) evaluating soy-based polyols for seating applications.
- v. One additional life cycle study completed, published and distributed.

**Strategy:**

- c. New Uses Research and Commercialization  
Discovery, research and development of new soy oil and meal industrial opportunities for plastics.

**Tactics:**

- i. Continue research and development of soy oil as a monomer platform leading to multiple new products and applications in plastics and other target markets.
- ii. Continue research and development of soy meal, hulls and flour as a filler/extender for modified rubber products and thermoset plastic composites.
- iii. Continue development of isocyanate functionalized soy protein.
- iv. Continue research on use of glycerin to make acrolein (used in making acrylic acid and other high volume chemicals).
- v. Complete the initial research on the production of water soluble polymers derived from soy meal/protein and begin the effort to scale up production and trial by industrial partners.
- vi. Investigate additional types of thermoplastic (non-durable plastics that are biodegradable and/or recyclable) applications for soy meal, flour, concentrates and hulls, including but not limited to films, thickeners, disposable goods, fillers for composites and rubbers, etc.
- vii. Encourage researchers to pursue novel chemistries working with soy protein.
- viii. Transfer information to DOE and USDA via the Technical Advisory Committee on Biomass Research and Development regarding use of proteins as a base chemistry for plastic production.
- ix. Explore the opportunity for modified soy oil to replace phthalates as plasticizers in polyvinyl chloride and other plastics.
- x. Investigate the use of soy carbohydrates extracted from soybean meal as potential reactive materials (sugar polyols) for use in thermoplastics and/or thermoset plastics.

**Performance Measures:**

- i. At least two new candidate products/formulations and/or processes eligible for further development.
- ii. At least one additional plastic manufacturer identified and committed to jointly pursue with USB the use of soy protein in targeted applications for thermoplastics or modified rubber.
- iii. One additional defined project addressing industrial use of soy carbohydrates.

**Goal:**

2. Develop soy-based coatings, inks and solvents for the petrochemical market.

**Strategy:**

- a. New Uses Research and Commercialization  
Industry recognition of economic, functional and marketing benefits of soy-based coatings, printing inks and solvents technologies.

**Tactics:**

- i. Provide technical information to target companies/individuals in key markets via TAP's, trade/tech shows and one-on-one contacts.
- ii. Gain industry approval for soy-based products through recognized ASTM standards.

- iii. Conduct life cycle studies for soy coating systems compared to petrochemical-based systems and communicate information to users and government agencies.
- iv. Communicate technical needs along with performance, environmental and economic benefits to downstream users, thereby creating market pull for company adoption.
- v. Monitor new soy solvent product and process development from industry.
- vi. Continue support for development and introduction of organic co-solvent blends with products like d'Limonene to enhance methyl soyate properties.
- vii. Provide information to formulators, distributors, equipment manufacturers, government and end-users on soy solvent properties that enhance performance in market applications.
- viii. Monitor prices of soy-based products versus petroleum and natural gas-derived products to ascertain economic competitiveness opportunities.
- ix. Assist in pesticide registration of a mosquito larvicide product.

**Performance Measures:**

- i. One major paint company producing a new soy-based waterborne resin for use in low VOC, environmentally sensitive coatings marketplace.
- ii. At least three new soy solvent products/applications identified for commercialization pursuit.
- iii. Two new partners identified for cooperative solvent projects.
- iv. Soy-based mosquito larvicide registration process initiated.

**Strategy:**

- b. New Uses Research and Commercialization  
Discovery, research, and development of new soy industrial opportunities for coatings, printing inks and solvents.

**Tactics:**

- i. Investigate soy-containing powder coating resin for additional markets and conduct plant trials.
- ii. Investigate the potential of soy oil polyol urethane formulations for coatings.
- iii. Explore outside partnerships and solicit funding support for leveraging USB efforts.
- iv. Seek new applications using soy polyols in industrial coatings.
- v. Seek new applications using soy-based alkyd resins in water-based paint emulsions (soy oil and water mixture).
- vi. Support the development of water-based soy polyurethane stain to replace solvent urethane systems.
- vii. Work with a major paint company to develop hybrid, water-based paints containing soy to replace conventional solvent alkyd systems.

**Performance Measures:**

- i. New soy-containing powder coating resin commercialized.
- ii. Technical feasibility established for at least one soy polyol or soy-based resin for coating applications.
- iii. One or more new water-based paints commercialized.

- iv. At least one water-based urethane stain in commercial scale-up.

**Goal:**

- 3. Develop soy-based adhesives for the petrochemical market.

**Strategy:**

- a. New Uses Research and Commercialization

Increase the use of soy meal and flour in wood adhesives by industry recognition of economic, functional and marketing benefits of soy-based adhesive technologies.

**Tactics:**

- i. Provide technical information to target companies/individuals in key markets via TAP's, trade/tech shows and one-on-one contacts.
- ii. Work with industry partners in the development of candidate products from soy protein that can economically compete as adhesives in interior/exterior oriented strand board, particleboard, medium density fiberboard and plywood products.
- iii. Work with companies to increase the use of formaldehyde-free exterior plywood adhesives.
- iv. Work with academic and industrial partners to develop solvent-free urethane glue systems.
- v. Gain industry approval for soy-based products through recognized ASTM standards.
- vi. Conduct life cycle studies for soy adhesive systems compared to petrochemical-based systems and communicate information to users and government agencies.
- vii. Communicate technical needs along with performance, environmental and economic benefits to downstream users, thereby creating market pull for company adoption.
- viii. Develop information on market opportunities for soy meal/protein-based adhesives.

**Performance Measures**

- i. Use of soy meal/flour in interior plywood adhesives is maintained at the current 180 million pounds despite current economic challenges to wood product producers.
- ii. At least one candidate soy adhesive product in trials for exterior wood panel use.
- iii. A major resin company assumes a marketing role for soy-based adhesives.
- iv. At least one company utilizing the soy-based formaldehyde-free glue system in particle board or oriented strand board production.

**Strategy:**

- b. New Uses Research and Commercialization

Discovery, research, and development of new soy industrial opportunities for adhesives.

**Tactics:**

- i. Investigate the potential of soy oil polyol urethane formulations for adhesives and sealants.
- ii. Develop processes for use of glycerin to make polyamines and/or UV curable oligomers.
- iii. Explore outside partnerships and solicit funding support for leveraging USB efforts.
- iv. Explore other technologies for formaldehyde-free adhesives in wood composites.

**Performance Measures:**

- i. One additional wood composite adhesive product in market development trials.
- ii. One new technology to develop formaldehyde-free wood glue technology identified.

**Goal:**

4. Develop soy-based technologies for fibers in the petrochemical market.

**Strategy:**

- a. New Uses Research and Commercialization  
Discovery, research and development of basic resin production and production technology for soy protein fibers.

**Tactics:**

- i. Evaluate existing foreign-produced soy fibers and gain an understanding of their composition and processing.
- ii. Develop new soy protein resins for producing fibers and related products.
- iii. Develop economical production processes for staple fiber production.
- iv. Test new soy fibers for physical characteristics and develop finishing agents and process aides to modify and improve properties as necessary.
- v. Determine best market fits for initial test fibers and perform economic analysis of value to the soybean industry.

**Performance Measures:**

- i. At least one new soy fiber developed and in limited production trials.
- ii. At least two additional resins under development.

**Strategy:**

- b. New Uses Research and Commercialization  
Industry recognition of economic, functional and marketing benefits of soy-based fibers.

**Tactics:**

- i. As available, provide test fibers from research to industrial producers for evaluation.
- ii. As available, provide test fibers from research to industrial users for evaluation.
- iii. Conduct one-on-one meetings with potential producers and users of soy fibers.

- iv. Attend and present at appropriate technical conferences related to fibers.
- v. Conduct a technical advisory panel on fibers alone or in conjunction with other soy topics.

**Performance Measures:**

- i. A clear route to commercialization of at least one soy fiber is mapped from academic research through production and commercial use with candidate partners at each stage.
- ii. At least one major fiber producer participating in USB-sponsored research.

**Goal:**

- 5. Develop soy-based technologies for emerging opportunities in the petrochemical market.

**Strategy:**

- a. New Uses Research and Commercialization  
Discovery, research and development of new soy oil and meal technologies.

**Tactics:**

- i. Investigate new technologies such as olefin metathesis for oil modification to value-added products
- ii. Explore new industrial product and market applications for soy protein.
- iii. Determine the opportunity for the production of basic commodity chemicals, such as fumaric, succinic and acrylic acids, from soybean meal and other soy products such as glycerin.
- iv. Continue to research the use of soy glycerin and meal to make a range of commodity surfactants for the detergent and industrial processing markets.
- v. Explore the potential for soybean oil/glycerin powered biofuel cells for battery replacement.
- vi. Explore outside partnerships with regional farm groups, cooperatives and bioprocessing companies.
- vii. Solicit funding support for leveraging USB efforts.
- viii. Monitor and support co-product glycerin research for multiple uses.
- ix. Monitor and explore fermentation and other process work on soy protein that could enhance the opportunity for soy protein industrial uses.
- x. Explore processes that could add industrial use value to lower value soy components such as sugars, cellulose/hemicellulose and lignins.

**Performance Measures:**

- i. At least three new products/applications identified for commercialization pursuit.
- ii. Two new partners identified for cooperative projects.

**Strategy:**

- b. New Uses Research and Commercialization  
Leverage environmental, human safety and regulatory trends to benefit soy industrial products usage

**Tactics:**

- i. Continue established effort to qualify soy industrial products for the generation of voluntary carbon credits and/or for regulated credits under a cap and trade system if enacted.

**Performance Measures:**

- i. An identified protocol and sample case is presented to the Chicago Climate Exchange (CCX) for approval.
- ii. Other voluntary trading organizations such as the California Climate Action registry are apprised of the protocol submitted to CCX for review and potential separate acceptance and trading in the voluntary market.

**Strategy:**

- c. New Uses Research and Commercialization  
Leverage new types of soybean oil being developed through genetic engineering and/or oil modification for industrial uses.

**Tactics:**

- i. Evaluate, as base stocks for lubricant applications, higher-oleic soy oils being developed through QUALISOY and other breeding activities.
- ii. Monitor and advise industry partners on results of the testing program.
- iii. Evaluate, as base stocks for lubricant applications, oils with improved high temperature oxidation stability produced from soybean oil using chemical modification (hydrogenation, catalysis, reformulations, etc.).
- iv. Monitor and advise industry partners on appropriate additive formulations to improve high temperature stability and assure low temperature flow.
- v. Build awareness and support technology transfer of soy-based transformer fluids and advances with new soy lubricants.
- vi. Transfer conventional soybean oil formulation technology to existing lubricant formulators and encourage partnerships with soybean oil suppliers to expand the range of lubricant products.

**Performance Measures:**

- i. Research quantities of genetically and chemically improved oils developed for evaluation by formulator partners.
- ii. Additional industry partners conducting soy-based product trials for hydraulic fluids and other lubricant applications.
- iii. Soy oil use in transformer fluids shows continued significant growth.
- iv. Existing formulation technology for lubricant products transferred to lubricant formulators and new lubricant products such as greases, transformer oils, metal working fluids, total loss lubricants and others being launched commercially at a regional or national level.

**Goal:**

- 6. Build awareness and demand for soy products.

**Strategy:**

- a. New Uses Research and Commercialization  
Provide coordinated communications messages and materials to help industry awareness of technology and products.

**Tactics:**

- i. Update and create new collateral materials.
- ii. Provide information on soy technology and products and/or manufacturer contact information per industry request or as new technology/products are made available.
- iii. Update, print and distribute soy products catalog to industry leaders.
- iv. Maintain bi-monthly distribution of New Uses industrial e-newsletter, highlighting new technologies, products and end markets in which they can be used. Enhance newsletter with additional photos, content.
- v. Utilize New Uses Web site as a key source for updated information on technology and producers and/or manufacturer contacts. Update site with testimonials from researchers as well as additional content on target areas.
- vi. Maintain and increase one-on-one relationships with media representatives to increase their awareness of soy technologies and products.
- vii. Develop and distribute media articles, press releases and advisories to targeted industry media.
- viii. Create media database that will serve as a resource to help facilitate contact with key media outlets.
- ix. Supply meeting support and collateral materials for trade shows and industry meetings.

**Performance Measures:**

- i. Benchmark set for industry awareness of soy-based products and technologies.
- ii. Readership of Biobased Solutions increased by 5 percent.
- iii. Web traffic to New Uses Web site increased by 10 percent.
- iv. Checkoff-funded technologies and/or products featured in 20 or more trade and online publications.

**Strategy:**

- b. New Uses Research and Commercialization  
Reduce obstacles and leverage incentives to increase government and private sector purchasing of soy-based products.

**Tactics:**

- i. Identify and communicate information as well as respond to questions concerning performance and content standards, environmental information, including sustainability, and product certification methods to reduce uncertainty of quality and consistency among customers.
- ii. Track and review technical implementation issues related to the Federal BioPreferred Program.
- iii. Track government purchasing activities that provide opportunities to expand the use of soy-based products.
- iv. Participate in government and industry meetings related to the procurement of biobased products.
- v. Identify and initiate demonstration projects or educational outreach activities with entities that want to increase the use of biobased products.

- vi. Track government and private-sector “sustainability” activities that provide opportunities to expand the use of soy-based products and participate in government and industry meetings related to the sustainability issue.
- vii. Work with agencies to identify best management practices that are effective in expanding the use of biobased products.
- viii. Work with agencies to provide information on soy-based products that can be incorporated into their affirmative purchasing programs for USDA-designated biobased items.
- ix. Identify pending contracting, subcontracting, and other sales and marketing opportunities with government agencies and share information with biobased product manufacturers and vendors.
- x. Assist product manufacturers getting products listed with GSA, DoD E-Mall, AbilityOne (formerly JWOD) and USDA.
- xi. Survey and/or otherwise gain information from product manufacturers and/or federal agency personnel about the level of biobased product purchasing within the federal government.
- xii. Survey public opinion about biobased products to provide information to government and private-sector environmental and sustainability leaders.

**Performance Measures:**

- i. Demonstration projects or educational outreach efforts initiated with three or more entities that are implementing biobased purchasing programs.
- ii. Identify and communicate potential government marketing and sales opportunities to biobased product manufacturers.
- iii. More products listed on the USDA List of Designated Items, GSA Multiple Awards Schedule, DoD E-Mall and or/AbilityOne.
- iv. Conduct bioproducts market research, such as an attitude/use survey, of federal agencies.
- v. Conduct a bioproducts sales survey of biobased product manufacturers.
- vi. Conduct public opinion research to assess private-sector attitudes on biobased products in environmental “greening” and sustainability programs and provide resulting information to government and private-sector leaders.

**Strategy:**

- c. New Uses Research and Commercialization  
Increase awareness and knowledge within private, federal and public sectors regarding biobased product performance and benefits to stimulate growth of biobased products.

**Tactics:**

- i. Support soy-based product manufacturers in their efforts to increase awareness and adoption of their products.
- ii. Expand and update the USB [www.soybiobased.org](http://www.soybiobased.org) resource center of user testimonials and other information related to biobased product purchasing and use.
- iii. Monitor government and environmental awards programs, such as the White House Closing the Circle Award, for successes in soy-biobased

products that can be shared throughout the government and with biobased manufacturers.

- iv. Use an electronic system to distribute information and to evaluate readership and interest in materials that are distributed electronically, as well as support research survey work.
- v. Survey and/or otherwise gain information from government and private-sector audiences about the level of awareness, knowledge, and attitudes toward purchasing of biobased products.
- vi. Continue to provide information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decisions.
- vii. Continue to update and distribute the Biobased Best Practices Guide to the federal audiences in hard copy, as appropriate, and on CD-ROM, as well as through the USB [www.soybiobased.org](http://www.soybiobased.org) resource center.
- viii. Respond to questions about performance, sustainability, content, certification and testing issues raised by entities interested in using biobased products.
- ix. Attend and participate in conferences and meetings that provide opportunities to share information about the availability and benefits of products to the government purchasing community and the sustainability community.
- x. Work with, and leverage the efforts of, officials at the U.S. Departments of Agriculture and Energy, Office of the Federal Environmental Executive, Environmental Protection Agency, Office of Management and Budget, Department of the Interior and others who are working to increase the use of biobased products.
- xi. Identify informational resources on biobased products and purchasing that will be useful to the purchasing community and that can be posted on the USB-approved electronic resource center/Web site.
- xii. Provide information for national, state and local bioproduct promotion activities that will increase availability and use of bioproducts within a state.

**Performance Measures:**

- i. Distribution list for the newsletter increased by 300 people who are involved in government procurement.
- ii. Four new informational materials added to the electronic resource center/Web site [www.soybiobased.org](http://www.soybiobased.org).
- iii. Testimonials of six “Biobased Champions” documented and distributed.
- iv. Specific information about the availability and benefits of biobased products provided to at least 200 individuals who are: 1) potential users of biobased products; 2) in the federal procurement system; 3) federal environmental staff; and/or 4) state, local, and private-sector representatives; and 5) sustainability opinion leaders.
- v. Information provided to one or more QSSBs to help in state- or local-based product promotion programs.

**Goal:**

- 7. Actively define and promote the greenhouse gas and sustainability benefits of soy-biobased products.

**Strategy:**

- a. New Uses Research and Commercialization  
Define sustainability as it pertains to soy-biobased products.

**Tactics:**

- i. Ensure that key stakeholders are informed of the results of USB-funded research and other relevant research on the environmental, lifecycle and sustainability attributes of soybean production and soy-based products.
- ii. Work with the biodiesel industry to define and document the biodiesel and biobased product impact on sustainability issues with an emphasis on land use.
- iii. Communicate biobased product's sustainability benefits to key influencers in industry, media, and state and federal agencies.

**Performance Measures:**

- i. Participate in at least two state or national meetings on sustainability.
- ii. Develop two communications vehicles to showcase soy-biobased products' sustainable benefits.
- iii. Monitor sustainability studies that pertain to soy-biobased products.
- iv. Communicate sustainability benefits of biobased products to key influencers in government agencies as well as with industry and private-sector entities. Ensure accurate assessments of soybeans as a biobased feedstock and their impact on sustainability are widely known and used consistently across the country.
- v. Participate in industry efforts to foster credible sustainability initiatives, including discussions on sustainability standards that would impact biobased products.
- vi. Coordinate with industry on responses to studies or other challenges that would undermine the sustainability and environmental reputation of biobased products.

**Financial Allocations:**

New Uses – Industrial Utilization: \$5,415,033

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## **Supply Domestic Marketing Committee**

### **Market Environment**

U.S. soybeans compete on two different fronts. Domestically, U.S. soybeans are crushed for their meal and oil, each of which competes with alternative ingredients. Soybean meal competes with feed ingredients such as distillers dried grains with solubles (DDGS), meat and bone meal, and other vegetable protein sources. Soybean oil competes with palm, canola, sunflower, and other vegetable oils. In export markets, U.S. soybeans not only compete with alternative products, but also against soybeans from other countries, primarily Argentina and Brazil.

As we move toward FY10, the market environment for U.S soybeans is becoming increasingly challenging. Coming off a year of record bean, oil and meal prices, the soybean industry looked very different in 2009, with stocks building and prices softening. The only thing certain for FY10 is that nothing at all is certain.

Global economic pressures are curbing meat demand around the world, which directly impacts soy producers' number one customer, the livestock and poultry industries. Consumers are shifting to cheaper cuts of meat, and import barriers to protect markets are complicating the situation. All signs point to decreased demand for soybean meal while the global recession looms.

On the flip side, reductions in livestock and poultry numbers offer the industry an opportunity to strengthen prices and regain profitability, which is a positive factor in the long run.

