

**DEVELOPMENT OF A FOOD SAFETY AND QUALITY CONTROLS SYSTEM FOR
PUERTO RICAN AGRICULTURAL PRODUCTS MARKETED THROUGH A
COLLECTIVE SALES AND DISTRIBUTION SYSTEM
FY 2008**

The Puerto Rico Department of Agriculture (PRDA) partnered with the Agricultural Sciences College of the University of Puerto Rico Mayagüez Campus to begin upgrading the quality and safety protocols of entities that participate in the Puerto Rico school lunch program and in a PRDA-operated food brand for Puerto Rican grown consumer food products (*Del Pais* brand). Program participants received group training and one-on-one support through site visits which covered Good Management Practices for post-harvest handling of fruits and vegetables, HACCP for fruit and vegetable processing, and quality management system implementation.

Following the training, 25 persons were HACCP certified by HACCP Alliance, and the PRDA has since developed a broader-focused training program that integrates food safety as one of its main themes, along with business planning. This pilot project helped: 1) increase awareness of the importance of addressing food safety to Puerto Rican agriculture and the food industry; 2) create a working alliance between the PRDA and academia; and 3) put food safety in the official spotlight for the PRDA.

FINAL REPORT

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Final Report

Development of a Food Safety and Quality Controls System For Puerto Rican Agricultural Products Marketed Through a Collective Sales and Distribution System

Grant Awarded by

Agricultural Marketing Service-USDA

Federal State Marketing Improvement Program

To the

Office of Brands and Integrated Marketing,

a division of the Integral Fund for Agricultural Development,

Subsidiary Corporation of the Puerto Rico Land Authority of the
Department of Agriculture of the Commonwealth of Puerto Rico

Report Presented to:

Janise Zygmunt, Staff Officer

Federal-State Marketing Improvement Program, USDA/AMS

1400 Independence Ave. SW Room 2646-S

Washington, DC 20250

Outline of the issue or problem

It is in the Public Interest to Provide Training in Food Safety and Quality Considerations and Assistance in Implementing Food Safety and Quality Protocols to Producers and Distributors of Fresh Fruit and Vegetables in Puerto Rico

The OMMI-FIDA Puerto Rico project contemplated development of conscience, training of responsible individuals, developing and implementing food safety and quality protocols in the channels that produce and handle fresh fruit and vegetables. It was aimed at individual production firms and institutional food network distribution hub operators. The project had the purpose of upgrading quality and safety protocols practiced by entities that participate in the Puerto Rico school lunch program and/or an Agriculture Department-owned brand that is managed to identify local products in the consumer market channels.

Development of food safety and quality perceptions has been proposed as a marketing tool to enhance product image for local agricultural production. Food safety is also a public interest issue because of increased awareness regarding threats to health that are posed by bacterial and chemical hazards that can be carried by food if additional precautions are not observed.

As an additional objective, OMMI-FIDA purported to assist commercial firms dedicated to production, consolidation and distribution of agricultural products in removing barriers that had arisen in their efforts to access particular retail outlets. The absence of acceptable safety and quality standards and programs for local products and among local producers has been presenting a barrier to entry into some major retailers (such as COSTCO) for many local products. Implementing safety and quality protocols and receiving the training conducive to proper management of such protocols is a step in the direction of a total upgrading of safety and quality through the local fruit and vegetable product line.

Goals and Objectives

1. Develop conscience of the importance of food safety practices in agricultural processors and packers focusing on fresh fruit and vegetables and impress upon them the urgency of developing the quality aspect as a marketing tool.
2. Train managers and officials in fruit and vegetable channels regarding basic aspects of GMP, SSOP, and Safe Quality Food.
3. Establish standards for written Food Safety Programs to be prepared by enterprises participating in sponsored procurement programs.
4. Ensure compliance with submittal and implementation of written Food Safety Programs.
5. Begin monitoring and follow-up of such programs.

6. Establish standards for written Quality Programs to be prepared by enterprises participating.
7. Presentation of first drafts of Written Quality Programs by individual firms.
8. Begin feedback and discussion of Quality Programs.

How the issue or problem was approached via the project.

The project management approached the issue via a two-phase strategy: 1) one classroom aspect for group training and 2) one mentorship aspect for one-on-one training per enterprise. In reality, to a certain degree, the mentorship aspect had to reproduce parts the group training aspect because of the necessity to give additional training to employee groups at each of the facilities. The mentorship aspect was to follow-up on the preparation of written protocols and procedures for sanitation and quality.

