

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Food Safety - Food Safety, Science, Technology and Childhood Obesity (FOSTCO)

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
501	New and Improved Food Processing Technologies			10%	
502	New and Improved Food Products			15%	
503	Quality Maintenance in Storing and Marketing Food Products			20%	
701	Nutrient Composition of Food			40%	
702	Requirements and Function of Nutrients and Other Food Components			15%	
	Total			100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	2.5	0.0
Actual Paid Professional	0.0	0.0	1.2	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
0	0	72014	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	39195	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The mission of the FOSTCO program is to promote the quality of life and economic viability of the agricultural sector and rural communities by continuous improvement of current and development of new food and non-food products and their respective manufacturing and other related processes. In so doing, the Program considers such aspects as food safety, nutritional value, environmental impact, needs for education and information dissemination, consumer and industry support, and technology development, transfer and adaptation.

This past year faculty working on the evaluation and design of an extraction process to obtain essential oils that can be used commercially in the preparation of coffee cordials assessed a distillation process by infusion of gaseous alcohol in the sample of coffee. Tests performed indicated that this method is the most adequate to obtain high quality extracts with uniform intensity and very pleasant aroma. A seminar was also offered on the "Chemical characterization of Puerto Rican coffee" and was attended by approximately 40 people. In an effort to help the food industry in the improvement and development of new products, we collaborated with 13 industries that contacted us requiring assistance. Collaboration with the industry included chemical analysis of food, nutritional fact analysis, water activity determination and literature search. A research on nutrient composition of food was conducted in three non-traditional fruits from Puerto Rico for their potential use as nutraceutical ingredients. A project was also initiated on edible films and their application on food to prevent moisture loss and microbial deterioration. Educational programs were conducted in food safety and related topics and approximately 360 people attended the seminars. Four Master's Degree theses were published related to new product development and one on development of edible films.

2. Brief description of the target audience

- Academic Programs Faculty
 - Federal and State Agricultural Agencies (PRDA, USDA/APHIS, USDA/ARS, USDA/NRCS).
 - Food Industry representatives

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	0	0	0	0

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

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Courses, seminars and workshops offered on the topics covered by the Program

Year	Actual
2012	19

Output #2

Output Measure

- Number of projects or industry collaboration agreements established

Year	Actual
2012	13

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Total Number of Enterprises Impacted by the Program.
2	Food Manufacturing Exports in million dollars
3	Food Manufacturing Imports in million dollars.
4	Number of improvement or development projects focused on safety or nutritional aspects of product or production processes
5	Number of projects focusing on definition of quality parameters, including chemical properties, safety and nutritional value

Outcome #1

1. Outcome Measures

Total Number of Enterprises Impacted by the Program.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In Puerto Rico, the food industry is among the top growth industries that could lead the island out of its economic crisis. Total food sales represent about 25% of the island's \$35 billion annual retail sales and 15% of local consumer expenditure. The island produces only 15-20% of the food it consumes; nevertheless food products must be safe for human consumption. It is important for food producers to understand and implement food safety practices. Literature reports improper postharvest practices as a main contributor to product losses and quality deterioration. Puerto Rico producers must pay particular attention to post-harvest management and handling practices in order to seriously address food security issues.

What has been done

Chemical composition of 16 food products was determined by chemical analysis. In addition, nutritional fact information was developed for 20 new products. As part of the agreement between the Food Science and Technology Program and the Puerto Rico Industry Development Corporation (PRIDCO), some food industries requested our services. Approximately 19 seminars were conducted in food safety areas such as GMP, HACCP, and GAP. Projects were initiated on edible films using starch and preservatives and their application on food to prevent moisture loss and microbial deterioration

Results

Twenty food industries received technical support and most of them obtained the Health Department license for food production. Approximately 360 food industry employees (food processors and farmers) were trained in food safety. Projects on edible films provided data and experience to help the citrus industry in Puerto Rico.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
701	Nutrient Composition of Food

Outcome #2

1. Outcome Measures

Food Manufacturing Exports in million dollars

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Food Manufacturing Imports in million dollars.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of improvement or development projects focused on safety or nutritional aspects of product or production processes

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
701	Nutrient Composition of Food

Outcome #5

1. Outcome Measures

Number of projects focusing on definition of quality parameters, including chemical properties, safety and nutritional value

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
701	Nutrient Composition of Food

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

Brief Explanation

Economy - Puerto Rico is currently suffering the economic recession affecting the rest of the world. Although it is expected for the economy to pick up, as the recession prevails, the amount of funding available for investing in research or in new ventures will be limited.

Faculty working on the program are members of other academic departments; therefore, they need to address other issues as their respective programs so require. Thus, we have a pool of researchers who are constantly entering and leaving the program.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

No formal evaluation results are yet available for this program.

Key Items of Evaluation