Of growing importance will be continued pressure from environmentalists, which will push the animal ag industry toward sustainability initiatives. Opportunities exist for feed ingredients that do more with less and reduce waste emissions. Even more significant are pressures from animal rights activists that are already interfering with the ability of livestock and poultry producers to operate. Organizations like the Humane Society of the United States have made it their goal to end animal agriculture. Their tactical approach includes driving animal ag out of business by implementing regulations that make it unprofitable to operate.

The vegetable oil industry is experiencing an oil market where abundant vegetable oil supplies are pressuring soy oil prices. On the demand side, reduction in restaurant traffic (a key market segment) is down, directly impacting soybean oil use. On the supply side, increased competition from alternative oils is cutting into soy oil markets.

Palm and rapeseed imports have tripled since 2005. We're also seeing increased availability of corn and cottonseed oils. These oils are byproducts of ethanol and cotton fiber production, so they will price as necessary to clear the market. With performance properties similar to low-linolenic soybean oil, they represent increased competition to a premium market.

As a result of decreased demand for food use and increased overall vegetable oil supply, experts anticipate an increase in soy oil stocks, which were drawn down in 07/08.

In recent years, biodiesel demand has filled in the demand void in the market that had been created by trans fat labeling. However, as 2010 approaches, the share of oil volume that biodiesel will capture remains uncertain. Biodiesel production could actually see a short-term decline due to forces beyond the control of soybean producers.

First, the EU is working to keep biodiesel imports out by lodging an anti-dumping case against the U.S. This was a 400 million gallon market in 2008. Also, the impact of implementation regulations for the RFS II are as yet unknown, and could either positively or negatively impact the biodiesel market.

It is important to note that a decline in biodiesel production doesn't necessarily mean a decline in soy oil use for biodiesel production. The soybean checkoff needs to continue to educate biodiesel producers on the benefits of utilizing soy oil as the premier feedstock for biodiesel. Now more than ever, a strong biodiesel market is important to fill demand void for food use.

As markets shrink, maintaining the competitiveness of U.S. soybean producers in the global market will require ongoing quality and compositional improvements. Oil compositional improvements are needed to maintain competitiveness with other food use oil sources. These same oil improvements also provide fatty acid profiles necessary to increase the use of soybean oil for industrial applications.

Meal compositional improvements are necessary to maintain soybean meal's preferred position as the protein source of choice in poultry and swine production animal rations. Composition improvements that do not sacrifice yield are necessary to increase intrinsic value of the crop, resulting in maximized profit for soybean farmers. Processing quality improvements are also important to meeting future market needs.

Although compositional improvements represent the future of the U.S. soybean industry, convincing farmers to plant specialty soybeans represents a real challenge. Early adopters must deal with a learning curve in optimizing production of these new beans. High prices have reduced the incentive for farmers to grow specialty beans because of the risk of lower yields for new traits, challenges in identity preservation, and inconvenience of limited delivery dates, which often overshadow the premium incentives for specialty beans.

But the market must move toward specialty beans with improved traits – especially improved oil traits – in order to regain market share lost due to trans fat labeling. New soybean varieties that produce oils that do not require hydrogenation are necessary. With the help of USB and QUALISOY, low-linolenic acid soybeans have been introduced to the market. But other soy oil alternatives are also needed as quickly as possible. The next improved oil on the market will be high-oleic.

When making choices, animal nutritionists look closely at ingredient composition and least-cost options to formulate diets. U.S. soybean producers will have a greater chance of success in maintaining market share as a protein source for animal feeds if they can offer enhanced compositional traits to their customers. For example, increasing the

energy value of soybean meal would provide tangible nutritional and economic benefits to feed formulators. In addition, removing anti-nutritionals from the meal would enable soybean meal use to increase in aquaculture feeds.

The majority of U.S.-produced soybeans are sold on the commodity market, which compensates growers based on market price/bushel x volume. U.S. soybean producers, accustomed to receiving revenue based on yield, are generally unaware of the negative market response due to lower/declining protein levels. Efforts through the Select Yield and Quality (SYQ) Initiative to increase declining U.S. oil and protein levels have been important in helping U.S. producers remain competitive in the global market. Now folded into the Domestic Marketing Committee, the SYQ initiative has been successful in increasing awareness of oil and protein goals of 19 percent oil and 35 percent protein in geographic regions that are agronomically challenged to meet these levels. However, continued education efforts to encourage seed technology companies to select for protein and oil are critical to the long-term profitability of U.S. producers. Equally important, the momentum gained so far in working with grain elevators to offer incentives for specific protein and oil levels could easily dissolve without continued attention.

This leads to a discussion of the ability to provide these improvements through biotechnology, where other methods fall short. However, biotechnology presents market acceptance issues among some consumers and several export markets. Opposition to biotechnology must be addressed in order for U.S. soybean producers to achieve desired yield and compositional improvements.

To accelerate adoption of new varieties that target health and functionality improvements, USB has engaged the industry by founding the QUALISOY Board. QUALISOY's primary focus is to facilitate industry cooperation to identify and commercialize soybean improvements that address major market issues.

A critical component of developing compositional improvements is the ability to measure those improvements accurately and reliably. The market does not have a consistent process to measure components such as fatty acids, amino acids, soluble sugars and phytate-phosphorus. While various organizations have their own analytical methods and calibrations, the same soybean sample analyzed by two different labs will often produce different results. A process to implement uniform measurement and results reporting throughout the value chain will ensure that increased intrinsic soybean value is identified and can be properly rewarded by domestic and international buyers.

Overshadowing the entire agricultural industry, including all aspects of soybean production and all markets for soybean products, is the emerging issue of "sustainability". Sustainability is quickly becoming a food industry mainstay, driven by consumer expectations, political ambitions, and industry desire to not be left behind. Mega food corporations are driving down sustainability practices as directed by top-level leadership. Suppliers are being held accountable for sustainable practices, and agriculture is frequently targeted as the biggest culprit in environmental impacts. Furthermore, the animal agriculture industry will be forced to implement practices defined as sustainable by forces outside the industry, putting additional strain on an already struggling industry.

The U.S. soybean industry will be forced to document and show ongoing improvement in sustainable practices if it does not set the facts straight, develop its own standards and

document continuous improvements using methodology that makes sense for U.S. producers. Although USB has created a Sustainability Initiative to address these issues, the scope of “sustainability” is huge, and impacts every USB committee and target area.

As the above discussion indicates, the Domestic Marketing Committee has determined that there are four main emerging issues impacting the Supply Target Area for FY10:

- Economic Downturn
- Sustainability Impact on Soybean Customers
- Biotechnology and Consumer Health
- Consumer Attitudes Regarding Meat Production

Programs for the 2010 fiscal year will be focused on achieving USB’s Long Range Strategic Plan Objectives, while also addressing key emerging issues.

### **Strategic Approach**

The overall strategic approach for the Domestic Marketing Supply target area focuses on providing U.S. soybean markets with the quantity and quality soybean products they demand through processing and compositional improvements to enhance component quality for oil and protein. This approach will ultimately enrich the value of U.S.-produced soybeans by moving away from treating all soybeans as commodities and providing customers with soybeans with improved traits.

In order to understand customer needs, it is important to collect market data on soybean consumption and usage for oil, meal and whole beans by market segment. Further, collaboration with industry is a must on efforts to improve the availability and selection of varieties that optimize protein and oil levels in a measurable way. In addition, USB needs to work with the processing industry to find ways to ensure ongoing improvements on soybean product quality post-processing.

Of course, in order to extract value from soybean quality improvements, we must have the ability to measure them. Developing proper tools for measurement of quality traits through the Analytical Measurements and Market Standards (AMMS) effort will provide the standardized reference chemistry needed to help change the market view of soybeans from a whole bean commodity to a component-driven market that addresses buyers’ needs. To complement the research aspects of the Supply target area, it is important that any process to change market behavior include: 1) an industry commitment to provide incentives for higher quality soybeans; and 2) an assurance that varietal data on composition is available to aid farmers in choosing the best varieties. Engaging the industry is critical to driving market acceptance.

In order to ensure viable markets for improved varieties, USB must continue to drive acceptance of biotechnology. Efforts to document the measurable benefits of biotechnology and utilize that information throughout marketing efforts for all target areas are critical to the long-term success of U.S. soybean producers. Biotechnology also offers soybean producers the opportunity to further improve their ongoing sustainability efforts by allowing farmers to produce more food, feed, fuel and fiber with fewer resources.

Although soybean producers are already excellent stewards of the land and environment, those not directly involved in soybean production and farming do not

understand this. Failing to inform our markets on soybean sustainability benefits will invite outside market forces, including food companies and NGOs, to develop and implement their own concepts of how farmers should practice sustainable agriculture and force their own notions upon farmers. Soybean producers need to set the agenda for their own sustainable practices or someone else will do it for them.

**Ability to Impact**

Impact in the Supply target area can be shown through the development of tools and traits that will add value to the U.S. soybean crop with rewards that can be felt at the farmer level, whether through higher prices, mitigating crop losses, or capitalizing on production efficiencies. This effort will ensure that the U.S. soybean industry can remain competitive in the global market by providing buyers of U.S. soybeans the traits they need without sacrificing yield for U.S. soybean producers. It is important to note that research to improve the U.S. soybean is an ongoing journey, not a destination. Any U.S. soybean crop improvements will likely be incorporated into foreign soybeans within three to four years, so continuous research for incremental improvements can impact supply through the strategies of composition, yield and partnerships with processors. Impact can also be made by actively engaging the industry to drive market acceptance of biotechnology and sustainable practices.

**LRSP Objective 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**A. Domestic Marketing – Supply**

**Goal:**

- 1. Provide the market with high value U.S. soybean varieties that meet the needs of global customers to ensure demand for 3.5 billion bushels of U.S. soybeans by 2011.

**Strategy:**

- a. Composition  
Optimize protein and oil levels of the U.S. soybean crop.

**Tactics:**

- i. Refine analysis of economic impact of lower crude protein as 2009 data becomes available, such as international export data, South American data and South American production impact.
- ii. Quantify the economic impact (oil/protein profit tradeoffs) of higher oil soybean varieties.
- iii. Communicate the results of the various SYQ and special project economic analyses to the academic community and industry regarding the constituent value of U.S. soybeans.
- iv. Develop informational messages and educational materials regarding soybean protein and oil quality specifically geared toward seed companies and parent stock producers.
- v. Launch the Soybean Quality Toolbox and continue to improve it over time.
- vi. Assess amino acid quality as it relates to crude protein and determine how this information can be utilized in marketing efforts.

**Performance Measures:**

- i. Negative economic impact of lower protein and oil levels in U.S. soybeans demonstrated to farmers, seed companies and farm managers.
- ii. Understanding of the window of ideal component balance for optimal producer profit is gained.
- iii. 2009 crop information incorporated in InfoBase.
- iv. Amino acid analysis of F.I.R.S.T. samples compared to crude protein levels and plan developed to market information.

**Strategy:**

- b. Composition  
Create economic incentives for most U.S. soybean farmers to plant higher quality compositional trait varieties, specifically higher levels of crude protein.

**Tactics:**

- i. Build on existing procurement program successes to continue processor recognition of the value of compositional improvements.
- ii. Quantify market impact for each procurement program to determine whether programs can be self-sustaining.
- iii. Expand processor procurement programs that increase market recognition of protein and/or oil improvements.
- iv. Solicit procurement impact data from processor programs to develop a generic procurement impact message.

**Performance Measures:**

- i. Established 2006 protein and oil procurement programs maintained for the 2009 crop year.
- ii. Quantitative assessment provided from processors to support increase in market value due to procurement program.
- iii. Protein and oil procurement programs maintained.
- iv. Processor procurement program impact assessment developed and delivered to communications for incorporation into the overall communication message.

**Strategy:**

- c. Composition  
Assess and recognize the market value and economic impact of soybean components.

**Tactics:**

- i. Work with seed variety companies to ensure that crude protein and oil information on all commercial varieties is available.
- ii. Ensure that seed germplasm companies incorporate crude protein and oil as part of the screening process when selecting lines to advance through to a commercial status.
- iii. Collaborate with seed company sales representatives, farm managers and processor procurement locations to participate in farmer meetings and promote the 19 percent oil, 35 percent protein message and the procurement programs.

**Performance Measures:**

- i. At least three seed companies incorporate oil and protein data into communications through product literature and company Web sites.
- ii. Farmers and farm managers are provided with varietal comparisons of protein and oil levels for all varieties currently available through existing procurement programs.

**Strategy:**

- d. Composition  
Develop the capability to effectively measure soybean attributes rapidly and cost effectively.

**Tactics:**

- i. Continue efforts to ensure industry adoption of the best analytical methods for timely and cost effective measurement of oil, protein and fatty acid composition.
- ii. Continue to build the lab certification and proficiency testing program to standardize test results.
- iii. Generate a database of wet chemistry values for use in developing calibration files.
- iv. Refine wet chemistry analytical methods to measure amino acid levels and explore methods for other soybean meal attributes, such as phytate-phosphorus and soluble sugars.

**Performance Measures:**

- i. Industry-accepted analytical approach developed to measure quality soybean meal and oil traits in soybeans that meet targets identified by end users.
- ii. Labs continue to participate in the proficiency program and variation in lab-to-lab results is reduced.
- iii. Database of wet chemistry values for use in developing calibration files generated.

**Strategy:**

- e. Composition  
Commercialize and evaluate improved varieties.

**Tactics:**

- i. Facilitate commercialization of soybean oil options with improved health profiles and functionality.
- ii. Communicate “trans solutions” message about trait improvements such as the low-linolenic and high-oleic soybean oils to food companies and related participants in the soybean oil supply chain.
- iii. Evaluate the new, enhanced soybean oil functionality performance and end user acceptance in the marketplace. Build on successful low-linolenic soybean adoption strategies for future trait introductions. Lay the groundwork for the introduction of high-oleic soybean oil.
- iv. Serve as a catalyst to close the gap between farmers, seed producers, processors and end users so that the entire industry can benefit from the production of specialty varieties, especially low-linolenic soybeans.

- v. Promote to supply chain participants the health benefits of soybean oil.
- vi. Develop risk management tool to help farmers mitigate the risks of adopting improved trait soybeans into their production mix.

**Performance Measures:**

- i. Market analysis of low-linolenic soybean usage shows user acceptance and quality performance characteristics throughout the marketplace. Market is eager for additional oil alternatives.
- ii. Farmers are receiving a premium that encourages sufficient planting of specialty soybeans and end users have adequate supply to encourage continued and expanded usage.

**Strategy:**

- f. Composition  
Provide support to QUALISOY in its efforts to support the introduction of new traits valued by customers.

**Tactics:**

- i. Increase awareness of QUALISOY to oil refiners, food and feed industries.
- ii. Engage key industry participants regarding the changing dynamics and impact of trait improvements or “outside” factors such as biodiesel demand on soybean meal.

**Performance Measures:**

- i. Key industry participants are informed regarding changing market dynamics for soybean meal and oil and are also informed regarding QUALISOY’s role in making soybean trait improvements.
- ii. The number of companies utilizing QUALISOY as a source for information continues to increase.

**Goal:**

- 2. Ensure sufficient supply of high quality U.S. soybeans for global customers.

**Strategy:**

- a. Composition  
Identify, document and quantify markets for U.S. soybeans.

**Tactics:**

- i. Quantify consumption of U.S.-produced soybeans by component and by market segment on an ongoing basis.
- ii. Quantify trait valuations throughout the supply chain, quantify their economic benefit to soybean farmers and assess other market implications such as biodiesel demand.
- iii. Utilize QUALISOY to engage the market in identifying trait(s) for future enhancement in order to meet end user requirements.

**Performance Measures:**

- i. Database of historic soybean consumption and utilization of U.S.-produced soybeans from 2001 through 2009 marketing years enables

USB to assess historic market conditions and make decisions on future priorities.

- ii. List of prioritized soybean meal and oil traits that are both technically feasible and of sufficient market value for commercialization enables USB and QUALISOY to move forward in the trait enhancement research pipeline.

**Strategy:**

- b. Composition  
Optimize soybean quality throughout the supply chain.

**Tactics:**

- i. Document how specialty varieties (such as low-linolenic oil beans) differ from commodity beans in terms of protein, oil and other important characteristics.
- ii. Understand how processing impacts economic return to the farmers and quality trait improvements.
- iii. Assess feasibility of enhanced soybean meal traits as recommended by the Animal Nutrition Working Group (ANWG).
- iv. Determine whether low crude protein beans have better amino acid quality through split sample testing of F.I.R.S.T test plots.

**Performance Measures:**

- i. Specialty oil traits are included in InfoBase analysis.
- ii. Discussions have been held and documented with three major processors to identify areas where quality improvement programs can be initiated.
- iii. ANWG concepts and ideas have been vetted for further action. Applicable programs are put into place.

**LRSP Objective 2:**

- II. Approval in the importing countries that comprise 90 percent of U.S. soy products for each biotech event by the time of its commercialization.

**Goal:**

1. Support QUALISOY, industry, processors, technology companies and other stakeholders in bringing biotech traits to the market.

**Strategy:**

- a. Composition  
Provide funding and staff support for biotech marketing projects to complement Biotech Initiative efforts and assist the Biotech Initiative in achieving its objectives.

**Tactics:**

- i. Conduct Domestic Marketing biotech projects as directed by the Biotech Initiative.

**Performance Measures:**

- i. Biotech Initiative-directed projects are successfully implemented.

**Goal:**

2. Communicate the benefits of biotechnology to strategic market sectors.

**Strategy:**

- a. Composition  
Conduct targeted communications efforts to food industry and health influencers and government and media that correct misconceptions and inform regarding biotech benefits.

**Tactics:**

- i. Prepare biotech messaging specific to dietitians and health professionals for use as necessary.
- ii. Utilize biotech messaging in addressing food issues.
- iii. Utilize biotech messaging for addressing fuel issues for biodiesel and biobased products.

**Performance Measures:**

- i. Printed materials are developed for dietitians and health care professionals and messages are incorporated into electronic media.
- ii. Dietitians and health care professionals demonstrate knowledge of biotech benefits.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Goal:**

1. Document market data that can be used in USB sustainability efforts.

**Strategy:**

- a. Composition  
Collect various data, such as soybean supply and consumption, soybean yield, and soybean quality data that helps USB document its progress on sustainability.

**Tactics:**

- i. Document soybean production, yield, consumption and component quality data.

**Performance Measures:**

- i. Data is provided to USB organization.

**Goal:**

2. Integrate sustainability into soy product marketing.

**Strategy:**

- a. Composition  
Utilize sustainability messages.

**Tactics:**

- i. Incorporate sustainability messaging as developed by Sustainability Initiative into domestic marketing efforts through activities in each major market segment.

**Performance Measures:**

- i. Sustainability messages have been added to marketing activities.
- ii. Domestic Marketing Committee subcontractors are informed of sustainability messages.

**Financial Allocations:** \$2,266,184

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## Supply Production Committee

### Market Environment

Maintaining the competitiveness of U.S. soybean producers in the global market requires ongoing quality and compositional improvements while maintaining or increasing yield. Improved oil is needed to maintain competitiveness with other food use oil sources, especially in light of the Food and Drug Administration's trans-fats labeling requirements for food items. Improved meal is necessary to maintain soybean meal's position as the preferred protein source in animal rations for poultry and meat production. Composition improvements that do not sacrifice yield are necessary to increase crop value, resulting in maximized profit for soybean farmers.

