

**V(A). Planned Program (Summary)**

**Program # 6**

**1. Name of the Planned Program**

Food Safety, Science and Technology

**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			33%	
502	New and Improved Food Products			37%	
503	Quality Maintenance in Storing and Marketing Food Products			5%	
504	Home and Commercial Food Service			10%	
701	Nutrient Composition of Food			15%	
	<b>Total</b>			100%	

**V(C). Planned Program (Inputs)**

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	1.7	0.0
Actual	0.0	0.0	2.7	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	57728	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	43578	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**

During 2010 Food Safety, Science, and Technology (FSST) participants continued with research and outreach activities as programmed. Researchers working on the design of more efficient methods to dry pergamino coffee and high quality coffee cordials constructed a laboratory-scaled dehydration unit that allows for the study of relative humidity of air in the dehydration patterns of parchment coffee. In addition, they are evaluating the extractive distillation method for the recovery of coffee aroma compounds in an ethanol-based solution. Projects geared to the development of new products based on local crops, such as the development of a fermented bread from cassava flour and a nutritional cream-cereal from pigeon peas, are already on a stage in which products are being evaluated on standard parameters and by sensory analysis.

At the same time, outreach activities geared to the local food industry have continued. More than 20 workshops have been offered on different aspects of food safety geared to different types of audiences: producers in the farm, processors and government officials. Several additional service contracts with local food industries were also established during the year. Program participants have also continued their search for external resources and have succeeded in some of the grant competitions.

**2. Brief description of the target audience**

- Extension Specialists and Agents
- Academic Programs Faculty
- Producers and Commodity Groups
- Consumers
- Federal and State Agricultural Agencies (PRDA, USDA/APHIS, USDA/ARS, USDA/NRCS).
  
- Food industry/Manufacturing

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	0	0	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2010  
 Plan: 0  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

<b>2010</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	0	2	
<b>Actual</b>	0	1	1

**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

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	2	20

**Output #2**

**Output Measure**

- Number of projects or industry collaboration agreements established

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	1	17

**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

**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	Quantitative Target	Actual
2010	30	50

**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
504	Home and Commercial Food Service
701	Nutrient Composition of Food

**Outcome #2**

**1. Outcome Measures**

Food Manufacturing Exports in million dollars

**2. Associated Institution Types**

- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	4943	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The program attempts to positively impact the island's food industry-related economy. One of the measures of said economy is the amount of goods exported. The rationale is that the more we support the industry, the stronger it becomes. As a result, local industry can shift from production for the local market only to production for satisfying both the local and international markets.

**What has been done**

Provide technical support in the form of training and services to ensure compliance with quality standards, federal regulations and quality system requirements. Support local industry and commodity groups in the development process of new production lines and products. Perform research in identified areas of need.

**Results**

The program is impacting many businesses, and those businesses are making adjustments. Although data on exports is not yet available, we believe that the program is making significant progress.

**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
504	Home and Commercial Food Service
701	Nutrient Composition of Food

### **Outcome #3**

#### **1. Outcome Measures**

Food Manufacturing Imports in million dollars

#### **2. Associated Institution Types**

- 1862 Research

#### **3a. Outcome Type:**

Change in Condition Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	2900	0

#### **3c. Qualitative Outcome or Impact Statement**

##### **Issue (Who cares and Why)**

The program strives to influence the local food industry. With a decline in farmland and agricultural related employment, imports continue to supply most of the island's food. By continually interacting with industry, the program strives to shift the market from importing goods to producing them.

##### **What has been done**

Provide technical support in the form of training and services to ensure compliance with quality standards, federal regulations and quality system requirements. support local industry and commodity groups in the development process of new production lines and products. Perform research in identified areas of need.

##### **Results**

It has been estimated that Puerto Rico imports about 85% of the total food supply requirement. We strive to move the industry to a position where it can play a more important role in the local supply chain. Businesses are starting to ask about implementation of HACCP and quality management systems. Such a wave should strengthen the industry. As a consequence, the industry should be better prepared to seek protective marketing policies and regulations.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service

701 Nutrient Composition of Food

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

#### **Brief Explanation**

The economy of Puerto Rico continues to suffer from the economic recession affecting the rest of the world. The amount of funding available to invest in research or in funding new ventures is limited. Program activities during 2010 were also affected by strikes and other situations affecting the access to university facilities.

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

- Other (Semiannual meetings)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}