

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Field Crops--Global Food Security and Hunger

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	5%		4%	
102	Soil, Plant, Water, Nutrient Relationships	5%		11%	
103	Management of Saline and Sodic Soils and Salinity	0%		2%	
111	Conservation and Efficient Use of Water	0%		2%	
136	Conservation of Biological Diversity	0%		2%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		4%	
202	Plant Genetic Resources	0%		3%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
204	Plant Product Quality and Utility (Preharvest)	5%		9%	
205	Plant Management Systems	50%		10%	
206	Basic Plant Biology	0%		1%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		8%	
212	Pathogens and Nematodes Affecting Plants	5%		16%	
213	Weeds Affecting Plants	5%		11%	
215	Biological Control of Pests Affecting Plants	0%		1%	
216	Integrated Pest Management Systems	10%		7%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
601	Economics of Agricultural Production and Farm Management	5%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Extension	Research
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Year: 2013	1862	1890	1862	1890
Actual Paid Professional	31.4	0.0	41.7	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
804242	0	1345459	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
804242	0	1345459	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1210918	0	9353143	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The LSU AgCenter strives to serve a very diverse food and fiber sector in the state of Louisiana. With the farm gate value of plant-based enterprises in the state exceeding \$6.5 billion in 2012, the importance of agriculture as an economic driver in the state is evident. This is particularly evident in regions of the state in which production agriculture, and more specifically, row crop agriculture, is the single largest segment of those rural economies. To ensure the economic well-being of the agricultural industry and its ability to continue to be a major contributor to the state's economy, the LSU AgCenter provides a variety of educational opportunities and research based information to row-crop operations to assist them in making better production, environmental, and financial decisions. Additionally, the LSU AgCenter continues to lead the way in developing best management practices to ensure the environmental impact from production agriculture is minimized. Educational opportunities and information in the areas of financial management, risk management, and marketing are also conducted.

Educational activities utilize group and individual methods; mass media; research studies; result demonstrations; field days and social media tools such as Facebook, blogs, Twitter and YouTube. Decision support tools such as Smart Phone apps and spreadsheets have sparked interest among producers. Each component of the program is designed to provide producers with valuable information to help them make decisions that will result in increased yield, reduced costs, increased revenues, and to mitigate environmental impacts.

This year, the **soybean and wheat program** was evaluated during our four-year base program evaluation process. The data from that evaluation is included in the Outcomes Section of this report.

2. Brief description of the target audience

Approximately 6,500 growers with slightly over 3 million acres of land in production:

- **Cotton**--415 producers with 225,095 acres in production which produced 228 million pounds of cotton.
- **Feed grains**--1,700 producers with 650,000 acres in production who produced 103 million bushels of feed grains, including corn, grain sorghum and oats.
- **Rice**--1,030 producers with 391,000 acres in production who produced 2.6 billion pounds of rice.
- **Soybeans**--2,300 producers with 1.12 million acres in production who produced 50 million bushels of soybeans.
- **Sugarcane**--480 producers with 427,000 acres in production who produced 1.7 million tons (3.4 billion pounds) of raw sugar and 102 million gallons of molasses.
- **Sweet potatoes**--50 producers with 9,700 acres in production who produced 3.9 million bushels of sweet potatoes.
- **Wheat**--530 producers with 256,000 acres in production who produced 14.8 million bushels of wheat.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	112001	388725	14509	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2013
Actual: 3

Patents listed

Device for Turbulence Reduction
Rice Cultivar Designated CL152
Abiotic Stress Resistance

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	32	119	151

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	3003209

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	2456575

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased profitability and sustainability of Louisiana crops and cropping systems.

Outcome #1

1. Outcome Measures

Increased profitability and sustainability of Louisiana crops and cropping systems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2012, average soybean yields in Louisiana were a record 46 bushels per acre, more than 6 bushels higher than the 5-year average. In 2013, producers planted 1.12 million acres of soybeans and generated a state average yield of 48 bushels per acre. Over the last several years, a significant number of cotton and rice acres have been shifted into soybeans. In addition to this shift from competing crops, soybean acres have increased in non-traditional areas. Winter wheat yields for 2013 averaged 58 bushels in Louisiana. This yield produced a 9 bushel per acre increase over 2012 and was 3 bushels higher than the five-year average. Given the generally successful 2013 harvest, some anticipation existed for winter wheat acres planted in Louisiana to approach the 260,000 acres planted in 2012 and harvested in 2013. However, the price outlook for winter wheat during the fall of 2013 was down significantly from the previous year. As a result, winter wheat acres fell to 160,000 acres in the fall of 2013, down 100,000 acres from the previous year.

What has been done

The LSU AgCenter has an ongoing soybean educational program whereby county agents visit farms to counsel producers on specific problems, organize grower groups, plan field days, and establish demonstrations to disseminate information on the latest production technology. LSU AgCenter personnel use web based materials, written materials, and radio and television programs to reach producers and other users of soybean crop information. It is believed that the LSU AgCenter plays a major role in influencing the decisions of producers regarding various management practices involving soybean production. This influence is monitored periodically at advisory meetings by the LSU AgCenter to provide better educational programs to stakeholders and was formally evaluated statewide during this reporting period in the AgCenter's four-year base program evaluation process.

Results

On average, 92% of the respondents in the base program evaluation have adopted most of the 10 research-based practices that have been emphasized in extension education programs and another 6.6% are considering adoption. Among the most frequently adopted practices are: using herbicide for weed control (100%); using optimum seeding rates (99.3%); using fungicides for disease control (97%); soil testing (96.3%); planting certified varieties (95.6%) and planting during optimum planting dates (95.6%). Adopted, but not as frequently, were the practices of: using reduced tillage operations (73.7%); fertilizing according to soil test (81.8%) and using a record keeping system (89.6%)

Farmer's adoption of LSU AgCenter research-based information has contributed to increase yields and profitability. The increased production in 2013 on 1.12 million acres of soybeans resulted in an \$89 million increase in revenue to the farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
136	Conservation of Biological Diversity
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
206	Basic Plant Biology
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An evaluation was conducted and summarized in 2014. The evaluation was sent via email to soybean and wheat producers, crop consultants, among others in the sugarcane growing region of south Louisiana. A total of 216 evaluations were returned. Seventy percent of the respondents were growers, 12% were workers in governmental agencies, 11% were crop consultants, and 11% were others such as dealer representatives. Ninety-Eight percent of the growers produced soybeans and 37% wheat. Eighty percent operated farms that were greater than 500 acres in size; 77% of the growers had been farming for greater than 15 years; 73% of the total respondents were over 45 years old while 45% were over 55 years old; Twenty-nine parishes were included in the responses and 98% of the respondents were male. The following results indicated the percentage of producers that have adopted recommended soybean production best practices:

- 100% of the respondents use herbicide for weed control
- 99.3% use optimum seeding rates
- 96.3% soil test
- 95.6% plant certified varieties

On average, a total of 92% of the respondents have adopted research-based practices that have been emphasized in extension education programs, with another 6.6% considering adoption of these 10 research-based production practices.

Results also indicate that the LSU AgCenter plays a major role in influencing the decisions of most Louisiana soybean and wheat producers. It is vital therefore, that county agents and specialists continue to prioritize person-to-person contacts in the Louisiana soybean and wheat industries and continue to deliver high quality educational programs that are responsive to the needs of the producers. It is also apparent that as technology becomes increasingly available, electronic information delivery will continue to increase in importance. Agents, specialists, and researchers must continue to build strong working relationships with crop consultants.

Key Items of Evaluation