The value of soybeans is determined by its main components of oil and protein. Seventy one percent of U.S.-consumed soybean oil is utilized for salad oil, frying, baking, margarine and other human food uses. Soy oil does not naturally contain trans-fats, but trans-fats are introduced into soybean oil by the partial hydrogenation process undertaken to make the oil suitable for certain baking and frying applications. In order to maintain market share, new soybean varieties are needed that produce oils that do not require hydrogenation. With the help of USB and QUALISOY, low-linolenic acid soybeans have been introduced to the market. Low linolenic/mid-oleic soybean oil is being tested by some food companies and universities. New soy oil alternatives are needed as quickly as possible. USB must continue to support soybean research to develop varieties with oil composition that is competitive with canola, sunflower, palm and other vegetable oils.

The surge in biodiesel production has offset the decrease in demand for soybean oil for human food use to date. Soybean oil is the primary feedstock for biodiesel production in the U.S. As the industry is refining its manufacturing practices, specific soy oil properties would be beneficial to improve the quality of biodiesel fuel. To meet the anticipated increased demand for oil, novel ways to develop soybeans with increased oil without a concomitant loss of protein should be considered.

The other major component of soybeans is protein, primarily in the form of soybean meal. The majority of U.S.-produced soybean meal is consumed as animal feed, mainly for poultry and pork. Soybean producers are facing greater competition from alternate protein sources for livestock and poultry as a result of increased biofuels production. Ethanol production from corn results in the byproduct, Distillers Dried Grains with Solubles (DDGS). DDGS compete with soybean meal use in animal agriculture. Increased biodiesel production is also increasing the amount of other protein meals on the global market, such as canola and sunflower meals. In addition, increased global demand for biodiesel production will increase the supply of soybean meal resulting from the need to crush more soybeans to meet the demand for oil for biodiesel manufacture. In all, the animal feed market is experiencing a glut in ingredient alternatives. When making choices, animal nutritionists look closely at ingredient composition and least-cost options to formulate diets. U.S. soybean producers will have a greater chance of maintaining market share as a protein source for animal feeds if they can offer enhanced compositional traits to their customers. For example, increasing the energy value of soybean meal would provide a tangible benefit to feed formulators.

The majority of U.S.-produced soybeans are sold on the commodity market, which compensates growers based on market price/bushel x volume. Maximizing return per acre must include developing varieties that protect yield from stresses, including soybean rust, soybean cyst nematode (SCN), charcoal rot, and drought. Increasing yield potential through genetic modifications and developing production practices that minimize variable production costs will also help maximize returns per acre.

Maximizing return per acre for soybean production is even more critical given the impact of increased demand for corn for ethanol production on corn prices. Soybean trait improvements that reduce input costs or increase crop value are needed to maintain economic incentives to farmers to continue planting soybeans.

A critical component of developing compositional improvements is the ability to measure improvements accurately and reliably. The market needs a consistent process to measure components such as oil, protein, fatty acids, amino acids, soluble sugars and phytate-phosphorus. While various organizations have their own analytical methods and calibrations, the same soybean sample analyzed by two different labs will often provide different results. A process to implement uniform measurement and results-reporting throughout the value chain will ensure that increased intrinsic soybean value is identified and can be properly rewarded by domestic and international buyers.

### **Strategic Approach**

The overall strategic approach for Supply involves improving soybeans to enhance component quality for oil and protein. This will ultimately enrich the value of U.S.-produced soybeans, providing customers with soybeans with improved traits by moving away from treating all soybeans as commodities.

At the same time, the Supply strategic approach must focus on soybean yield improvements. The main elements of the approach are to protect existing yield potential from biotic and abiotic stresses by identifying new resistance traits and to increase the existing yield potential. According to the annual USB-funded "Soybean Disease Loss Estimate," the U.S. has lost between 250 and 500 million bushels of soybeans per year to disease over the past few years. Minimizing losses by developing soybean varieties resistant to, or tolerant of, major soybean diseases like SCN and Sudden Death Syndrome will enhance the value, profitability and consistency of U.S. soybean production. Most soybean crops suffer at some point from drought stress. Genetic advances in tolerance to drought and other abiotic stresses will help protect yields, farmer profits and U.S. soybean production.

Although soybean rust has been less of a problem than had been feared, it has been in the U.S. only a relatively short time (since the 2005 growing season). Rust has continued to develop as a disease in the U.S. and continues to have the potential to cause substantial yield loss, particularly in the South, while increasing the cost of production due to increased fungicide use. Other soybean diseases, such as charcoal rot, are spreading and increasing in incidence, reducing yields, particularly when coupled with drought.

In the past, the soybean checkoff funded relatively little research designed to increase genetic yield potential, largely because seed companies have concentrated on increasing yield, and checkoff support would provide a relatively small incremental increase in resources devoted to this area. However, with the genomic tools now

available, this has changed. Researchers have determined that yield is influenced by numerous different genes, with some genes or Quantitative Trait Loci (QTL) contributing, for example, 5%, 3% or 2% to total yield potential. Researchers are now able to conduct “nested association mapping” using USB-funded research data including the sequenced soybean genome, genetic markers, and analysis of the soybean germplasm collection for 50,000 SNP markers. This approach couples genomics tools with other breeding approaches to identify genes that affect yield and to introduce many of these genes into a single germplasm line. This approach has the potential to result in substantial soybean yield increases.

Developing proper tools for measurement of quality traits through measurement projects will provide the standardized reference chemistry and harmonized NIR measurements needed to help change the market view of soybeans from a whole bean commodity to a component-driven market that addresses buyers’ needs.

### **Ability to Impact**

Impact in the Supply target area can be shown through the development of tools and traits that add value to the U.S. soybean crop and rewards at the farmer level, whether through higher prices, reduced crop loss, or improved production efficiencies. This effort will ensure that the U.S. soybean industry remains competitive in the global market by providing buyers of U.S. soybeans the traits they need, while maintaining or increasing yield for U.S. soybean producers. It is important to note that research to improve the U.S. soybean is an ongoing journey, not a destination. Any U.S. soybean crop improvements will likely be incorporated into foreign soybeans within three to four years. Continuous research for incremental improvements can impact supply through the strategies of composition, yield and research coordination. Impact can also be made through the research coordination strategy by actively engaging the research community to ensure that dollars available for research are well spent and address the needs of soybean farmers and their customers.

Soybean yield can be impacted by USB’s research efforts to develop varieties that are resistant to biotic and abiotic stresses and by research to stack numerous yield impacting genes into single germplasm lines. As is the case with all plant breeding efforts, the impact will not be realized for several years due to the length of time required for such research. It is imperative that soybean yield research continue to build upon work already done to develop resistant soybean varieties.

Identification of genes with the potential to increase soybean yields and the development of genetic markers for these genes will expedite the process of moving yield-improving traits into germplasm adapted to soybean maturity groups across the U.S. Research also can result in the development of a new type of broad-spectrum resistance to SCN. Research to date shows promise in identifying lines that show resistance to rust. The soybean rust sentinel plot program successfully provided an early warning system to keep farmers across the U.S. informed of the location and movement of the disease during 2008. This program was responsible for minimizing unnecessary soybean rust fungicide applications and saved soybean farmers untold money. Perhaps most important is the involvement of USB farmer-leaders and staff in rust research planning meetings and the willingness of the checkoff to dedicate funds to address needs in rust research. This level of USB involvement has been instrumental in developing a strategic plan to address rust in the U.S.

Soybean composition can be impacted in at least two ways. First, because USB has emphasized the need for improved compositional traits and has funded public research, seed companies have also recognized that while yield and agronomic properties will always be vital, improved composition to meet global competition is also important. This change in emphasis can be seen by the introduction of low-linolenic acid soybean varieties by three companies. Low linolenic/mid-oleic oil is being tested by several food companies and others. Commercial companies are also seeking other quality improvements. Second, USB can impact soybean composition by continuing to fund research to improve compositional traits by understanding gene regulation of specific traits and by interacting with seed companies to ensure quality traits are included as part of germplasm advancement. Current genomics efforts will impact composition by providing necessary tools to researchers for the development of high-yielding soybean varieties with improved traits. Because this genomics research is being done by public researchers using USB funding, the genomics information is publicly available to all plant breeders.

People throughout the value chain have become involved in the USB-sponsored quality component measurement program. Without USB's involvement, this would have been difficult, if not impossible. Genomics research efforts are providing scientists with much needed tools and have helped put soybean researchers in a position to compete for research grants from the National Science Foundation, USDA's Cooperative State Research Education and Extension Service and other public agencies.

Based on new information, low-phytate lines with good yield and good germination can be developed, addressing earlier concerns that this might not be possible.

Checkoff-funded genomics research helped to position soybeans to be chosen by the Department of Energy's Joint Genomics Institute for sequencing. This \$11 million project is completed, resulting in 8x sequence coverage of the soybean genome. The data has been posted on a publicly available Web site and information from it is being used by many soybean researchers.

Low-linolenic soybean varieties, resulting from both public research and from private companies, are being grown under contract. Demand for these soybeans continues to increase, and additional low-linolenic varieties have been released for commercial production. USB-funded researchers have released a number of new lines with one or a combination of low-linolenic, mid-oleic, and high-protein. These lines are being used by public and private soybean breeders in their breeding programs.

**LRSP Objectives 1 & 3:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area**

- A. Production – Supply

**Goal:**

- 1. Increase the production of an improved soybean to meet the needs of the end user.

**Strategy 1:**

- a. Supply – Yield  
Improve average U.S. soybean yields by increasing the level of plant resistance to environmental stress, targeted pests and diseases in elite germplasm.

**Tactics:**

- i. Continue to support research programs on soybean rust, drought tolerance, SCN and other priority biotic and abiotic stresses.
- ii. Identify genes/QTL involved in resistance of plants to targeted biotic/abiotic stresses and determine the functions of these genes/QTL.
- iii. Support genomics research to develop tools that increase plant breeding effectiveness and efficiency. Identify markers associated with genes for resistance to targeted biotic and abiotic stresses and make the markers available to other researchers.
- iv. Annually assess the economic impact of major diseases that affect soybean production areas.

**Performance Measures:**

- i. Protect soybean yield potential by developing varieties and/or germplasm with increased resistance/tolerance to biotic and/or abiotic stress.

**Strategy 2:**

- b. Supply – Yield  
Accelerate the process of developing and introducing new traits into elite germplasm that will lead to high-yielding varieties.

**Tactics:**

- i. Provide support to a research team(s) that can develop transformation technology for use with USB-targeted traits and with germplasm from other USB-funded projects within the yield and composition strategies.
- ii. Develop yield data from field trials for one or more major QTL derived from exotic germplasm.
- iii. Support functional and structural genomics research to improve the potential and efficiency of soybean breeding.

**Performance Measures:**

- i. Improved systems for genetic engineering are discovered and implemented, so that targeted traits may be incorporated into soybean more efficiently.
- ii. Major yield QTL from exotic germplasm are identified and breeding efforts are initiated to incorporate these QTL into adapted germplasm.
- iii. Genomics tools such as maps, markers, genomic sequencing and micro arrays are developed for use by breeders to make selections more efficiently and effectively.

**Goal:**

2. Improve production efficiencies in a sustainable manner.

**Strategy 1:**

- a. Supply – Yield  
Increase yield potential by identifying superior production practices, predictive models and monitoring systems and helping to ensure that this information is made available to producers.

**Tactics:**

- i. Support research to identify and improve management practices that constrain production efficiency in the major soybean production areas. Develop a multi-year research plan(s) to improve production efficiency. Ensure that researchers collect, share and publicize significant results.
- ii. Support research efforts to develop predictive models for movement of soybean rust and other air borne pests and diseases.

**Performance Measures:**

- i. Specific on-farm recommendations are developed that farmers can adopt to maximize production efficiency.
- ii. Recommendations and research results are communicated to farmers, certified crop advisors, and other interested parties via Web sites, meetings, and literature.
- iii. Systems are developed to predict and monitor plant disease spore movement.

**LRSP Objective 1:**

- I. Annual utilization of 3.5 bushels of U.S. soybeans by 2011.

**Committee – Target Area**

- B. Production – Supply

**Goal:**

- 1. Improve compositional traits to increase the value of U.S. soybeans.

**Strategy 1:**

- b. Supply – Composition  
Identify oil and meal traits and the genes that influence those traits to improve the quality and value of U.S. soybeans.

**Tactics:**

- i. Continue to develop germplasm lines with targeted levels of specific fatty acids and oil that are stably expressed across different environments.
- ii. Conduct industry functionality tests on “new oil” to qualify and quantify improvements.
- iii. Identify genes affecting the synthesis of traits of importance, including limiting amino acids, protein, metabolizable sugars, and fatty acids.
- iv. Identify genes that reduce phytate-phosphorus in soybeans in order to reduce phosphorus excretion in poultry/swine operations.

**Performance Measures:**

- i. Germplasm is developed with improved oil/fatty acid composition characteristics, and functionality of the improved oil is determined.
- ii. Traits are identified that improve metabolizable energy, reduce phytate-phosphorus, and improve the balance of limiting amino acids.
- iii. Genomics tools such as maps, markers, genomic sequencing, and micro arrays are developed for use by breeders to facilitate selection of progeny from crosses.

**Strategy 2:**

- b. Supply – Composition  
Incorporate genes conferring targeted compositional quality traits into elite germplasm in order to meet the needs of soybean end users.

**Tactics:**

- i. Identify selectable markers associated with genes/QTL for improved compositional traits and make these markers available to other researchers to enable breeders to identify and incorporate genes/QTL more efficiently.
- ii. When a trait has been identified and the corresponding gene/QTL has been incorporated into advanced germplasm, facilitate making the improved germplasm available to public and private breeders for inclusion in their breeding programs.
- iii. Encourage private sector breeders to include traits identified as needed by the market in their breeding programs to complement existing compositional improvements.

**Performance Measures:**

- i. Genes for improved compositional traits are identified and incorporated into elite soybean germplasm in MG 00-VII.
- ii. Adapted/improved germplasm is made available to commercial and public breeders for incorporation into elite soybean varieties.
- iii. Genomics tools are developed, shared, and used by soybean breeders to develop germplasm and varieties more efficiently.

**Strategy 3:**

- b. Supply – Composition  
Develop analytical standards that accurately and reliably measure quality traits to maximize added value throughout the value chain.

**Tactics:**

- i. Utilize third parties (e.g., GIPSA, AOCS) to work with industry to establish and implement a joint plan to develop analytical standards.
- ii. Solicit inputs and agreement by industry participants for all phases of the plan.
- iii. Work with key manufacturers of analytical equipment to ensure their understanding of the needs of the soybean value chain. Ensure that, to the extent possible, improved equipment for precise measurements can be used readily throughout the value chain, from the elevator to the end user.

- iv. Develop an efficient, effective wet chemistry analytical method(s) for determining levels of amino acids, phytate-phosphorus, and carbohydrates.

**Performance Measures:**

- i. Project member companies and organizations reach consensus on wet chemistry analytical standards for traits of interest. Laboratory training and certification programs are developed and implemented.
- ii. Consensus is reached among a core group of industry companies on both primary (wet chemistry) and secondary (NIR, for example) methodologies to be used in support of project goals.
- iii. A library of samples is established and made available through AOCS. These samples can be used by participating analytical laboratories to standardize their equipment and improve their NIR calibrations. An NIR certification and proficiency process is developed.

**Strategy 4:**

- b. Supply – Composition  
Support efforts to develop analytical technology that measures attributes rapidly, consistently, and cost-effectively.

**Tactics:**

- i. Continue efforts to ensure industry adoption of the best analytical methods for timely and cost-effective measurement of oil, protein, and fatty acid composition.
- ii. Work with NIR manufacturers and others to ensure that when the same soybean sample is measured with different instruments or at different points in the value chain, the results are similar enough to meet the needs of the value chain.
- iii. Continue to build the lab certification and proficiency testing programs necessary to standardize test results.
- iv. Generate a database of wet chemistry values for use in developing calibration files.
- v. Refine wet chemistry analytical methods to measure amino acid levels more consistently and efficiently and explore methods for other soybean meal attributes, such as phytate-phosphorus and soluble sugars.

**Performance Measures:**

- i. An industry-accepted analytical approach is developed to measure soybean meal and oil traits of importance to end users.
- ii. Labs continue to participate in the proficiency program and variation in lab-to-lab results is reduced.
- iii. The database of wet chemistry values for use in developing calibration files is enlarged.
- iv. The NIR technical committee continues to work together to standardize NIR measurement to meet the needs of the value chain.

**Strategy 5:**

- b. Supply – Composition

Producers will be provided with information on regional variation in soybean composition to increase their awareness of the benefit of evaluating soybeans on constituent value rather than treating soybeans as commodities.

**Tactics:**

- i. 2008 NASS and IM survey data will be incorporated into the survey database.
- ii. Additional seed samples for NIR analysis will be collected by collaborating with universities, USDA, or private seed companies.
- iii. Assuming successful development of NIR technology for analysis of soybeans and soybean meal, samples will be analyzed and a soybean composition profile will be developed for each region that will make it possible to provide data for protein, oil, fatty acids, amino acids, phytate-phosphorus, and digestible sugars.
- iv. Soybean composition on a regional basis will be communicated to stakeholders in the value chain.

**Performance Measures:**

- i. A regional soybean assessment of oil and meal components is developed for U.S. soybeans.
- ii. A database and specific reports for value chain stakeholders is developed, and results are reported on a Web site.

**Financial Allocations:**

Production – Supply/Composition: \$3,216,589

Production – Supply/Yield: \$6,540,400

**Program Staff Contact Information:**

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## Human Utilization Domestic Marketing Committee

### Market Environment

Human Utilization accounts for nearly 21 percent of soy use, domestically. Soy oil provides most of the value to soybean farmers within the human uses area.

#### *Soy Oil as a Market Place Leader*

Eighty-one percent of all U.S. soy oil is utilized as human food in salad oil, cooking oils, commercial frying oils, baking, margarine and other uses. About 16 billion pounds of soy oil is consumed annually. Soy oil represents 71 percent of the total vegetable oil market in the United States.

However, in January 2006, the Food and Drug Administration's new trans fat labeling regulations went into effect. Food manufacturers and food service operators began reformulation of their products or processes in order to eliminate trans fats. Some major U.S. municipalities (New York City and others) banned trans fats at restaurants. Current estimates indicate that soy oil market share has dropped by 6 percent over the past two years. Competitive oils, particularly canola and palm, have experienced increased usage.

To provide soy solutions to this trans fat issue, low-linolenic soybean varieties were introduced in 2004. Farmers planted nearly 1.5 million acres of low-linolenic soybeans in 2008. Low-linolenic soy oil, which can be used in light commercial frying, is one part of the solution to the trans fats issue. Without low-linolenic soy oil in the marketplace, producers would have suffered a \$700 million loss with market share going to competitive oils.

However, the heavy commercial frying and baking industries need more stable oil and USB, working with QUALISOY, will help introduce increased oleic oils and high-stearic oil in 2009 and 2010. Farmers will be asked to grow these new soybean varieties to ramp up the increased oleic oil supply to meet end user's needs. USB's value chain analysis estimates that high-oleic soy oil will add \$581 MM in producer income annually over the next 20 years. Introduction of high-stearic soy varieties is expected in 2010-11. Also in 2011, a mid-oleic/ low-saturate soybean variety is likely to be introduced. This will be followed by the introduction of an increased Omega-3 variety in 2012. These varieties are expected to provide consumers with heart health benefits.

The introduction of these new soy oil varieties is significant, not only for maintaining soy oil market share, but by incrementally growing the soy market value and perhaps more importantly, for the introduction of biotech traits with specific health benefits into the consumer market place. Acceptance of biotechnology by consumers is key to meeting USB's LRSP goals #1, #2 and #3.

