V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

☑ 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
504	Home and Commercial Food Service	75%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%		30%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		40%	
723	Hazards to Human Health and Safety	10%		10%	
724	Healthy Lifestyle	15%		20%	
	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
Plan	2.0	0.0	4.0	0.0
Actual Paid Professional	2.7	0.0	2.7	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**
48758	0	63562	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
48758	0	63562	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
171708	0	942128	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Appropriate extension and research including result demonstrations, workshops, classes, certification programs, studies and effective use of a variety of media sources to address food safety-related issues.

2. Brief description of the target audience

Consumers, commercial seafood processors, children and food handlers including restaurateurs and food vendors

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	13493	366223	5975	0

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

Patent Applications Submitted

Year: 2012

Actual: 2

Patents listed

Rapid Assays for Detecting AdulterantShiga Toxin-Producing Escherichia Coli Serogroups

A Combined Purification and Enrichment Method for DHA Eidosapentaenoic (EPA) Docosahexaenoic

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	16	16

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals who received seafood, meat and poultry HACCP training

Year	Actual
2012	88

Output #2

Output Measure

- Number of individuals who received ServSafe training

Year	Actual
2012	45

Output #3

Output Measure

- Number of individuals who received Sanitation Control Protocol training

Year	Actual
2012	27

Output #4

Output Measure

- Number of individuals who received Better Process Control School training for canned and acidified foods

Year	Actual
2012	38

Output #5

Output Measure

- Number of Web page visits

Year	Actual
2012	28672

Output #6

Output Measure

- Number of Web page views

Year	Actual
2012	32934

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase awareness, knowledge and/or skills regarding safe food handling and preparation by both commercial and non-commercial entities.
2	Identify ways to minimize food safety threats related to Louisiana-produced food products through research.

Outcome #1

1. Outcome Measures

Increase awareness, knowledge and/or skills regarding safe food handling and preparation by both commercial and non-commercial entities.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Changes in food production, processing and distribution have increased the scope of foodborne illness outbreaks resulting in national and multi-national occurrences. Food safety misinformation may result in illness or adverse financial consequences. Certain commercial processors and food handlers are required to have certified food safety training. Processors need updating and new food processors need assistance.

What has been done
LSU AgCenter faculty responded to media and consumer information requests on foodborne illness outbreaks and seafood safety post BP oil spill. Faculty conducted certified training in Sanitation Control Protocol (SCP); Seafood, Meat and Poutry Hazard Analysis and Critical Control Points (HACCP); Better Process Control School (BPCS - canned and acidified foods); and food handling (ServSafe). Participants included: HACCP-88; SCP-27; BPCS-38; ServSafe-ca.45. Two public service announcements were aired on Cox Cable "Cooking Up Louisiana" between Thanksgiving and Christmas related to heating and cooling foods and transporting, holding and reheating food.

Results
Louisiana consumers (30,000) learned recommended food safety practices and an estimated 200,000 consumers gained food safety knowledge. Post-oil spill seafood education targeted seafood processors, area leaders and a delegation from China. Faculty assisted processors in correcting deficiencies and becoming regulatory compliant. Processors were informed about new regulations and safety concerns pertinent for their facilities, especially the FDA Seafood Hazards Guide released in April, 2011. Entrepreneurs were helped to establish businesses. At least two of these entrepreneurs established a presence in regional grocery chains. Processors added new markets.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Identify ways to minimize food safety threats related to Louisiana-produced food products through research.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Noroviruses (Caliciviridae), Vibrio vulnificus and Vibrio parahaemolyticus are the leading cause of foodborne outbreaks in oysters. Generally, viral detection methodology is divided into two phases: (1) Estimating concentration of viruses in large volumes of water and (2) Detection of the concentrated virions, usually by molecular or cell culture methods. There is always a high consumer demand for oysters that are safe from pathogenic bacteria while retaining their quality. Cryogenic freezing provides a multitude of advantages. Combining cryogenic freezing with high barrier packaging could further reduce pathogenic Vibrio's in oyster meat as compared to traditional freezing techniques.

What has been done
Two real-time RT-PCR methods were evaluated for recovery of norovirus in the American Oyster (Crassostrea virginica). Additionally the reduction of Vibrio vulnificus and Vibrio parahaemolyticus also was investigated in gulf oyster meat treated with either liquid nitrogen freezing or blast-freezing.

Results

Low and variable recoveries were found for both real-time RT-PCR methods (4.4 ± 1.7 and 11.3 ± 2.8, P<0.05). The low recovery was probably due to matrix effect of the samples, and indicates the need for improving concentration methodology for detecting low copy numbers of norovirus in oysters. Liquid nitrogen reduced the load of both Vibrios species more than air-blast frozen after 30 days of storage. A liquid nitrogen technique could be used to reduce V. vulnificus and V. parahaemolyticus in oyster meats.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
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V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See qualitative impact reports results section.

Key Items of Evaluation