V(A). Planned Program (Summary)

Program # 3

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%		5%	
102	Soil, Plant, Water, Nutrient Relationships	5%		5%	
136	Conservation of Biological Diversity	0%		5%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		5%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
204	Plant Product Quality and Utility (Preharvest)	0%		5%	
205	Plant Management Systems	60%		10%	
206	Basic Plant Biology	0%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	5%		10%	
213	Weeds Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	10%		10%	
601	Economics of Agricultural Production and Farm Management	0%		10%	
606	International Trade and Development	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890

Actual Paid Professional	36.0	0.0	47.6	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**
657049	0	1342792	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
657049	0	1342792	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
2313886	0	20518258	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

LSU AgCenter programs addressed yield, cultural practices, and pest management resulting in development of new varieties and integrated pest management strategies for Louisiana's major row crops. Educational activities include extension outreach using group and individual methods; and mass media; research studies; result demonstrations; and field days, all incorporating the latest technological advances and use of social media.

2. Brief description of the target audience

Approximately 6,000 growers with 2.8 million acres of land in production:

- **Cotton**--550 producers with 288,000 acres in production who produced 249 million pounds of cotton.
- **Feed grains**--1,700 producers with 700,000 acres in production who produced 86 million bushels of feed grains.
- **Rice**--1,050 producers with 417,000 acres in production who produced 2.8 billion pounds of rice.
- **Soybeans**--2,250 producers with 1 million acres in production who produced 38 million bushels of soybeans.
- **Sugarcane**--490 producers with 408,000 acres in production who produced 1.5 million tons (2.9 billion pounds) of raw sugar and 86 million gallons of molasses.
- **Sweet potatoes**--75 producers with 14,000 acres in production who produced 5.3 million bushels of sweet potatoes.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	139757	423746	13931	0

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

Patent Applications Submitted

Year: 2012

Actual: 2

Patents listed

Sweetpotato cultivar named "Bonita"
Rice Cultivar Designated 'CL152'

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	47	151	198

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Web page visits

Year	Actual
2012	2830415

Output #2

Output Measure

- Web page views

Year	Actual
2012	3481694

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
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana's diverse agronomic cropping systems contributed over $3.25 billion to the state economy in 2011. Major crops ranked from highest to lowest in total value include: sugarcane, soybeans, feed grains (including corn), rice, cotton, sweet potato, and wheat. Environmental and economic challenges affect profitability. Variability in soil fertility, adverse climatic conditions and intense pest pressures can negatively impact crop yields and decrease production efficiency. High input costs and commodity price instability is a recurring concern. Research and outreach initiatives related to variety development, plant nutrition, pest management, cultural practices, and farm management are necessary to sustain crop production, improve crop yields and quality, and to ultimately contribute to profitability and sustainability of agronomic crop infrastructure in Louisiana.

What has been done
LSU AgCenter programs addressed yield, cultural practices, and pest management resulting in development of new varieties and integrated pest management strategies. Fungicides were used successfully on over 100,000 acres of sugarcane for the control of brown rust, representing the first time fungicides were widely used for disease control in sugarcane. Plant breeding efforts focused on rice, sugarcane, wheat, and sweet potato. Varieties developed at the LSU AgCenter accounted for over 65% of the rice acreage, 51% of the sugarcane acreage 95% of the sweet potato acreage and 40% of the wheat acreage in Louisiana in 2012. In addition, one sweet potato variety and one rice variety were released in 2012. Producer meetings, field days, on-farm verification programs, and educational publications, including web based information and social media, were used to promote new technologies.

Results

Implementing recommended management practices for various pests resulted in direct economic savings to producers and reduced environmental impacts due to adoption of thresholds and integrated pest management strategies. Production of new varieties developed in Louisiana contributed to improved yields and quality and increased profitability. Precision agricultural technologies, conservation tillage, and improved management of crop residues also contributed to more sustainable cropping systems. The adoption of revised crop fertilization recommendations allowed growers to improve efficiencies, optimize yields and increase revenue. Collaborative extension and research efforts in the areas of weed, insect, and disease management provided growers with multidisciplinary integrated pest management, environmentally-sound options for managing target pests which improved cost efficiencies and maximized crop quality. Diverse and successful crop production supported the entirety of the agricultural infrastructure in Louisiana by contributing to job retention and growth on-farm, in marketing venues and with allied industries.

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
606	International Trade and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See qualitative impact report results section.

Key Items of Evaluation