#### *Soy Protein and the Soy Health Halo*

Eighty-five percent (85 percent) of consumers perceive soyfoods as healthy, an all-time high since USB began measuring consumer attitudes in 1999. However, there is a dark side not reflected in these perception statistics. Attacks on soy, particularly related to soy genistein intake, have increased in number and intensity. Some foreign governments

(France, Israel and Japan) have recommended restrictions on soy intake among infants, children and expectant mothers.

The heart health claim is being reevaluated based upon recent research showing that soy protein does little to reduce LDL cholesterol. USB's Domestic Marketing Committee and the Soy Nutrition Institute (SNI) sponsored research studies to support reaffirmation of the health claim and an extensive response to FDA's request for comments was completed in July. FDA's reevaluation could take between one and two years.

If the FDA decides to reaffirm the soy health claim, the announcement will provide a great opportunity to create "news" about soy and heart health. Additionally, there is some discussion about the potential for a hypertension health claim for soy, although this is quite preliminary. USB and SNI would play a significant role in any new health claim petition.

### **Strategic Approach**

The approach to protect soy oil's market share domestically will include support of industry efforts to commercialize soy-based oils needing no hydrogenation and support of industry and QUALISOY efforts to develop soybeans with enhanced traits and characteristics.

USB continues to buoy the efforts of the soy industry to solve the trans-fat issue using soy-based solutions. USB was committed to helping gain acceptance of low-linolenic soybeans. These soybeans, with 3 percent or less linolenic acid (versus 7 percent for conventional soybeans), produce oil that needs little or no hydrogenation, thus eliminating trans fats. Through panels at trade shows such as the Institute of Food Technologists, the American Oil Chemists Society and the American Dietetic Association, USB will now communicate the arrival of increased oleic oils to end users and help drive interest and demand in these new oils. Increased oleic oils will provide soy-based trans fat solutions to the baking and heavy frying industries.

In another trans solution initiative, USB's Domestic Marketing Committee (DMC) contracted with a well-known researcher at Penn State University to complete a Stearic Acid Literature Review. USB-DMC also established a broad-based industry coalition on stearic that includes the National Pork Board, the National Cattlemen's Beef Association, the Chocolate Manufacturer's Association and numerous other major players. The review has been submitted for publication and will be used to establish that stearic acid is cholesterol neutral. This research will be valuable in establishing a case for a label change involving saturated fats and stearic fatty acids. Such a change in the treatment of stearic acid would help position interesterified soy oil as a trans-fat solution and create an opportunity for the possible introduction of high-stearate oils, which might replace competitive oils domestically and internationally.

The interest in the healthfulness of soy oil has generated development of soybean varieties that could provide human health benefits, create value-added niche markets and help keep the U.S. soy industry competitive. Technology companies have announced plans to introduce high-oleic oil (2009) and high-stearic oil (2010-11), mid-oleic/low-sat oil (2011-12), Omega-3 (2012), and other soy oils targeted for human utilization. Some of these varieties will be developed utilizing biotechnology. In FY10, USB should increase efforts to communicate the benefits of biotechnology prior to the introduction of these new soybean varieties.

USB-DMC will also continue its focus to leverage funds for research, marketing and promotion of soy oil and soy protein. Through programs such as the Soy Nutrition Institute, QUALISOY and the Soy Health Research Program (SHRP), USB's investments gain significant return. QUALISOY received an \$8.4 million three-year grant, while the SHRP has generated \$13.2 million in research funding on only \$570,000 in USB investment.

As demand for soy oil use in biodiesel grows, utilization of soy protein gains greater importance. Human utilization continues to be a solid soy protein utilization area. In FY10, USB needs to enable soyfoods companies to continue to drive consumption of soy protein by eliminating potential barriers to increased use. One of these barriers is FDA's announcement to reevaluate the soy and coronary heart disease (CHD) health claim. USB-DMC has worked through the Soy Nutrition Institute to create a coordinated response to FDA's request for information on soy and CHD.

Another developing factor that could impact soy oil use, as well as consumer perceptions of soy and soybean farmers, is the Food vs. Fuel debate. Although this issue is being addressed within the scope of the larger USB Board activities, DMC's Human Utilization area will need to monitor and provide support and information to help manage the Food vs. Fuel issue.

Domestically, USB-DMC will focus on communicating the health benefits of soy oil and soy protein to key audiences. Soy oil is a major source of Omega-3 fatty acid consumption for Americans. The new Dietary Guidelines for Americans cites the need for Americans to increase their intake of good fats such as those found in fish, nuts, and vegetable oils. Soy oil is also a good source of Vitamin E. Opportunity exists to grow the non-hydrogenated soy oil market. USB and the Soy Nutrition Institute are credible resources on soy and health and will play important roles in responsible communications about soy health benefits.

### **Ability to Impact**

Throughout the world, USB can impact individual consumers, health professionals, government agencies, food processors and manufacturers, bakeries, flourmills and the hotel-restaurant-industrial (HRI) sector about perceptions of soy healthfulness. This is accomplished through education and communications about the economic, functional, and health benefits of utilizing soy protein and soy oil in human food. USB can significantly impact the domestic soy oil market share through support of soy-based solutions to the trans fat issue. Through the QUALISOY effort, USB can move improved traits into the market, which will provide solutions to end user needs and protect the current soy oil market.

The success of low-linolenic soybean varieties demonstrates USB's ability to impact market introductions and the low-linolenic template will provide a good model for future enhanced oil introductions.

Building upon prior successes, USB-DMC programs in Human Utilization can continue to have a major impact and return on investment.

### **LRSP Objective #1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011

**A. Domestic Marketing – Human Utilization**

**Goal:**

1. Establish market demand for high value U.S. soybean oil and protein that fulfill the needs of global food customers and consumers.

**Strategy:**

- a. Demand Building  
Prepare marketplace for introduction of enhanced oils

**Tactics:**

- i. Media Relations – Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits
- ii. Trade Show Participation – Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Trade Advertising – As appropriate, use advertising in key trade journals to promote awareness and trial of new oils
- iv. Conferences and Forums – Participate in forums and conferences of influencers and academicians
- v. Food Industry Relations – Maintain contact with key executives in food industry through one-on-one meetings and forums

**Strategy:**

- b. Demand Building  
Coordinate new oil introductions with QUALISOY

**Tactics:**

- i. Provide staff support for QUALISOY marketing and communications efforts
- ii. Develop annual plan for each target area
- iii. Coordinate trade show appearances with USB programming

**Performance Measures:**

- i. Marketplace adoption of high-oleic oils and marketplace awareness of high-stearic and mid-oleic
- ii. Marketplace awareness of mid-oleic/low-saturate and Omega-3 oils in pipeline

**Strategy:**

- c. Demand Building  
Use “pull through” marketing strategy to help create demand and supply of trait-enhanced oils

**Tactics:**

- i. Media Relations – Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits

- ii. Trade Show Participation – Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Trade Advertising – As appropriate, use advertising in key trade journals to promote awareness and trial of new oils
- iv. Conferences and Forums – Participate in forums and conferences of influencers and academicians
- v. Food Industry Relations – Maintain contact with key executives in food industry through one-on-one meetings and forums

**Performance Measures:**

- i. Marketplace adoption of high-oleic oils and marketplace awareness of high-stearic and mid-oleic oils
- ii. Marketplace awareness of mid-oleic/low-saturate and Omega-3 oils in pipeline

**Strategy:**

- d. Demand Building  
Research and communicate health benefits of soy oil and soy protein to encourage continued use and new food product development

**Tactics:**

- i. Soy Nutrition Institute leadership and participation – Continue support of SNI as a credible third party entity and research initiative
- ii. Media Relations – Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits
- iii. Trade Show Participation – Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iv. Trade Advertising – As appropriate, use advertising in key trade journals to promote awareness and trial of new oils
- v. Conferences and Forums – Participate in forums and conferences of influencers and academicians
- vi. Food Industry Relations – Maintain contact with key executives in food industry through one-on-one meetings and forums
- vii. Soy Health Research Program – Continue support of SHRP to encourage research
- viii. Soy Connection Newsletter – Publish SCN on a quarterly basis to reach health professionals
- ix. SoyConnection Interactive – Update and maintain SoyConnection Web site

**Performance Measures:**

- i. Continued trend of soy product market growth within the retail sector
- ii. High consumer perception of soy as healthy, as measured by Consumer Attitudes Study
- iii. SHRP grants from NIH and amount of funds leveraged

**Strategy:**

- e. Demand Building

Defend health claim to maintain soy health “halo”

**Tactics:**

- i. Soy Nutrition Institute leadership and participation – Continue support of SNI as a credible third party entity
- ii. Information Dissemination - Provide educational material to governmental agencies, as requested
- iii. Provide leadership and guidance to SNI and industry on response to request for information from the Food and Drug Administration

**Performance Measures:**

- i. Reaffirmation of the Soy and CHD health claim
- ii. Maintain high level of consumer perception of soy as healthy, per the Consumer Attitudes About Nutrition study

**Goal:**

- 2. Encourage continued use and growth of soy products by maintaining a high level of consumer and influencer perception of soy health benefits.

**Strategy**

- a. Demand Building  
Research and communicate the health benefits of soy oil and protein

**Tactics**

- i. Trade Show Participation – Use exhibits, experts, panels and presentations to communicate to key audiences the health benefits of soy
- ii. Media Relations – Use traditional and new media to reach influencer audiences regarding the health benefits of soy
- iii. Information Dissemination – Provide educational material to governmental agencies, as requested
- iv. Soy Nutrition Institute – Support SNI research into the health benefits of soy oil and protein including potential new health claims
- v. Provide support and sponsorship of key health professional, research groups

**Performance Measures:**

- i. Complete key research projects on soy and health
- ii. Maintain consumer perceptions of soy as healthy as measured by the Consumer Attitudes Study
- iii. Gain measurable support for research through SNI and the Soy Health Research Program

**Strategy:**

- b. Demand Building  
Encourage everyday use of soy for good health

**Tactics:**

- i. Media Relations – Target food publications, influencer newsletters, trade journals and ag media for placement of articles on benefits of soy consumption
- ii. Trade Show Participation – Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Conferences and Forums – Participate in forums and conferences of influencers and academicians
- iv. Soy Connection Newsletter – Publish SCN on a quarterly basis to reach health professionals
- v. SoyConnection Interactive – Update and maintain SoyConnection Web site
- vi. Publish fact sheets on benefit of soy
- vii. Publish the Soyfoods Guide
- viii. Work with SNI on positioning soy within the Dietary Guidelines for Americans

**Performance Measures:**

- i. Maintain or increase weekly purchase and usage levels as measured by the Consumer Attitudes About Nutrition
- ii. Review product sales trends at retail on an annual basis through the Soyfoods Association of North America (SANA) monitoring mechanisms

**Strategy:**

- c. Demand Building  
Leverage USB funds for research into health benefits of soy

**Tactics:**

- i. Soy Nutrition Institute – Support SNI research into the health benefits of soy oil and protein including potential new health claims
- ii. Soy Health Research Program – Continue support of SHRP to encourage research

**Performance Measures:**

- i. Measure ROI for SHRP based on NIH grants versus USB investment
- ii. Determine research funds expended through SNI

**LRSP Objective #2**

- II. Approval in the importing countries that comprise 90 percent of U.S. soy products for each biotech event by the time of its commercialization.

**Goal**

- 1. Gain food industry, influencer and consumer acceptance and understanding of new biotech traits with health benefits.

**Strategy:**

- a. Demand Building  
Establish clear link between biotech oils and health benefits to consumers

**Tactics:**

*USB FY10 Action Plan  
Human Utilization – Domestic Marketing*

- i. Media Relations – Provide story ideas to industry trade journals regarding healthy new oils, the benefits of biotech and the functionality for food applications
- ii. Trade Show Participation – In all scheduled trade shows, promote the introduction of biotech-derived oils and their benefit to human health
- iii. Biotech Education – Work with existing biotech organizations to educate influencers and/or consumers on the benefits of biotech due to the fact that all research indicates that the knowledge of biotech results in support
- iv. Conference and Forums – Participate in appropriate conferences and forums to monitor biotech issues and maintain relationships with influencers
- v. Disseminate Information – Using various tools, provide information to key influencer groups on biotech benefits and benefits of new oil introductions on human health
- vi. Monitor news and research – Important to respond to negative news or research, as appropriate

**Performance Measures:**

- i. Gain placement of articles and electronic media stories on benefit of biotech oils
- ii. Establish benchmark awareness of biotech and health benefits and assess awareness against benchmark after educational effort

**Strategy:**

- b. Demand Building  
Communicate environmental and sustainable benefits of biotechnology to strategic market sectors, thought leaders and influencers

**Tactics:**

- i. World Food Prize Participation – Continue support of WFP, an organization that views biotech as critical to world issues around human health, sustainability and malnutrition
- ii. Trade Show Participation – As appropriate, communicate health, environment and sustainability messages to influencers, food companies and thought leaders at trade shows and conferences
- iii. Media Relations – Gain story placement on biotech benefits to human health, the environment and sustainable agriculture
- iv. Conference and Forums – Participate in appropriate conferences and forums that address environment and sustainability issues within the food sector

**Performance Measures:**

- i. USB receives recognition for World Food Prize sponsorship
- ii. At least two major stories are published regarding biotech benefits in the food area
- iii. Additional contacts are made and mailing list is enhanced through collection of data at trade shows

**Strategy:**

- c. Demand Building

Address soy biotechnology food issues as appropriate, capitalizing on industry partnerships and providing appropriate leadership

**Tactics:**

- i. Issues Monitoring – Monitor soy biotechnology issues, news and activist’s efforts
- ii. Issues Management – Provide support, as needed, if a biotech event occurs
- iii. Influencer Communications – Communicate benefits of biotech for human health, environment, and world hunger
- iv. Media Relations – Conduct media relations, as appropriate and as needed

**Performance Measures:**

- i. Conduct environmental scan to establish benchmarks on issues to determine awareness, understanding and criticalness; determine positive movement with follow-up survey

**LRSP Objective #3**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs

**Strategy:**

- a. Demand Building  
Define and gain understanding by key stakeholders of sustainability as it pertains to U.S. soybean production practices for food use

**Tactics:**

- i. Work with Keystone, ANSI and others to define agricultural sustainability for food production
- ii. Monitor news, research and activist efforts, and sustainability and “green” efforts of key food companies and retailers
- iii. Communicate soy sustainability to key stakeholders

**Performance Measures:**

- i. Establishment of workable sustainability standard for food production
- ii. Understanding of soy’s sustainability by stakeholders as determined by either qualitative or quantitative research

**Financial Allocation:**

Domestic Marketing – Human Utilization: \$2,238,813

**Program Staff Contact Information:**

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## Human Utilization International Marketing Committee

### Market Environment

As consumers today become increasingly educated about the benefits of soy, many are looking to increase the intake of soy in their diets. While many still look to traditional soyfoods, such as natto, miso, tofu and soymilk, as sources of soy protein, an increasing number of products are becoming fortified with soy protein, such as breakfast shakes, baked goods, cooking oils and salad dressings, offering new and inventive ways of boosting their soy intake. Growth potential in international markets remains high for value-enhanced soy products such as soy milk powder, texturized soy protein, soy protein concentrates and soy protein isolates as companies look to capitalize on the increasing demand for high-soy diets.

In Japan, the inclusion of soy ingredients in consumer food products has been growing rapidly. Examples include soy peptides in soda and water and soy proteins in beer. The growth of soymilk consumption in Japan closely mirrors the increasing consumption in the U.S. In the Middle East, commercial bakeries have introduced commercially viable traditional baked products that are soy protein-enriched.

The World Initiative for Soy in Human Health (WISHH) program is increasing consumption of soy protein in the developing world. With USAID's approval of the five Value-Added Soy Proteins for food aid purchase, private voluntary organizations have shown increased willingness to conduct pilot programs and consider requesting soy protein in their programs. There has also been interest from commercial non-food aid markets for use of soy protein in meat and dairy analogues in Central America, Asia and Africa.

### Strategic Approach

Efforts internationally will focus on encouraging and assisting soy processors to produce soy protein products, such as soy flour, isolates, concentrates, and texturized soy protein. Other efforts will promote the use of and trade in U.S. processed value added soy proteins. In addition, assistance will be provided to promote the use of these products by food processors, flour mills, bakeries, government entities, and hotel-restaurant-industrial (HRI) operations. Continued efforts will be made to build relations with soy-based food operations that represent traditional soy products that include tofu, natto, miso, soymilk, as well as value-enhanced soy protein products such as soy flour, isolates, concentrates, and texturized soy products. This strategy will build confidence and preference for variety specific U.S. food grade soybeans, as well as U.S. processed soy proteins, as challenges continue to increase from alternative sources of supply. Specific strategies will vary by market size.

Oil strategies will generally fall into two categories: 1) building loyalty for soy oil in markets where U.S. oil faces less competition from competing origins of soy oil but attempts to counter market share loss to competing oils, and 2) building loyalty with local crushers who market soy oil derived primarily from U.S. soybeans. Most international strategies are targeted at the HRI sector, not the consumer market due to the high cost of such efforts.

In food grade soybean promotion, the strategy has been to build loyalty to U.S.-origin variety specific soybeans designed for a particular end-use. The competition is generally from Canadian and Chinese origin soybeans. Due to concerted marketing efforts to the Japanese soy food trade, the decline in U.S. market share has been reversed and the U.S. market share continues to increase year after year. The U.S. has seen successful entry into markets in Southeast Asia and Taiwan. This is a market segment where not only does the soybean have to perform, but the relationship between supplier and user is paramount to continued success. International strategies are focused on building those relationships with use of buyers team travel to the U.S., hosting seminars with attendant mini tabletop trade shows, and introducing and escorting potential suppliers to end-use customers.

In Asian countries, soyfoods – rich sources of high quality protein – have been popular with health-conscious consumers for several decades. More recently, the popularity of soyfoods in these countries has increased markedly because of research suggesting that these foods may offer substantial health benefits beyond their role in meeting nutrient needs. Much of the soy protein strategy internationally is aimed at building demand for U.S.-origin soy protein in new applications unknown in local markets. This includes focusing on the nutritional as well as the functional properties of soy protein products in the baking, meat processing and food processing industries.

The WISHH program focuses on building demand for U.S.-origin soy protein in developing countries in Asia, Central America and Africa. Strategies include introducing soy protein as a food ingredient in indigenous staple foods that have broad market appeal, and providing product samples so that potential customers can experience the product in their own factories/facilities. The strategy also includes working with/through national government and non-governmental agencies and international private voluntary organizations interested in development, education and nutrition; a new market development concept is gaining ground in international circles targeting populations at the “base of the economic pyramid”. WISHH will work with private and public partners to further market growth among the populations that need soy the most. In addition to WISHH, the India program has a varied program with multiple strategies. From working with entrepreneur development to participation in trade shows and working with national and provincial government feeding programs, the strategies target all segments of society, from the poorest of the poor to wealthy Indians seeking healthier food.

### **Ability to Impact**

Throughout the world, USB can impact individual consumers, health professionals, government agencies, food processors and manufacturers, bakeries, flourmills and the hotel-restaurant-industrial (HRI) sector about perceptions of soy healthfulness. This is accomplished through education and communications about the economic, functional, and health benefits of utilizing soy protein and soy oil in human food.

### **LRSP Objective 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

### **Committee – Target Area:**

- A. IM – Human Utilization

### **Goal 1:**

*USB FY10 Draft Action Plan  
Human Utilization – International Marketing*

1. Sustain and expand global demand for US soybeans and soy ingredients for use in soy foods and other human nutrition applications.

**Strategy 1:**

a. Demand Building

**Tactics:**

- i. In Europe, educational seminars will be conducted to further increase the use of U.S. soybeans and soy protein products by the target audience.
- ii. In India, USSEC will continue their aggressive programs of one-on-one contacts with manufacturers, in the context of increasing health awareness in the country.
- iii. In Latin America, soy protein promotional activities will continue to convince new and established companies of the advantages of using soy protein.
- iv. WISHH will continue to provide technical assistance and new product/food technology support to private companies and private voluntary organizations in the developing world.

**Performance Measures:**

- i. In Europe, 25 soy protein ingredient manufacturers will be convinced of the value of U.S. soy.
- ii. In India, 190 food/pharma processors/manufacturers and health care professionals will begin using soy in their products.
- iii. In Latin America, 320 institutional decision makers and soy food processors will become aware of soy protein.
- iv. Through WISHH sponsored activities, 35 soy food manufacturers or distributors will use U.S. soybeans or proteins.

**Strategy 2:**

b. Customer Preference

**Tactics:**

- i. In Japan, USSEC will continue its campaigns to the Japanese soy food trade assuring them of the reliability of the U.S. identity preserved system.
- ii. In the Middle East, USSEC will continue to introduce key users on how soy ingredients (i.e. flour, concentrates, isolates, etc.) can positively affect the economics and quality of final products, ultimately increasing their profit potential.
- iii. In Southeast Asia, USSEC will continue to deliver the message that U.S. specialty food-grade soybeans offer a wide variety of characteristics, provide consistent quality and increase processing performance.
- iv. In Taiwan, training programs will continue to enhance the skills and product knowledge of preferred customers' soy oil sales professionals servicing the HRI (hotels, restaurant and institutional) sector.

**Performance Measures:**

- i. In Japan, 460,000 MT of U.S. identity preserved soybeans will be purchased.
- ii. In the Middle East, 100 key bakeries in the region will import 9,000 MT of U.S. soy flour.

- iii. In Southeast Asia, 8 food and beverage processors will develop a preference for U.S. food-grade soybeans.
- iv. In Taiwan, the HRI sector will consume 290,000 MT of soybean oil.

**LRSP Objective 2:**

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

**Committee – Target Area:**

- A. IM – Human Utilization

**Goal 1:**

- 1. When specific soybean varieties with precise traits benefiting human nutrition are commercialized, USSEC will introduce them to the global human nutrition industry.

**Strategy 1:**

- a. Demand Building

**Tactics:**

- i. Baking trials will be organized to highlight the benefits of using the new U.S. soybean varieties developed for human nutrition.
- ii. Continue informational campaigns in target markets on the benefits of utilizing U.S. soy for human consumption.

**Performance Measures:**

- i. Baking trials will be conducted in key target markets to highlight the new U.S. soybean varieties.
- ii. Conduct roundtable meetings and educational events to emphasize the safety of U.S. soy for human consumption.

**Strategy 2:**

- b. Customer Preference

**Tactics:**

- i. Offer educational programs to USSEC preferred customers in target markets to introduce new U.S. soybean varieties that will enable these preferred customers to purchase those varieties that meet their needs.
- ii. Provide USSEC preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

**Performance Measures:**

- i. USSEC will continue to provide avenues, such as trade shows and international trade team visits to the U.S., to allow interested importers and U.S. suppliers to develop relationships leading to U.S. soy purchasing sales of the new varieties.
- ii. Arrange U.S. site visits with companies producing the new U.S. soybean varieties to showcase to our preferred customers the new and exciting benefits U.S. soy has obtained through these new traits.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area:**

- A. IM – Human Utilization

**Goal 1:**

1. In markets where food industries must demonstrate the sustainability of their raw material supply chains, US soybean meal will be recognized as an economically and environmentally raw material for food production.

**Strategy 1:**

- a. Demand Building

**Tactics:**

- i. Position the U.S. food-grade soybean industry as a global sustainability advocate that creates demand for and facilitates delivery of sustainable technologies.

**Performance Measures:**

- i. Educate importers in international markets that U.S. food-grade soybeans pose a reduced environmental impact vs. soybeans from other origins.

**Strategy 2:**

- b. Customer Preference

**Tactics:**

- i. Increase positive awareness of economic or ecological advantages of U.S. identity preserved soybeans throughout the global product lifecycle, from production through end-product application.

**Performance Measures:**

- i. Key meetings and educational seminars will take place in target markets to educate those in the human nutrition industry of the traceability and extra steps taken to preserve the integrity of identity preserved soybeans.

**Financial Allocations:**

IM – Human Utilization: Customer Preference	<u>\$2,249,587</u>
IM – Human Utilization: Demand Building	\$ 298,578
Total:	

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## Communications Committee Industry Relations

### Market Environment

The U.S. agriculture industry continues to be one of the more positive sectors of the U.S. economy, but that excitement doesn't come without significant change and rising outside pressures. Row crop prices and demand for most oilseeds are staying near record highs. Technological advances continue to challenge U.S. soybean farmers to grow products with the purpose of meeting specific customer demands in certain segments. Overproduction may once again become a detriment to the U.S. soy industry should the "10 percent higher yield" promise ring true from major seed and other input technology providers. Soybean acreage was near an all-time high in 2008 and is projected to grow even larger in 2009. This continuous climb in acreage can be attributed to many variables, with a leading factor being the anticipated margin between production costs and sale price of corn versus soybeans, which in some cases makes soybeans the more profitable option.

While the collective outlook for soybean planted acreage, demand and prices remains modestly positive, U.S. soybean farmers face additional challenges, including rising input costs and a shrinking land base along with some concerns about the financial underpinnings of current farmland values. These "closer to home" issues along with a bleak overall U.S. economy have created pessimism on the overall attitudes of U.S. consumers, and farmers are no different.

Despite this pessimism, record demand continues for U.S. oilseeds around the globe, with soy exports topping 1.5 billion bushels last year. In particular, demand from China and Mexico continues to grow, and checkoff international marketing efforts will most likely result in new demand coming from countries with booming populations and growing economies. With this demand comes an increased expectation to meet specific customer needs for quality and improved traits. Right now opportunities to select varieties to meet these demands are limited to low-linolenic varieties and selecting according to protein and oil levels, but this is undoubtedly changing, particularly with the next generation of biotechnology anticipated to bring dozens of new opportunities to U.S. soybean farmers. These advances will create an opportunity for the checkoff to serve as an impartial information source for U.S. soybean farmers to help maximize on-farm profit opportunities.

A renewed focus on the development and successful adoption of new technology remains critically important to the future success of the U.S. soybean industry in the eyes of soybean farmers. The advancement of biotechnology will undoubtedly continue to cause backlash from some consumers and other customers of U.S. soy. The relatively new USB Biotechnology Initiative continues its charge of working across the value chain to both drive acceptance of biotechnology and assess what new advances will offer additional profit opportunities to U.S. soybean farmers. These advancements require the soybean checkoff to play a greater leadership role in U.S. agriculture to help ensure that consumers and U.S. customers are aware of the benefits and safety of biotechnology advances.

While some organizations' definitions of sustainability attempt to eliminate biotechnology and other advances in U.S. agriculture, others provide a platform for U.S. soybean farmers to succeed and even market sustainable practices to global customers. Environmental, agricultural, corporate, governmental and countless other entities worldwide are advancing their

sustainability positions in hopes they control their destiny before someone controls it for them. Nearly 60 percent of U.S. soybean farmers indicate they have already made changes to their farm to make it more sustainable, but how to define those changes and their impacts remains unclear. Accordingly, soybean checkoff farmer-leaders developed a Sustainability Initiative with a formal definition and objectives to drive the ongoing competitiveness of U.S. soy. Despite the ever-evolving public perception toward animal agriculture and other environmental issues, the soybean checkoff must drive the adoption of its sustainability definition, along with an effort to continue to promote best management practices that support this definition. This will hopefully prevent counterproductive groups from influencing future soybean production practices and provide additional potential profit opportunities by adopting or using best management practices.

The U.S. animal agriculture industry continues to utilize most of the domestic soybean meal supply, yet faces severe public perception issues. Some anti-animal agriculture organizations target not just the general consumer but also youth. With the growth of consumer concern over food safety, the effectiveness of these activist groups' efforts should not be underestimated. Passage of anti-animal ag legislation by states and a decreasing U.S. poultry and livestock population reinforce the need for support efforts at the national level as well as partnerships with QSSBs. Fluctuations in USB Producer Attitudes Surveys demonstrate the need for regular, sustained communications in this area to maintain and grow soybean farmer awareness of the importance of animal agriculture to their profitability.

Highly visible and controversial issues such as biotechnology and sustainability can't distract the soybean checkoff from being a part of the solution to addressing global poverty and the need for soy to play a role in improving human nutrition. Enabling American agriculture to be a part of that solution will mean that U.S. farmers must be more effective in demonstrating our role in these issues. Creating a balanced understanding remains imperative with both the agricultural and mainstream media. Too many times biased sources provide emotionally based information that doesn't accurately tell a complete story. This creates an opportunity for the checkoff to define and then focus on a targeted list of mainstream media and media influencers with accurate, science-based information to ensure U.S. consumers have the facts they need to make educated decisions about these issues. These media personalities, as well as many others, continue to rely on unregulated, unedited Internet and social media where all opinions can be heard.

Ongoing communications efforts by the soybean checkoff targeting soybean farmers continue to be strong. Awareness of checkoff priorities by soybean farmers remains high, and overall knowledge of checkoff activities is also at a near record high, with a third of farmers able to name three activities of the checkoff and another third able to name two activities. Most important, when asked about the continued need for the soybean checkoff program, a full 68 percent of soybean farmers indicated they feel the checkoff is still necessary. This creates a strong foundation for the checkoff to continue providing information on checkoff activities and accomplishments as well as information soybean farmers can use to increase their bottom-line profitability. USB will continue utilizing the soybean checkoff brand in these external communications. Research shows a high level of recognition of the soybean checkoff, compared with awareness of USB, not to mention the 29 state and regional qualified soybean checkoff boards.

On an internal front, USB continues strengthening relationships with the state and regional checkoff boards, particularly on communications efforts. In fiscal years 2008 and 2009, USB

farmer-leaders focused a great deal on increasing farmer-to-farmer interface at the state and national levels, and this has been quite effective. But there can never be too much USB and state soybean checkoff board collaboration, so continued focus must exist with progressive, easy partnerships made available.

After considering this overall market environment for FY 2010, the USB Communications Committee farmer leaders have chosen audiences and communications objectives for the upcoming year, keeping three key focus areas in mind: U.S. soybean utilization, biotechnology and sustainability.

## **Strategic Approach**

### **Soybean Farmers**

U.S. soybean farmers plowed new ground to create the soybean checkoff 20 years ago as a self-help, farmer-funded and farmer-driven program to help ensure growing soybeans remains a profitable component of their farming operations. In 2002, USB farmer-directors recognized the growing importance of communications by elevating it from a support program area to a full program area on par with International Marketing, Domestic Marketing, New Uses Research and Development, and Production Research and Coordination. The FY 2010 Soybean Farmer Audience strategic approach requires two main areas of focus:

- Meeting the communications requirement of the federal law that created the soybean checkoff by keeping U.S. soybean farmers well informed of the checkoff's activities and accomplishments.
- Provide U.S. soybean farmers with impartial, fact-based information. This will include dissemination of information related to progress made in other checkoff-funded, USB program areas, support committees and special board initiatives that address the board's priority issues. It will also include dissemination of information not necessarily checkoff-funded but of value to U.S. soybean farmers. This approach is designed to provide opportunities that will keep U.S. soybean farming profitable.

All FY 2010 Communications will continue to utilize the soybean checkoff brand. Past soybean farmer surveys indicated confusion exists among soybean farmers regarding the unique roles of the USB, QSSBs and other soybean organizations.

To strive to meet the soybean farmer audience communications objectives, USB will utilize an integrated approach consisting of three subcategories. They include:

- Internet: While adoption and regular use of the Internet by U.S. soybean farmers has not been as rapid as other segments of the general population, it does continue to steadily increase. The most recent soybean farmer survey showed continued growth in the use of high speed Internet service by U.S. soybean farmers. USB had the vision and made a sizable investment in upgrading the official soybean checkoff Web site at [www.unitedsoybean.org](http://www.unitedsoybean.org). This subcategory must continue to examine and establish unique and useful Web-based tools and information that U.S. soybean farmers can find exclusively on the USB Web site.

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Social and viral marketing Internet-based tools will also be identified and tested to determine their effectiveness with the soybean farmer audience. All of these tools will be required if the aggressive Internet objective of achieving 40,000 registered users can be met.

- *Beyond the Bean*: The most recent soybean farmer surveys show continued recognition and appreciation for the USB quarterly magazine, *Beyond the Bean*. The very title embodies the complexities of the scope of the soybean checkoff and the U.S. soybean industry. In FY 2009, the Communications program expanded the use of the *Beyond the Bean* brand to radio and TV information tools, which will continue in FY 2010, as well as examining and adopting new ways of extending the brand in other Communications areas.
- Direct Soybean Farmer Communications: For the first time in many years, USB developed a checkoff awareness campaign based on research that tested a variety of checkoff messages and creative approaches that would best resonate with U.S. soybean farmers. Utilizing third-party, independent testimonials from industry partners proved to be the most popular approach, which will continue in FY 2010. USB earned media activities such as print, audio and video news releases, combined with grassroots activities such as active involvement in key farmer and agriculture industry events, will continue to utilize USB farmer-directors up front as credible, primary soybean checkoff spokespersons.

This integrated Communications approach targeting U.S. soybean farmers will help ensure they remain confident the soybean checkoff is effective, efficient and farmer-driven.

### **Soybean Value Chain**

Because of the vast size of the soybean value chain universe, a focus on industry influencers creates the highest opportunity for success. This includes partnerships with industry trade associations as well as other commodity organizations to accomplish checkoff priorities. Ongoing outreach with these organizations, and one-on-one interactions with their leadership, allows checkoff farmer-leaders to promote priorities and engage these organizations in activities that will help accomplish USB objectives.

Outreach and partnership opportunities are vital, particularly in relation to animal agriculture, soy quality initiatives, biotechnology acceptance and sustainability practices. Support of these organizations through participation and sponsorship of their conferences and meetings will need to continue. This participation is a visible sign of the checkoff's support of other trade associations and commodity groups, and creates increased opportunities for one-on-one interactions to drive awareness of the soybean checkoff's efforts to create demand for U.S. soy.

The checkoff will need to continue providing both proactive and reactive information and education to industry. The use of digital communications tools allows USB to target several industry groups with information specific to their needs. Examples include targeting grain elevator managers, congressional staff or leadership of fellow agricultural organizations. All of this outreach is coordinated to leverage the overall success of USB's communications efforts.

USB's increased focus on biotechnology and sustainability create the need for ongoing communications with customers to ensure they have all of the relevant facts to make informed decisions and with industry partners who influence their constituents. Opportunities to partner with other USB program areas to inform and educate value chain members exist in relation to both of these new focus areas.

Another strategic priority within the value chain audience is the biodiesel and biobased product manufacturers and users. The checkoff helped establish the biodiesel industry in the U.S. and remains a major player in driving awareness and utilization. In FY 2010, communications efforts will also concentrate on communicating the superiority of soybean oil as a feedstock for biodiesel with the goal of the biodiesel industry increasing the percentage of soybean oil currently used in biodiesel production.

### **Consumers Thought Leaders**

Checkoff consumer attitude surveys show most U.S. consumers believe in the value of soy when it comes to soy as a food ingredient. The latest USB co-funded survey of eligible voters conducted in February shows the image of farmers has improved over the last year. However, when it comes to other checkoff objectives and priorities, such as animal agriculture; the production of a safe, nutritious and affordable food supply; biotechnology; and sustainability, a continued, positive awareness by consumers, and those who heavily influence the opinions of consumers, is severely lacking.

A general lack of awareness by mainstream media of the facts about U.S. agriculture remains not only a challenge for the soybean checkoff but for all of American agriculture. An overall, comprehensive, educational effort targeting the general U.S. population with information about major checkoff priorities isn't economically feasible, but targeted efforts to build awareness and provide factual information are achievable with a defined set of "consumer thought leaders."

Understanding the key messages for outreach will be focused on sustainability; biotechnology; and the importance of a domestically produced, safe, nutritious and affordable food supply. It is recommended that all activities be done in coordination with all USB program areas and initiatives, especially from results of the Communications program-funded survey in FY 2009. Coordination with other industry groups already working on these issues, where possible, will also take place. A natural opportunity exists for coordination of efforts and leveraging of communications that will increase the success of these activities. This coordination will be of utmost importance as well when determining messaging. Ensuring the checkoff, as well as other ag organizations, is focused on very similar messaging points provides a unified front for U.S. agriculture and decreases the chance for fragmented or conflicting messages to this audience. In order to first understand mainstream media's current attitude toward and coverage of U.S. agriculture, and specifically soybeans, an analysis is needed that will include a benchmark of positive coverage. Once this analysis has been completed, there is an opportunity to reach out to a small, select group of mainstream media and other "consumer thought leaders" with positive attitudes toward soy.

## **USB Board & QSSBs**

In order to effectively communicate to soybean farmers and other audiences, it's imperative that all checkoff communications provide consistent and concise messaging. To do this, it's necessary to provide ongoing internal communications about checkoff programs, activities, issues and priorities to the entire soybean checkoff family, including USB Directors, QSSBs and other soybean organizations. However, it will take more than just providing information and updates to ensure the checkoff speaks with a unified voice. It will be important for USB to develop resources and tools that allow the checkoff family to streamline its messages.

The Communications program will provide some core elements of support to the Board and QSSBs to ensure consistent communications across all audiences and media. Support includes sharing information through newsletters and bulletins; providing flexible resources to meet the varying needs of the 68 directors and 30 QSSBs; offering tailored support like speechwriting or ad customization; providing standardized support like the talking points database or the development of ad campaigns; partnering in the development of communications such as through the QSSB Communications Advisory Panel; ensuring opportunities for two-way communications such as through quarterly surveys or roundtable meetings; and providing opportunities for training, such as interviewing with the media.

By keeping the checkoff family informed and by providing a menu of flexible communications support, the Communications program will continue working to ensure U.S. soybean farmers consistently see, read or hear how their checkoff investments are being used to help build demand for soybeans and profit potential for each individual farmer.

## **Ability To Impact**

USB is responsible to every contributor of the soybean checkoff, each of whom has a vested interest in the activities of the checkoff. Within the soybean industry, USB is largely viewed as a reliable, third-party resource. The combination of the two allows USB to make a strong impact on the soybean industry.

- I. Annual utilization of 3.5 billion bushels of U.S. Soybeans by 2011.**
- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.**
- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.**

### **A. Communications - Industry Relations**

- 1. Communications Committee Goal 1-** Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the agriculture value chain and consumer thought leaders.

**a. Soybean Farmers**

- i. Develop, produce and distribute four issues of *Beyond the Bean*. Efforts will continue to build on the success of past issues and serve as the key piece of educational, action-oriented communications about checkoff-funded activities.
- ii. Make available relevant enhancements to Beyond the Bean Online that provides additional content and tools to visitors of the site that cannot be provided in the print version of its namesake.
- iii. Develop, produce and distribute a production research insert that provides soybean farmers and industry with an overview of all the soybean research projects focused on yield improvements, trait enhancements, pest and disease resistance improvements and genomics projects receiving checkoff funding for FY 2010, which is designed to build awareness of checkoff research funding.
- iv. Place print and radio ads specifically for a national/regional checkoff awareness building effort during the pre-planting/planting and pre-harvest/harvest seasons.
- v. Develop and place advertorial content and interviews on “AgriTalk” that provide extension and repetition of essential checkoff messages and provide increased reach and frequency of media relations efforts aimed at press releases, op-eds and other unpaid message placements.
- vi. Update tradeshow booths, premiums and materials as needed to convey key checkoff messages to soybean farmers, industry partners and the general public at tradeshow and outreach opportunities throughout the year.
- vii. Participate, sponsor and exhibit in tradeshow and outreach events that provide opportunities to share checkoff messages with key audiences, such as Commodity Classic, Farm Progress Show, National Farm Machinery Show, DTN/*Progressive Farmer* Ag Summit and others.
- viii. Partner with QSSBs to provide a united front at state-level tradeshow and outreach events such as the Western Farm Show, Topeka Farm Show, FarmFest, Delaware Ag Week, South Dakota Ag Outlook and state fairs.
- ix. Develop, produce and distribute digital, print, audio and video news releases, media tip sheets and op-ed pieces that inform soybean producers, the soybean industry and consumer thought leaders about the activities and accomplishments of the soybean checkoff.
- x. Carry out an assertive media relations effort with the agricultural media to maintain strong relationships, soybean checkoff knowledge and gain earned media coverage of soybean checkoff activities and accomplishments.
- xi. Organize and carry out up to four (4) media events that highlight soybean checkoff activities and accomplishments that gain earned media coverage and help keep soybean farmers well informed about the soybean checkoff.

- xii. Secure sponsorships and actively participate in the annual convention of the National Association of Farm Broadcasters and the Ag Media Summit.
- xiii. Secure and utilize a media monitoring service to measure earned media coverage of the soybean checkoff.

### **Performance Measures**

- i. Increase support of the soybean checkoff to 75 percent.
- ii. Increase the number of soybean farmers who know three activities of the checkoff three points to 34 percent and the number of soybean farmers who know two activities three points to 36 percent.
- iii. Increase the number of registered users on [www.unitedsoybean.org](http://www.unitedsoybean.org) to 40,000.
- iv. Set a benchmark that determines how many U.S. soybean farmers believe sound, sustainable production practices will enhance soybean production profitability.

### **b. Soybean Value Chain**

- i. Demonstrate checkoff support by participating in industry trade shows with our industry partners. Shows to potentially include are Farm Bureau, National Farmers Union, American Society of Farm Managers and Rural Appraisers, NACAA, International Poultry Expo/International Feed Exposition and others.
- ii. Distribute editorials and relevant collateral to industry partners. Editorials will focus on what the checkoff is doing to support farmers and agriculture in general. Encourage industry partners to include the editorials in their publications. Also, work with Publicis Consultants on placement of relevant editorials with food industry partners and publications.
- iii. Build on outreach to OEMs with a focus on helping them to “green” their companies through adoption of biodiesel standards and biobased products. Provide materials to help educate these companies and their customers.
- iv. Continue communications to update Washington leaders on checkoff activities. The update is for educational purposes only, and will not be used to influence public policy.
- v. Continue communications to elevator managers and feed industry leaders.
- vi. Seek out partnership opportunities with input providers and influencers such as seed dealers, extension agents, farm managers and elevator operators to communicate checkoff messages including biotechnology and sustainability.

### **Performance Measures**

- i. Increase key value chain stakeholders' knowledge and awareness of the soybean checkoff's efforts to help safeguard the U.S. animal agriculture and aquaculture industries, in collaboration with Domestic Marketing projects.
- ii. Partner with the Sustainability Initiative to drive recognition of the soybean checkoff's definition of sustainability and recognition of the checkoff's plan to support that definition with programs that establish a soybean position complementary with industry partners.
- iii. Create an understanding amongst the value chain about the soybean checkoff's ongoing efforts to drive the international adoption of biotechnology and maintain or create a positive image for biotechnology now and into the future.
- iv. Communicate the superiority of soybean oil as a feedstock for biodiesel to increase the percentage of soybean oil currently used in biodiesel production.

#### **a. Consumers Thought Leaders Media**

- i. Conduct a mainstream media project that includes press releases, press-ready stories, media pitches, media events, farmer letters and editorials and media outreach targeted at mainstream publications such as *USA Today*, *Newsweek*, *New York Times* and other local and major newspapers and magazines, with a goal of placing stories focusing on soy.
- ii. Develop a viral marketing tool that shares checkoff messages with the public in an online forum. Topics could include animal agriculture, biotechnology or soyfoods and would utilize outlets such as YouTube, public blogs, the USB Web site, email chains and partner organization Web sites.
- iii. Host a roundtable forum about new soy technologies, advancements or important soy issues for select media, including agriculture, business, food and industry publications. The roundtable would provide media with access to farmers and industry leaders for interviews and development, as well as new information and potential story ideas on ways to include soy in their editorial calendars.
- iv. Conduct an audit and analysis of the current public perception of biotechnology, soy and sustainability and other key USB messages to gain a better understanding of how consumers and the general public view these issues. The information gained from this audit will create a benchmark of awareness that will help soybean checkoff farmer leaders determine the next steps in communicating with the public on our most critical issues.
- v. Continue support of America's Heartland by providing editorial guidance and in-kind promotion and sponsorships to broaden the outreach of agriculture on rural neighbors and consumers.

### **Performance Measures**

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- i. Define and create a comprehensive list of consumer thought leaders.
- ii. Evaluate current consumer attitudes on animal agriculture/the food supply, biotechnology and the environmental sustainability of farming practices.
- iii. Develop and deliver a consumer thought leaders communications plan based on outcomes from first two objectives.
- iv. Develop and implement an editorial plan to assure USB's positions are represented in mainstream media as a counter to unfavorable messages.

**b. USB Board and QSSBs**

- i. Provide checkoff communications support to QSSB staff on an as-needed basis for "quick turnaround" requests, like customizing a print ad or supplying a photo, and for longer-range communications activities, such as designing a Web site, planning a meeting or developing a newsletter.
- ii. Plan and host Roundtable meetings with QSSB staff and farmer-leaders to determine and discuss checkoff communications messages, activities, tools and issues, with a focus on communications professional development.
- iii. Create and distribute a survey to QSSB staff to provide an understanding of how USB can better coordinate with QSSBs to communicate to producers, and to enable QSSBs to provide input on USB's messages and communications support activities.
- iv. Communicate pertinent checkoff information, available communications materials and resources, and USB meeting sponsorship opportunities with QSSB staff and farmer-leaders through a weekly e-mail, quarterly mailings and sponsorship mailings.
- v. Conduct in-person visits with QSSBs to foster stronger relationships, share communications ideas and develop support solutions through USB. Potentially coordinate visits with QSSB Board Meetings and events.
- vi. Update State Share Library and QSSB Workshop on the USB Web site with new materials, databases and site improvements to foster increased interaction between USB and QSSBs, and amongst QSSBs.
- vii. Provide reimbursement funding to QSSBs for pre-approved, state-based communications activities, with the option to select several messages to communicate, such as biodiesel, animal agriculture or soybean rust. QSSBs could apply to participate in this program through an application process.
- viii. Provide co-op funding to QSSBs on a 1:1 funds-matching basis to run USB-produced print and radio ads, helping to extend USB's national communications campaign to provide soybean famers with coordinated and consistent checkoff messages. QSSBs could

apply to participate in this program through an application process.

- ix. Provide support to the USB Executive Committee, Communications Committee, board and staff including items such as, director development and training. Research and complete all USB contractually required documents.
- x. Provide enhancements and additions to the USB Web site that provide valuable information and keep the site as up to date and user friendly.
- xi. Develop and supply the USB Directors, staff, contractors and subcontractors with communication pieces such as the directory, business cards, presentations and speeches.
- xii. Provide comprehensive coverage of, and interaction with, primary USB programs areas through communications.

#### **Performance Measures**

- i. Provide two new opportunities for two-way communications and collaboration between USB and QSSBs to help the checkoff speak with a unified voice.
- ii. Increase the number of registered users on *www.unitedsoybean.org* to 40,000.
- iii. Increase the number of QSSBs that utilize USB communications support to 100 percent of QSSBs.
- iv. Increase support of the soybean checkoff to 75 percent.
- v. Determine the number of USB Directors that use communications support from USB

**Financial Allocations \$7,386,420**

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## **Industry Relations - Research Coordination Production Committee**

### **Market Environment**

USB seeks to ensure that soybean checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued. Efforts aim to coordinate development of priorities, strategies and activities by state and national checkoff organizations to optimize total soybean research sector resources. USB, regional checkoff organizations and QSSBs share information and engage in frequent discussions related to research. The Research Coordination strategy provides funds for numerous efforts, including generation of a checkoff database used by many in the public and private sector to determine what research is being funded and to avoid redundancy. In addition, the development of new research tools and new soybean cultivars is accelerated by enabling increased communication among public- and private-sector researchers. This communication results in collaborative research efforts, sharing technology advances and setting research priorities for improvement of U.S. soybeans. USB and AgSource work with USDA/ARS and other public funding agencies to determine areas of common interest.

Checkoff organizations, such as the USB, provide the opportunity for coordination of research among the government, public universities and private industry. These activities require an “honest broker” that is not seen as having a profit motive or a possible conflict of interest. Participation by farmer-leaders and staff on teams, committees and task forces provides a “real world” perspective to help researchers understand the needs of farmers. Without this coordination effort, funds may be spent on redundant projects, while other important research targets may be ignored. Coordination is vital if checkoff funds are to be leveraged with public support of research.

### **Strategic Approach**

Research coordination involves more than funding meetings and developing databases. Farmer-leaders and staff spend substantial time participating on planning committees, advisory groups and task forces to ensure that research efforts address issues that the checkoff has identified as being important to soybean farmers. For example, farmer-leaders and staff actively participated in planning for rust research, genomics and reviews of ongoing national programs of USDA-ARS.

### **Ability to Impact**

Coordination includes facilitating efforts of the research community to determine the best approaches to address research issues important to soybean growers. For example, a Soybean Genomics Strategic Plan was developed through a collaborative effort of the soybean research community. This plan has been revised biennially and has been an invaluable guide to researchers and funding agencies. As another example, rust remains a top priority, and its impact on the soybean crop is continually being evaluated. Lastly, in 2008, at the request of soybean breeders, USB funded a meeting of public and private soybean breeders and others to discuss the future of public soybean breeding. This is critical since at this time, more than 95% of soybean varieties purchased by farmers are from private companies. As a result of this meeting, a Strategic Plan for Public Soybean Breeding was generated and was shared at the 2009 Soybean Breeders’ Conference. Coordinated efforts continue to be supported by USB to develop research plans for future years.

**LRSP Objectives 1-3:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global needs.

**Committee – Target Area**

- A. Production – Industry Relations

**Goal:**

- 1. Ensure that checkoff and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued.

**Strategy 1:**

- a. Research Coordination

Facilitate the coordination and development of priorities, strategies and activities by state and national checkoff organizations to optimize use of total soybean research resources.

**Tactics:**

- i. Coordinate research activities and priorities with QSSBs and regional checkoff organizations to maximize efficiency and minimize redundancy of research efforts.
- ii. Meet with key states individually to create an ongoing dialogue and sharing of priorities and activity plans.
- iii. Participate in international, national, state and regional conferences, research meetings and project reviews. Invite regional staff and leaders to attend selected Production Committee meetings.

**Performance Measures:**

- i. Develop and annually update a production research database that includes all national, regional and QSSB soybean checkoff-funded projects. This database, available to all interested parties, is used by USB and regional committees to increase research coordination and minimize unplanned funding redundancy.
- ii. Research priorities and plans are coordinated among NCSRP, SSRP and USB to reduce redundancy and to increase coordination of research efforts.

**Strategy 2:**

- b. Research Coordination

Accelerate development of new research tools and new soybean cultivars by facilitating increased communication among public and private sector researchers to coordinate research efforts, share technology advances, set strategies and priorities for the improvement of U.S. soybeans.

**Tactics:**

- i. Facilitate workshops and planning meetings for public and private researchers to identify and prioritize soybean research areas and to develop strategic and action plans to address needs.

- ii. Coordinate soybean research initiatives from university, government and private researchers across regions and disciplines.

**Performance Measures:**

- i. Checkoff-targeted research priorities are agreed upon, redundancy is reduced, and researchers benefit from the sharing of scientific information because of effective communication and collaboration among scientists in USB-funded programs.
- ii. Scientists working within given areas of research (e.g., pathology, genomics or plant breeding) meet to review results, set priorities, establish, review and update strategic and action plans to advance science in their areas.

**Strategy 3:**

**c. Research Coordination**

Share updated USB research priorities with public agencies and ASA. Identify opportunities for USB and public agencies to coordinate research efforts to ensure efficient use of all available research funds.

**Tactics:**

- i. Directly and/or through subcontracts, USB will provide staff to develop good working relationships and to serve as technical liaisons with ASA.
- ii. USB staff and Board members will meet as appropriate with key personnel in public agencies and will invite key people to attend committee meetings and USB-sponsored research workshops and symposia

**Performance Measures:**

- i. Good working relationships are established with USB and key personnel in public agencies to explore areas of research to address issues of common interest.
- ii. ASA is provided with information on areas of research interest and advised on technical issues surrounding these areas.

**Strategy 4:**

**d. Research Coordination**

Attract, encourage and train future generations of soybean research scientists.

**Tactics:**

- i. Provide financial support (such as fellowships, scholarships and internships) to attract highly qualified students into studies in areas of research important to soybean farmers.

**Performance Measures:**

- i. Highly qualified students are identified, selected and funded to pursue and achieve degrees in areas of research important to soybean farmers.
- ii. Skilled and trained young scientists join the soybean research community.

**Financial Allocations:**

Production – Research Coordination: \$964,977

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## Market Access Global Opportunities Committee

### Market Environment

The global market for US products—agricultural and others—has been particularly strong in recent years. Soybean product sales overseas reached an all-time record of nearly \$12 billion last year. This trend reflected global economic growth that created new markets in developing countries, but it also reflected favorable exchange rates and more liberal trade policies in the United States, and in many of our main markets. Now, relatively suddenly, those policies are under sharp attack on many fronts. Policies are being proposed and implemented that could have severe, negative impacts for some of our most important products and markets.

There can be no question that the world is suddenly much more protectionist than it was only months earlier as countries under economic pressure enact growing barriers to world commerce to safeguard sensitive industries — often by damaging those of their neighbors. Consider:

- In late January, the WTO reported that global protectionism was largely under control—but, by the second week in February, officials felt it necessary to convene a special international meeting to try to stem the protectionist tide;
- In early February, ten EU commissioners traveled to Moscow for special talks with Prime Minister Vladimir Putin and other officials there to complain about the pace and extent of new Russian trade barriers being erected;
- Protectionist concerns have become increasingly global. For example, EU and other trading partners recently warned the United States that proposed "Buy American" provisions in its stimulus package could break trade rules—even as EU nations reverse directions to impose protections of their own including subsidies for dairy exports and an effective ban on Chinese screws and bolts;
- WTO officials report to the press that the global economic landscape is changing so rapidly that officials there, the world's top trade-law enforcer are relying on news reports to keep up with developments since, "governments are often slow to report them;"
- WTO reports indicate that antidumping cases overall are up 40 percent since a year ago, and director Pascal Lamy has ordered his staff to create a new report tracking protectionist actions;
- Global trade is expected to shrink by more than 2.1 percent this year after growing by 6.2 percent in 2008.

Also consider:

- The stagnation and near-collapse of the Doha Round talks;
- Widespread protectionist rules implemented last spring in response to high commodity prices. Special examples include Russia, Philippines, Russia, and Argentina, among others; and
- Korean riots against the US-Korean FTA.

Among the most important changes in the trade landscape is the US policy shift from leadership in developing more open market policies to growing pressure for new protections here at home. Recent examples include the ongoing fight over "Buy American" provisions in the stimulus packages; the new Country of Origin Labeling policies and rules and the growing dispute with Mexico and others over those policies, the administration's reluctance to proceed with the already-signed FTAs with Panama, Colombia and Korea, let alone proceed with new FTAs; and the administration's talk of renegotiating NAFTA.

What has been observed is an increase in the interest of other agriculture producer groups, as well as global animal agriculture and animal feed organizations. Each group understands that they are interconnected with the other members in the value chain of agriculture production. South American soybean producer groups and even the Palm Industry Associations see a need for collaboration in ensuring the success of their producers and industry. These alliances and potential alliances present some challenges, but also offer opportunities for the U.S. soybean production industry.

### **Strategic Approach**

Defining “Market Access” is in terms of global policy and regulatory issues (challenges), impediments for industry development/growth in the global market place, and issues relating to global competitiveness of soybean producers that impact broader than an individual committee including:

- International trade agreements, WTO, analysis and monitoring of bi-lateral trade agreements, and market access issues
- Global regulatory process and market impact
- Research and analysis of legislative activities (issues analysis)
- Monitor Domestic issues of importance to the Board
- Communicate and conduct outreach efforts on all activities and outcomes of each project to all impacted stakeholders—agriculture community.
- Evaluate the use and impact of project outcomes by stakeholder. Integrate the planning process with the USB Long-Range Strategic Plan and Committee Action Plans.
- Appoint the Global Opportunities Advisory Committee

### **Ability to Impact**

USB resources have an ability to impact this strategy. Checkoff funded global access and competitiveness strategic approaches are coordinated with organizations such as NOPA, NAEGA, USGC, AFBF, ASA, USW, NCC, USTR and other organizations. Each of these organizations’ contribution to the aggregate effort is critical to the ability to impact these strategic approaches due to their global scope and scale. The ability to impact these approaches is doubled due to the financial and personnel resources provided by the USDA Foreign Agriculture Services, which is afforded only to the International Marketing and Competitiveness programs.

Intelligence led to the development of global soybean alliances to counter disruptive trade practices by China and to reduce the negative impact of new global regulations restricting the trade of biotechnology derived soybeans and other biotech commodities. Research has assisted the industry in highlighting the inequity of pirated technology use by our export competition, which has resulted in the technology companies aggressively pursuing financial instruments to have the violators pay their share of the technology fee. This will ensure that the Brazilian, Argentinean, and Paraguay producers are facing the same or similar production cost challenges.

Developing a market and industry monitoring program has led to cooperation with other associations, such as those previously identified, to sustain the U.S. soybean production industry. Working with these other organizations has ensured the enforcement of trade policies that will allow the U.S. to compete with South American producers. USB, through collaboration with the AOC and other commodity organizations, has leveraged checkoff resources to provide information and technical support, monitor regulations and develop a level playing field for the U.S. soybean industry.

**LRSP Objective 1:**

- I. Annual Utilization of 3.5 billion bushels of U.S. soybeans by 2011

- A. Market Access-Competitiveness

**Goal:**

1. Assure, to the extent possible, maximum competitiveness in the global market for U.S. grown soybeans and soybean products.

**Strategy 1:**

- a. Undertake monitoring and market analyses looking at issues affecting U.S. Soybean producer global competitiveness.

**Tactics:**

- i. Monitor economic indicators, trade/industry practices and trade trends to ensure that the U.S. soybean industry will maintain its competitiveness in the global soybean/oilseed industry.
- ii. Monitor economic, agricultural, and technology developments in competing oilseed production nations.
- iii. Analyze and monitor global agricultural programs that will assist or hinder the competitiveness of the U.S. soybean industry.
- iv. Proactively address and build coalitions to address key U.S. soybean marketing, agricultural, distribution, and infrastructure/transportation issues.
- v. Direct agricultural analysis on behalf of USB and take oversight responsibility for sensitive analysis required by the Board.

**Performance Measures:**

- i. Categorization and prioritization of those issues influencing the U.S. soybean industry will be developed and will document what should or can be done to affect them to the U.S. soybean industry's benefit.
- ii. Global monitoring completed will be used by USB Directors and USB Committees to determine the best recourses to achieve the USB LRSP objectives.
- iii. Monitoring and analysis work will be used to build domestic and international industry relationships with 4 new organizations and support special USB initiatives.
- iv. Develop a global market, industry, regulatory, and trade knowledge center to support USB Directors and USB Committees to assist in the strategic and tactical programs.
- v. Attend and participate in 5 industry outlook meetings in the U.S.
- vi. Attend and participate in 4 global industry outlook meetings outside of the U.S.

**Goal:**

2. Utilize international Alliances to better position U.S. soybeans globally

**Strategy 1:**

- a. Expand on the Global Grower Development Agreements (GGDA), International Soybean Growers Alliance (ISGA), and International Oilseed Producers Dialogues (IOPD).

**Tactics:**

- i. Define and direct specific GGDA/ISGA/IOPD oilseed agriculture initiatives.
- ii. Lead and coordinate a communication network with Uruguayan, Paraguayan, Bolivian, Argentinean, Brazilian, Indian, and Chinese soybean producer organizations.
- iii. Lead and coordinate a communication network with Palm Oil producer organization leadership in Indonesia and Malaysia.
- iv. Lead and coordinate a communication network with the International Oilseed Producer Dialogue, which has representatives from over 10 leading oilseed producing countries.
- v. Quickly and accurately address global public misinformation around oilseed production, in both a proactive and reactive manner-respond to public directly.
- vi. Conduct quarterly and annual strategy conferences where Oilseed coalition members assemble to plan strategies and tactics that are beneficial for oilseed production industry.
- vii. Develop a resource center to support global oilseed production and address oilseed industry issues as they arise.

**Performance Measures:**

- i. Full time representation is retained in South America to develop the GGDA and ISGA efforts.
- ii. Participation of GGDA/ISGA members in 4 international market access trips to targeted countries of interest.
- iii. Successful implementation of 4 GGDA/ISGA Roundtables, with clear direction to move forward.
- iv. A minimum of 7 public releases of GGDA/ISGA/IOPD and Palm Industry collaborative efforts on such issues as "Sustainability, Best Management Practices, and Food/Fuel/Feed).

**Goal:**

3. Expand international business development efforts for U.S. Soy

**Strategy 1:**

- a. Increase the industry partnerships and growth of global soybean consuming industries

**Tactics:**

- i. Capitalize on U.S. soy product utilization overseas by working with companies/ organizations globally in their business development planning processes.
- ii. Analyze global logistics/infrastructure/market environment to determine what new opportunities should be explored to develop the U.S. soybean product trade.
- iii. Conduct studies on "Turnkey" operations and develop business models/plans that can be used by overseas agriculture industry entrepreneurs.
- iv. Work with Agriculture Industry Venture Capitalists and interested companies to develop businesses identified as having a high probability of success in the previous analysis.
- v. Collaborate with vertically integrated businesses or cooperatives (horizontal businesses) in key markets to achieve market/economic efficiencies.

**Performance Measures:**

- i. Industry partnerships result in 4 new business analysis feasibility studies that are implemented by the targeted companies.

- ii. U.S. venture capitalist companies with a focus on agriculture industry development are introduced to domestic and international opportunities.
- iii. 4 new business models are developed based off of industry requests.

**Goal:**

- 4. Maintain and expand global soy trade through beneficial trade agreements

**Strategy 1:**

- a. Develop analysis on current and projected trade policy and domestic support positions that will assist in defending and identifying negotiating opportunities that will keep U.S. soybean producers competitive globally.

**Tactics:**

- i. Work with oilseed and other alliance industries in researching and monitoring the WTO negotiations modalities formulation and the development of other multi-lateral and bi-lateral discussions.
- ii. Research bilateral agreements and competitor domestic support programs among other countries to lessen the disadvantages that might accrue to U.S. soybean producers.
- iii. Monitor, investigate, and analyze trading agreements and negotiations to determine their impact on the U.S. soybean trade and our competitive position.
- iv. Provide information from the farmers' perspective to the U.S. soybean industry if a WTO challenge on soybean subsidies in domestic farm legislation is mounted.
- v. Provide technical assistance to the U.S. Government, when requested, during negotiations or discussions relating to trade policy.

**Performance Measures:**

- i. ASA and USB will work collaboratively to provide support to and defense of programs assisting U.S. soybean producers in the trade discussions.
- ii. USB-provided analysis/input, requested by any government entity or oilseed alliance industry, will be accepted into their responses to challenges of domestic government support programs or other programs affecting the profitability of U.S. soybean farmers.
- iii. Intelligence collected and analysis completed on current and projected trade agreements and negotiations will result in trade negotiation modalities that include the major thrusts of the U.S. soy industry.
- iv. As a result of analysis and research conducted by USB and utilized by others, current overseas markets for U.S. soybean products will remain open and additional overseas market opportunities will be made available.

**LRSP Objective 2:**

II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

- A. Market Access-Competitiveness

**Goal:**

- 1. Global market protection for U.S. soybean products.

**Strategy1:**

- a. Support and defend the international trade avenues for U.S. soybean products.

**Tactics:**

- i. Work in conjunction with other agricultural interest groups in monitoring and attempting to rectify trade-disrupting actions of offending foreign entities and multilateral organizations.
- ii. Monitor developments around the world on trade and market rules that would affect the acceptability of biotech products in the food and feed industries.
- iii. Investigate and address actions by individual countries that could constrain access for U.S. soybeans in that market either as a result of technical or non-tariff barriers to trade.
- iv. Provide and develop information regarding effects of existing or proposed overseas impediments to trade and utilization to the U. S. government, when requested, during dispute resolution or discussions relating to trade barriers.

**Performance Measures:**

- i. USB provided analysis/input, requested by any government entity or oilseed alliance industry, will be accepted into their responses to trade barriers.
- ii. All soybean trade related barriers will be challenged, when it is determined to be of benefit to the U.S. soybean producer.
- iii. Reactive analysis and research conducted on imposed or contemplated trade barriers on U.S. soybean products will be dealt with expeditiously.

**LRSP Objective 3:**

III. Promote US sustainable soybean production through responsible stewardship while acknowledging global market needs

A. Market Access-Competitiveness

**Goal:**

1. Ensure “sustainability” commodity procurement programs do not harm U.S. soybean product trade.

**Strategy 1:**

- a. Monitor and analyze industry information on global sustainable agriculture practices

**Tactics:**

- i. Monitor international forums on sustainability issues such as the Roundtable on Responsible Soy and provide representation to such global discussions on agriculture sustainability.
- ii. Work with the International Soybean Growers Alliance “ISGA” to develop an “Americas” Best Management Practices “BMP” for soybean production.
- iii. Monitor work of Roundtable on Sustainable Palm Oil, as well as other global efforts.

**Performance Measures:**

- i. A Best Management Practices will be agreed to by ISGA members.
- ii. A “Sustainability” definition will be accepted by the IOPD (International Oilseed Producer Dialogue” members.

**Financial Allocations:**

**Competitiveness     \$1,913,787**

**Program Staff Contact Information:**

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## **Global Access International Marketing Committee**

### **Strategic Approach**

Domestic and international trade policy issues are important to maintaining or increasing market access. Trade liberalization is vital in creating greater global economic growth and thus greater demand for pork, poultry, fish and soy products. Establishment of trade barriers by international governments that limit soy imports or inflate their prices often adversely affect the soy crushing, poultry and livestock, and food processing industries. USSEC works closely with these industries to bring their concerns to the host nation in efforts to remove or decrease trade barriers. Specifically USSEC will:

- Identify global access issues and bring them to the attention of competent authority to be addressed
- Monitor adherence to existing trade/market access rules
- Suggest areas where market access for U.S. product could be improved
- Develop and implement approved strategies to address market barriers
- Define and address impediments to market growth or retention

Rapidly growing, large volume international markets provide fast changing environments for development of market access issues that can limit U.S. exports. These markets are especially important as the U.S. has significant market share in China, Southeast Asia, Middle East/Eurasia, and Latin America. These markets provide the opportunity to work with expanding crushing and feed industries in promoting the interests of open access to imports of U.S. soy products without excessive duties, phytosanitary concerns, and restrictive trade policies. The international crushing and feed industry are often very supportive of USSEC initiatives in market access, as it allows them the opportunity for easier and often less expensive import of soy products.

Large international mature markets may create protectionist trade policies that can cause constraints on the import of U.S. soy products. In addition some markets often have very sophisticated feed and food industries that react rapidly to consumer concerns on issues such as biotechnology. Markets such as Europe, Japan, Taiwan, and Korea historically import vast quantities of U.S. soy products, and maintaining open access to these markets is extremely important.

Many international markets provide opportunities to address market access on a wide variety of topics. Just as developing countries have rising economies, they also have a developing regulatory system. The regulatory system is often plagued by lack of scientific information, lack of appropriate authorities to develop regulations (such as no FDA type authority), and adoption of protectionist regulations.

### **Ability to Impact**

Checkoff and FAS funded global access activities are coordinated with the previously identified organizations to magnify the impact of USB provided resources. Examples of the impact include: 1) keeping open access for genetically modified soy in the EU and China; 2) access for genetically modified soy protein in Russia; 3) reduction in the number of alleged U.S. soy pathogens in India's phytosanitary barriers from 14 to 4; and, 4) assistance in assuring that soy varieties developed from biotechnology were not commercialized domestically until import approvals were gained in major export markets.

**LRSP Objective 1:**

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**Committee – Target Area:**

- A. IM – Market Access

**Goal 1:**

1. Educate and garner support from country specific trade, scientific and regulatory officials on the harmful effects of overseas trade and market access barriers.

**Strategy 1:**

- a. Global Access

**Tactics:**

- i. Positively influence the interpretation and implementation of issues that could impact overseas market U.S. soybeans.

**Performance Measures:**

- i. In Europe, through outside consulting, the EU's Regulations and authorizations of biotech products and proposed legislation on biofuels will be continuously monitored for their impact on the U.S. soy industry.
- ii. Determine the number of instances where U.S. soybean production industry intervention has resulted in positive trade flows.

**LRSP Objective 2:**

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

**Committee – Target Area:**

- A. IM – Market Access

**Goal:**

1. Assure early adoption of new soy biotech events in key export markets.

**Strategy 1:**

- a. Global Access

**Tactics:**

- i. Prepare for upcoming biotechnology events and collaborate with key contacts to ensure a smooth and timely approval process.
- ii. Provide factual scientific information on the safety of biotech products and U.S. soybean products to manufacturers and processors of soy for use in food, feed, and oil.

**Performance Measures:**

- i. Through outside consulting, USSEC Europe will continue to be informed of developments related to the implementation of the EU's biotech regulations especially any issues covering the authorization of new biotech events and the political issues surrounding biotech approvals.
- ii. Provide opportunities for U.S. producers to discuss the benefits of biotech products and significance of U.S. soybean products to international industry and regulatory contacts.

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Committee – Target Area:**

- A. IM – Market Access

**Goal:**

- 1. Educate and inform global opinion leaders on the critical role biotech soybeans play in assuring economically and environmentally sustainable soy production system in the USA.

**Strategy 1:**

- a. Global Access

**Tactics:**

- i. Provide scientific data on U.S. pesticide, fungicide, herbicide use to address establishment of pesticide residue limits that do not hinder U.S. soy exports.

**Performance Measures:**

- i. Promote the sustainability of U.S. soy through key trade summits and events regarding global sustainable agriculture.

**Financial Allocations:**

IM – Global Access	<u>\$339,798</u>
Total:	\$339,798

**Program Staff Contact Information:**

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## Market Access Sustainability Initiative

### Market Environment

According to the United Nations, the world's population today is 6.5 billion. By the year 2025, there could be as many as 8 billion people to feed and clothe. Much of the population by this time will have standards of living that have significantly improved from current conditions, requiring more and different kinds of food. Production agriculture will need to produce as much food in the next 40-80 years as it has in the past 12,000 years in order to meet this demand.

At the same time, production agriculture will face additional pressures due to public and policy expectations that it remain economically viable, improve environmental performance and further enhance the well-being of communities and stakeholders.

Numerous organizations, agencies, universities and governments are addressing these pressures under the heading of sustainable agriculture. Production agriculture's use of natural resources, and its contributions to quality of life, rural character, biodiversity and greenhouse gas reductions have been the subject of more than 20 indices in the past five years. Other endeavors have defined narrow sets of acceptable agronomic practices for producers to implement.

In the near-term, the issues associated with sustainable agriculture will affect the profitability of the U.S. soybean industry in three ways:

**The expansion or contraction of markets:** Sustainability criteria are being and will be used to enhance or erode market access for U.S. soybeans. The European Commission has passed a renewable fuels directive that includes greenhouse gas (GHG) emission criteria; these criteria strongly discourage the use of soy-based biodiesel as a renewable fuel in Europe. The U.S. dairy industry has set a goal of reducing GHG emissions by 25% by the year 2020, and will encourage the use of feed sources that best help the industry meet this sustainability target. The energy input of soybean meal in aquaculture (compared to fish meal) is discouraging some key retail groups from fully supporting a transition to soybean meal.

**Input costs:** NGOs and government agencies are accelerating efforts to internalize "external" production costs, such as environmental impacts, social ramifications, and health considerations. GHG emissions regulation, water quality regulation, and biodiversity incentives are just a few approaches currently being explored to internalize external production costs. If successful, these efforts are likely to increase farm input costs, from mineral nutrients to seeds, from fuels to crop protection products. For example, a Doane Advisory Services study suggests that soybean production costs could increase approximately eight percent as a direct result of cap-and-trade carbon legislation.

**Ecosystem services and markets:** Debate about how to incentivize production agriculture to improve sustainability performance has led to the development of new sources of revenue for growers. A new office established within the USDA will work with the Natural Resources Conservation Service office to expand current subsidies that reward growers for sustainability performance (for example, CRP). The USDA recently

announced \$50 million in funding to support growers transitioning to organic methods. By assigning a dollar value to elements such as fresh water, biodiversity, biomass, carbon, etc., sustainable agriculture is creating incremental revenue opportunities for growers. Nevertheless, these opportunities need to be carefully developed in order to ensure agriculture remains primarily focused on providing food, feed, fiber and fuel, and to a lesser extent on providing ecosystem services.

### **Strategic Approach**

The Sustainability Initiative's strategic approach is focused on delivering the maximum value to U.S. soybean grower profitability. It is best articulated in the internal USB sustainability goal: *define and implement sustainable initiatives for the benefit of the U.S. soy industry while maintaining the social license to be the global supplier of choice.*

USB will achieve this through several strategic themes:

Advancing soy sustainability – improving the sustainability performance of U.S. soybeans through agronomic practices and science-based mechanisms that accurately and realistically measure the impacts of soybean agriculture.

Engaging with influencers – collaborating with the food, feed, fiber and fuel markets, as well as other stakeholders, to ensure that the sustainable performance of U.S. soybeans addresses real market needs.

Telling our story – educating the food, feed, fiber and fuel markets on how U.S. soybeans meet their needs for sustainable supply.

This strategy creates a four-step approach that will deliver the maximum value to U.S. soybean grower profitability:

1. Identify gaps in the marketplace's understanding of sustainable agriculture and align soybean sustainability data to fill these gaps
2. Build the data that confirms U.S. soybean sustainability
3. Show key markets how U.S. soybeans can help them meet their sustainability goals
4. Make the case for high value U.S. soybeans

### **Ability to Impact**

The U.S. soybean industry has advanced its discussion and consideration of sustainability ahead of most of production agriculture. USB has a definition of sustainability as it applies to soybean production, as well as three main goals that direct its work in this area. USB is supporting science-based efforts to measure the sustainability performance of U.S. soybeans, and state soybean boards have accumulated significant amounts of data that inform and validate these measurements. USB is nearing completion of an updated Life Cycle Inventory study for soybean production, while other groups such as dairy and pork are just beginning this process and other commodity row crops have not yet started this important exercise. In short, the U.S. soybean industry has taken a leadership position on this issue and has earned significant credibility.

Beyond the special credibility of U.S. soybean growers, production agriculture in general has a legitimate ability to impact the market expansion/contraction, input costs and

ecosystem services that will affect producer profitability. More than 80 percent of consumers trust farmers regarding sustainable practices. Sustainable agriculture standards currently in development are consistently seeking producer input, and those that eschew it are being marginalized even by the most liberal NGOs. This underlying credibility further strengthens the voice of the soybean industry during the development of standards and initiatives.

Finally, the sustainability performance of U.S. soybeans is very good. While planted acres of soybeans have increased between 1987 and 2007, energy use per acre has decreased 48 percent; soil loss per acre has decreased 31 percent; and GHG emissions per acre have decreased 14 percent. The credibility of the U.S. soybean industry and its ability to impact this issue is reinforced not only by USB's commitment, but by the on-the-farm performance of the industry.

**LRSP Objective 1:**

I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

**Goal:**

1. Engage the value chain to promote sustainable practices that reflect a unique shared platform.

A. Market Access – Sustainability Initiative

**Strategy 1:**

a. Champion the U.S. soybean position with existing initiatives/standards

**Tactics:**

- i. Participate in Keystone Field to Market
- ii. Contribute to the development of the Roundtable on Responsible Soy standard
- iii. Monitor development of the ANSI/Leonardo Academy sustainable agriculture standard
- iv. Participate in the Roundtable on Sustainable Biofuels
- v. Monitor development of other sustainable agriculture standards and evaluate for the necessary level of involvement/participation

**Performance Measures:**

- i. Keystone Field to Market is referenced and modeled in the development of other sustainable agriculture standards
- ii. All relevant standards receive input from the U.S. soybean industry as necessary and are developed in a way that is favorable to U.S. soy production

**Strategy 2:**

b. Provide the food chain with data that can inform how sustainable supply chains are measured and ensure that U.S. soybeans remain a supplier of choice

**Tactics:**

- i. Research and evaluate the metrics and indicators that the food chain is using to measure the sustainability of supply chains
- ii. Coordinate with QSSBs to leverage data that can support U.S. soybeans as a preferred product
- iii. Contribute to the development of sustainability metrics with key food chain groups, such as Wal-Mart, GMA and FMI

**Performance Measures:**

- i. Identify two sustainability indicators within the food chain where U.S. soybeans can capture value as a preferred product
- ii. Make one presentation about U.S. soybean sustainability performance at an event sponsored or organized by Wal-Mart, GMA or FMI
- iii. Identify and begin work on two data gaps regarding soybean sustainability performance

**Goal:**

- 2. Establish the USB soybean sustainability position as an accepted global definition, complementary to efforts of agriculture industry allies.

**Strategy 1:**

- a. Promote soy as resourceful and responsible agriculture

**Tactics:**

- i. Support updates/revisions of documents from CAST and CTIC that highlight benefits of contemporary soybean agriculture
- ii. Utilize social media tactics to emphasize the benefits of contemporary soybean agriculture
- iii. Research and evaluate the sustainable agriculture initiatives in place or under development by domestic and international governments, and prepare briefing materials that demonstrate how U.S. soybeans meet or exceed sustainability performance requirements

**Performance Measures:**

- i. Updated/revised publications referenced in 20% of relevant peer reviewed articles in 2010
- ii. 50% increase in uptake of social media messages from three months after launch to nine months after launch

**Strategy 2:**

- b. Insulate soybeans from being de-selected for specific applications

**Tactics:**

- i. Provide alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel compared to petroleum fuels
- ii. Provide alternative data and methodologies for determining the energy input of soy meal in aquaculture
- iii. Provide an alternative methodology for calculating indirect land use related to soy in biofuels

**Performance Measures:**

- i. European Commission consideration of alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel in its renewable fuels directive
- ii. One major seafood/retail organization adopts a dataset or methodology espoused by USB for determining the energy input of soy meal in aquaculture

**LRSP Objective 3:**

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

**Goal:**

- 1. Establish science-based mechanisms for assessing baselines and progress that enable continual improvements in sustainability measures by the U.S. soy value chain.

**Strategy 1:**

- a. Utilize and develop science-based metrics

**Tactics:**

- i. Provide alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel compared to petroleum fuels
- ii. Provide alternative data and methodologies for determining the energy input of soy meal in aquaculture
- iii. Provide an alternative methodology for calculating indirect land use related to soy in biofuels
- iv. Support Keystone Field to Market efforts to develop indicators for water quality, biodiversity, and socio-economic factors
- v. Identify undeveloped indicators that would be highly favorable to soybeans, and begin developing those indicators

**Performance Measures:**

- i. Generate, and submit for peer review, data and methodology on energy input of soy meal in aquaculture
- ii. Generate, and submit for peer review, data and methodology on the impact of indirect land use in soy-based biodiesel

**Strategy 2:**

- b. Enhance farm efficiency and soy sustainability performance

**Tactics:**

- i. Explore data collection opportunities, perhaps cooperating with existing QSSB work, that will be a cornerstone of best practice resources
- ii. Support the development of the Keystone Field to Market Fieldprint Calculator as a resource for scenario planning

**Performance Measures:**

- i. 50% user return rate with the Keystone Field to Market Fieldprint Calculator
- ii. One completed study that examines a set of production practices and their resultant impacts on a selected sustainability indicator (e.g., timing of crop protection applications and resultant impact on water quality)
- iii. Methods for collecting and housing data have been identified

**Strategy 3:**

- c. Articulate the social sustainability benefits of soybeans with enhanced nutritional traits

**Tactics:**

- i. Collaborate with the Domestic Marketing Committee on efforts to promote soybeans with enhanced nutritional traits – for both food and feed applications
- ii. Understand any sustainability trade-offs with enhanced nutritional trait soybeans, as a first step to measuring an environmental impact/nutritional content ratio

**Performance Measures:**

- i. One completed study showing how the environmental impact/nutritional content ratio of soybean agriculture can meet market needs for quality product combined with high sustainability performance

**Goal:**

- 2. Establish the USB soybean sustainability position as an accepted global definition, complementary to efforts of agriculture industry allies.

**Strategy 1:**

- a. Build a foundation around feeding the world

**Tactics:**

- i. Meet with food industry leaders, including brand owners and GMA, to discuss how increasing soybean yields are helping to satisfy both food and fuel needs
- ii. Develop indicators that reflect the productivity of U.S. soybean agriculture

**Performance Measures:**

- i. One meeting with GMA leaders/board members to discuss GMA position on food vs. fuel
- ii. Incorporation of a total-farm-yield metric in selected sustainability standards

**Strategy 2:**

- b. Create a unique and individual story for U.S. soy, with connections to the broader agriculture value chain

**Tactics:**

- i. Leverage Keystone Field to Market data into a soybean-specific publication that discusses how soybean yields in the U.S. are increasing, while resource efficiency is also increasing
- ii. Evaluate the risk/reward of establishing sustainability performance goals for the U.S. soybean industry, in congruence with the goals established by the broader agriculture value chain (e.g., dairy)
- iii. Write a white paper to explore various sustainable agriculture initiatives within production agriculture, and identify areas where USB can effectively engage to generate value for U.S. soybean growers

**Performance Measures:**

- i. One publication based on Keystone Field to Market data that is customized to show specific performance of U.S. soybeans

**Strategy 3:**

- c. Enhance the image of soy as humanity's partner

**Tactics:**

- i. Build a social media presence that highlights the specific sustainability performance of U.S. soybeans and the benefits of contemporary soybean agriculture
- ii. Where appropriate, work with Communications Committee to utilize traditional media vehicles to promulgate the USB sustainability definition and goals
- iii. Incorporate sustainability elements into the annual Consumer Attitudes Study conducted by the Domestic Marketing Committee

**Performance Measures:**

- i. 50% increase in uptake of social media messages from three months after launch to nine months after launch
- ii. Establishment of a baseline for consumer awareness of U.S. soybean industry sustainability; the baseline will be used to assess improvements in future years

**Financial Allocations:**

Sustainability Initiative: \$1,238,370

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## **Market Access Biotechnology Initiative**

### **Market Environment**

Plant biotechnology has played a key role in feeding and fueling a growing planet since the technology was commercialized over a decade ago. Corn yields are 33 percent higher than they were in 1996, and soybean yields have increased 16 percent during that same time period. This huge productivity gain has enabled countries such as the U.S., the largest user of biotech crops, to feed more people in an environmentally sustainable manner.

For example, the current generation of biotech has enabled farmers to use fewer chemicals and adopt reduced tillage conservation techniques. And the next generation promises to help plants resist drought and better utilize other critical nutrients. In addition, biotechnology has helped facilitate the birth of a new rural economy in America that is powered by biofuels and other value-added agricultural endeavors that have been made possible by a thriving ag economy.

The good news is that ag biotech adoption is making progress around the globe. In 2008, a total of 309 million acres of biotech crops were planted in 25 countries by more than 13 million farmers. Notably, 90 percent, or 12 million, are resource-poor farmers in 15 developing countries.

The European Union (EU) has significant credibility among critical overseas markets relative to its position on biotechnology. Efforts of many within the soybean value chain have resulted in a significant shift in attitudes regarding biotechnology among EU food and feed industry stakeholders. However, in light of the numerous biotech traits in the pipeline, it is critical that work continues to leverage and support the efforts by EU stakeholders to educate EU influencers to further promote a positive shift in attitudes toward ag biotech. This is so even for biotech crops that could be cultivated in the EU given the widespread rejection of cultivation by many member states. Soy is grown on a limited acreage in Europe but there are concerns among EU stakeholders that mounting opposition to cultivation could drag import approvals down also.

### **Strategic Approach**

Within the Biotechnology Initiative, there are three major strategic focus areas: 1) assess the level of biotech acceptance from a global perspective, which focuses on numerous overseas markets and involves continual monitoring of issues, trends and shifts in attitudes, and also allows for a global view of the biotech arena, which will help USB position itself as the leader in biotech adoption and acceptance efforts by knowing where to focus activities; 2) create unique educational platforms to drive acceptance of biotechnology and demonstrate the benefits of biotechnology among various target audiences; and 3) focus on outreach efforts to domestic and international audiences to drive confidence in agricultural biotechnology.

### **Ability to Impact**

There are approximately 12 key biotechnology soybean traits that could be commercialized within the next five to seven years, including drought resistance, improved nitrogen efficiency, mid- and high-oleic oil, high-stearic oil, Omega-3 oil, and others. Therefore, it is crucial that adoption and acceptance of ag biotechnology does not become a limiting factor in order to differentiate these products from commodity soybeans.

Acceptance of ag biotech products in the European Union (EU) consists of two different aspects. The European officials and politicians (both at European Commission/Parliament level

in Brussels and in the individual 27 member states) are looking for solutions as a result of recent public entreaties from the European feed and livestock sectors to somehow 'fix' the delays in the EU's biotech approvals system as well as find a solution to the zero tolerance for unapproved-in-EU biotech events. These issues gained the attention of officials when it seemed likely that the Roundup Ready #2 soybean trait would be commercialized before EU approval. Those EU industry entreaties were one of the direct results of the campaign of U.S. soybean farmer-leader trips and dissemination of USSEC ag biotech informational documents across 21 of the EU's 27 countries during FY08. However, with new traits coming forward and these issues not yet 'fixed', it is critical to maintain educational momentum given that there also will be European Parliament elections in June 2009 that will bring many new politicians to that institution who will be unfamiliar with the issues at the Brussels level.

Simultaneously, the European Commission's own EU-wide survey of 27,000 of its citizens reveals that a large fraction of EU citizens feel they simply don't know enough about ag biotech to make an informed decision. Thus, their perceived reluctance on "GMOs" could be changed if they were provided with facts showing that biotech crops could positively impact important issues they care about, such as reducing climate change and preventing ruinously high food prices. Indirect proof of that concept is provided by the fact that Australian government citizen surveys recently revealed that providing them with information regarding the ability of biotech crops to help alleviate some of Australia's and the world's perceived most-pressing problems resulted in the Australian public switching to a more pro-ag biotech position. Pressure from NGOs on politicians and misleading communications to the public over the past decade has resulted in significant delays in approval of new biotech events. A key to future success is information to address new biotech traits, and the resulting benefit of helping to feed the world while maintaining economic viability in local markets. Information such as this potentially allows for the EU political system to modify its regulatory process in a balanced manner to address social concerns with new technology.

Globally, biotechnology adoption and acceptance is promising, but it is incumbent upon the supply chain to ensure that regulatory approvals are in place. In order to meet food production goals for the projected global population of nearly 8 billion by 2020, biotechnology is required.

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Approval in the importing countries that comprise 90 percent of U.S. soy products for each biotech event by the time of its commercialization.
  - A. Market Access – Biotechnology Initiative
    - 1. Assess current global biotechnology market through an environmental scan to identify potential areas of opportunity for promotion of biotechnology benefits, and determine ways to approach shifting attitudes toward biotech in targeted countries to garner acceptance of biotech traits globally.
      - a. Biotechnology Initiative

**Tactics:**

- i. Perform updates to global environmental scan in 14 key soybean markets to determine ongoing understanding of issues and opportunities in biotech acceptance
- ii. Identify and confirm key influencers in each targeted region
- iii. Develop reporting system using tailored matrix for at-a-glance tracking and overview of current issues status
- iv. Conduct surveys of key opinion formers to gauge shifts in market behavior regarding biotechnology acceptance
- v. Monitor relevant industry organizations, governments, news wire services and trade and business media
- vi. Provide recommendations regarding potential actions to promote biotech acceptance in key markets

**Performance Measures:**

- i. Benchmarks established in target markets regarding level of biotech acceptance
  - ii. Programs determined to influence opinions on biotech and increase level of biotech acceptance
  - iii. Potential changing market opinions and ways in which USB can complement industry efforts for biotech adoption identified
  - iv. Key influencers and collaborators/alliances identified
  - v. Key influencers and collaborators/alliances engaged in biotech acceptance efforts in key markets
2. Establish unique educational platforms to drive acceptance and promote benefits of biotechnology on a global scale, and to position USB as the leader in global soy biotech acceptance efforts.

a. Biotechnology Initiative

**Tactics:**

- i. Work with the Council for Agricultural Science and Technology (CAST) to develop special publication comparing environmental impacts of various soybean production systems
- ii. Create abridged version of CAST report in a concise and reader-friendly format, including translation into eight languages, available for mass distribution to target audiences
- iii. Produce international brochure on agricultural biotechnology, specifically regarding the positive impact of biotech on agriculture, health and the environment, and make brochure available in 13 different languages based on input from USB and USSEC
- iv. Identify and assess relevant collateral materials for review for purposes of revising and upgrading communications vehicles on biotech acceptance to ensure consistent messaging and ease of use
- v. Create biotech education platforms to reach various audiences for purposes of positioning USB as the global leader in biotech acceptance efforts
- vi. Develop communications materials in support of biotech education that demonstrate the benefits of biotechnology, especially the use of biotech to provide sustainable and healthy food and feed to a growing world population
- vii. Collaborate with World Food Prize organization on biotechnology forum
- viii. Assess appropriate communications platform for biotechnology educational tool at World Food Prize Hall of Laureates

- ix. Develop maintenance approach of educational tool once communications platform is established
- x. Develop pilot program aimed at key regulators to foster a new era of knowledge on ag biotech risks and regulatory assessments
- xi. Create educational program for journalism students to increase awareness of the benefits of biotechnology, and nurture future advocates for ag biotech within print and broadcast media

**Performance Measures:**

- i. Special publication comparing environmental impacts of various soybean production systems created and published
  - ii. Benchmark USB's position as a leader in global soy biotech acceptance efforts through implementation of various communications platforms
  - iii. Brochure created, printed and distributed to key audiences in targeted overseas markets
  - iv. Collateral materials disseminated to key audiences during farmer-leader missions and speaking opportunities
  - v. Biotech education curriculum plan developed for targeted audiences
  - vi. Complete assessment of appropriate format for educational materials at World Food Prize Hall of Laureates
  - vii. Benchmark number of annual visitors to World Food Prize Hall of Laureates to demonstrate establishment of U.S. soybean growers as leaders in meeting the challenge of a growing population through scientific-based technology and USB's reach of message
  - viii. Biotech compendium abridged for cost-effective mass distribution to targeted audiences
  - ix. Biotech regulations pilot program developed and implemented with target audiences, such as university students, scientists, regulators, government influencers, research institutes, and private companies
  - x. Future biotech advocates identified within university journalism programs through implementation of biotech educational efforts
3. Utilize USB farmer-leader outreach opportunities to drive confidence in agricultural biotechnology with key overseas markets.
- a. Biotechnology Initiative

**Tactics:**

- i. Identify biotech-related research studies and provide to select audiences in a cost-effective format
- ii. Establish credible and sustainable 'farmer voice' among overseas markets regarding the use of biotechnology relative to sustainability and operational efficiencies
- iii. Develop program of meetings and/or events with media; seek to implement roundtable meetings where possible
- iv. Host team of European producers on a tour of select U.S. agricultural sites
- v. Facilitate panel discussion on biotechnology for targeted future agricultural leaders in countries that remain resistant to biotechnology
- vi. Collaborate with World Food Prize organization on biotechnology forum
- vii. Assess appropriate communications platform for biotechnology educational tool at World Food Prize Hall of Laureates

- viii. Develop maintenance approach of educational tool once communications platform is established
- ix. Create biotechnology subpage as part of the USB Web site
- x. Promote biotech subpage as centralized information source for both domestic and international audiences

**Performance Measures:**

- i. Secure opportunities for USB director-led mission in identified countries or regions to support benefits of biotechnology
- ii. Deliver series of meetings and briefings with key audiences
- iii. Maintain ongoing dissemination of material and information to key contacts
- iv. Educate key European agricultural producers on the benefits of biotechnology to rural economic development and the environment
- v. Develop a cadre of European spokespersons to advocate for biotechnology in their homeland
- vi. Gather information and messages from European producers that will enable the U.S. soybean industry to more effectively communicate and cooperate with the European markets
- vii. Complete assessment of appropriate format for educational materials at World Food Prize Hall of Laureates
- viii. Benchmark number of annual visitors to World Food Prize Hall of Laureates to demonstrate establishment of U.S. soybean growers as leaders in meeting the challenge of a growing population through scientific-based technology and USB's reach of message
- ix. Biotech subpage created and housed on USB Web site
- x. Biotech subpage promoted to domestic and international audiences as central hub of information on biotechnology issues

**Financial Allocations:**

**Biotechnology Initiative: \$1,110,012**

## **Compliance and Evaluation Audit and Evaluation Committee**

### **Market Environment**

The Soybean Promotion Research and Consumer Information Act, Order and the accompanying documents specifically lay out the fiduciary responsibilities in administering checkoff funds. USB is required by this federal legislation to ensure that all checkoff funds are used in accordance with the law. Qualified State Soybean Boards are authorized to collect and expend funds under the Act and Order and are subject to annual review by USB. Primary contractors and subcontractors to USB are required to expend funds in accordance with the Act and Order and USB Policy. All checkoff programs are coming under increasing scrutiny. In this environment, the soybean checkoff aims to maintain the highest level of compliance with SPARC and strong internal controls to protect farmer checkoff dollars. This year, the investment of millions of dollars in soybean checkoff revenues for the purposes specified in the soybean Promotion and Consumer Information Act will be made by the United Soybean Board. It is extremely crucial that the United Soybean Board maintain the utmost integrity in their investment and policy decisions.

### **Strategic Approach**

The Audit & Evaluation Committee will continue to set a proactive tone in the compliance and evaluation areas on behalf of the soybean checkoff. The committee will seek programs that provide compliance education and information to farmer leaders and staff at both the state and national level. In FY 2010, USB will pursue outreach through educational programs, resources and compliance testing in an effort to improve compliance knowledge and develop strong board fiduciaries.

### **Ability to Impact**

The committee will continue to ensure that the board upholds the highest standards in targeting checkoff investments in projects and programs that will result in the best return-on-investment. Evaluations and tracking tools will be employed as a mechanism to help the farmer leaders and staff make sound decisions on programs, policies and resource allocation.

### **LRSP Objective 1:**

- I. Annual Utilization for 3.5 billion bushels of U.S. soybeans by 2011

### **Committee – Target Area:**

- A. Audit and Evaluation - Compliance and Evaluation

### **Goal 1:**

1. Overcome a lack of knowledge regarding SPARC and USB compliance requirements.

### **Strategy 1:**

- a. Provide accurate compliance information to all QSSB's and USB directors annually.

### **Tactics:**

- i. Update and distribute compliance manual to all QSSB's and USB directors as needed.

**Performance Measures:**

- i. Provide accurate compliance information to all QSSBs and USB Directors on an as needed basis.
  
- b. Provide national and state compliance educational opportunities for QSSBs and USB.

Tactics:

- i. Hold one compliance workshop a year open to all QSSB staff and directors.

**Performance Measures:**

- i. Provide national educational opportunities and multiple individual state educational opportunities for QSSBs and USB which generate a 25 percent increase in overall contacts with state staff and farmer leaders.

**Goal 2:**

- 2. Ensure the proper internal controls and contractual provisions are utilized and implemented by USB contractors and subcontractors.

**Strategy 2:**

- c. Have procedures in place that will successfully implement proper internal controls and contractual provisions.

Tactics:

- i. Compliance reviews of 5-7 QSSBs within the year.
- ii. Personal contact with all QSSBs on compliance issues and management tactics as well as personal visits by the Compliance Coordinator.
- iii. Audits of primary contractors and subcontractors.

**Performance Measures**

- i. Compliance reviews of 5-7 QSSBs successfully completed within the year with no outstanding issues, and those audits cleared by USDA.
- ii. Personal contact with all 29 QSSBs on compliance issues and management tactics that result in more positive evaluations of USB performance on the annual survey as well as a 15 percent positive increase in the approval rating of the Compliance Program.
- iii. Audits of primary and subcontractors will identify any compliance or contractual issues and reach resolution on all findings.

**Goal 3**

- 3. Protect the integrity of checkoff funds and maximize the return on the USB checkoff investments.

**Strategy 3:**

- d. Have effective evaluation tools in place to assure the maximum return on the USB checkoff investments.

Tactics:

- i. Use of objective external evaluations as a decision-making tool to analyze and track the impact and effectiveness of the Board's processes and projects, trends and emerging issues.
- ii. Evaluation of a Return on Investment Audit required every five years by the Act and Order.

- iii. Evaluation results of the 2009 See For Yourself project for future facilitation.
- iv. The committee will facilitate an in depth review of the See For Yourself project including information gathered from all participants in general and from the participants pre and post surveys in particular with emphasis on methods of evaluation and added value.

**Performance Measures:**

- i. Evaluations will be reviewed by all related committees or the Board, with 50% of the recommendations adopted either in total or in part.
- ii. The track record of acceptance will be maintained and institutionalized so that the Board can utilize the information in the future.
- iii. Any new USB policies will be reviewed and approved by the Board and USDA-AMS.
- iv. Evaluations of programs conducted during the year that have relevance to all committees and to the USB Board will be distributed and all information relevant to the impact and effectiveness of the Board will be reviewed.

**Audit and Evaluation Financial Allocation:            \$1,075,858**

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