The Grantee, the Office of Brands and Integrated Marketing (OMMI, acronym in Spanish) ascribed to the Integral Fund for Agricultural Development of Puerto Rico is a local government agency under the Department of Agriculture of the Commonwealth of Puerto Rico dedicated to pursuing market access for local production. OMMI had originally embarked on a route toward safety and quality development and establishment of standards when in 2007 it created a job position and hired a Certified Food Technologist, Vanessa Mercucci, to work full time as part of OMMI staff and develop a program for enhancement of the quality aspect of sponsored firms. Due to the general lack of awareness among agricultural producers and officials alike regarding the food safety and quality aspects, it was quickly perceived that the job at hand was too large for just one person. It was envisioned that a classroom aspect was necessary to train groups of producers in basic principles to begin creating a greater awareness, stated otherwise: to promote a problem-recognition phase.

For this FSMIP project OMMI partnered with the Food Science and Technology Program (FSTP), an academic food safety and quality entity ascribed to the Agricultural Sciences College of the University of Puerto Rico Mayagüez Campus that possesses the necessary technical expertise and also the facilities at which to develop the proposed educational work. The group of persons engaged in this work had during several years been proactively linking academia to real-life production aspects and had been going off-campus to provide training and to teach various food industry groups the importance of proper handling of food intended for the consumer public.

The organizational aspect was further complemented within this same project through a mentorship phase, whereby OMMI contracted one Food Technology person to team with Vanessa Mercucci and focus on working individually with a number of producers on a one-on-one basis to encourage and assist in the development and adoption of formal programs by the individual enterprises and facilities. These formal programs could later be maintained through periodic monitoring of record-keeping and routine inspection visits.

OMMI, working with FSTP, proposed to upgrade quality and safety standards and by this means achieve enhanced perception regarding safety and quality compliance. This would be achieved through classroom training and by implementing safety and quality protocols that could effectively upgrade safety/quality aspects. This was seen as a preliminary phase to be accomplished previous to launching a Quality Certification Program for local producers. The total process initiated was expected to reduce exposure or risk for procurement programs serving government-operated food service patrons and ultimately assure enhanced product quality to all consumers.

In the academically oriented training phase, thirty persons participated in three series of lectures (totaling seven one-day sessions) provided by the FSTP. The group of trainees included representatives of agricultural firms and officials assigned to various fruit and vegetable programs and to the school lunch program distribution project. This project has eight distribution centers located at different points strategically and serves 1,800 school lunchrooms in the private and public education systems.

In the individual firm mentorship phase, written protocols were custom-developed with the participation of firms' and responsible officials of programs and with additional training of each firm's personnel.

Training Aspect

The first aspect, Classroom Training, progressed approximately on schedule and the three courses totaling seven sessions were scheduled were celebrated with excellent results. These sessions included meals service and materials.

The third of the courses programmed was slightly changed in the order of events and also in how it was titled. This owes to the observations that were gathered regarding the quality and prevention aspect. Instead of *Quality and Safety of Minimally Processed Foods*, the name and contents of the course were changed to *Implementing the System of Quality Management* because of the necessities observed by the trainers.

Name of Course	Originally Projected	Actual
Good Management Practices for Post-Harvest in Agro-industrial Operations for Fruit and Vegetables	Oct 08	December 4-5, 2008
HAACP for Fruit and Vegetable Agro-industrial Operations	Jan 09	February 18, 19 and 20, 2009
Implementing the System of Quality Management	April 09	May 7-8, 2009

The three courses were celebrated using facilities at the UPR Mayagüez Campus. 30, 29 and 30 persons completed the courses respectively. The accommodations had been made for 30 persons but one person who was expected was unable to attend in the case of the second course. The group of persons that has received the training was a mix of approximately half technical program personnel (Agronomists) and half representatives of the farmers' enterprises and organizations.

The Agronomists mainly are officials of the supply organization that operates a service network covering purchase, handling, and distribution of fresh fruits and vegetables to the school lunch program of Puerto Rico. Most of the targeted enterprises were duly represented.

As a result of the HACCP course 25 persons who passed the test that was given at the end of the course have been HACCP certified by HACCP Alliance.

Following, we include the titles of each course and the lists and orientation of each person who attended.

1. *BUENAS PRACTICAS DE MANEJO POST COSECHA EN OPERACIONES AGRO INDUSTRIALES DE FRUTAS Y HORTALIZAS* \$6,000.00
4 y 5 DE DICIEMBRE DE 2008

Translates as: Good Agricultural Post-Harvest Practices in Agro-industrial Fruit and Vegetable Operations

Delpaís Brand Sponsored Firms

OPCH – José Rivera
OPCH – Agro. Axel Toro

Farináceos del Este – Agro. Antonio Sánchez

Cítricos de la Montaña – Yeidaliz Ramos –Juices Area
Cítricos de la Montaña – Wanda Bonilla - Promotion

Sofrito Doña Yiya –

Hidrovegetales de Puerto Rico – Agro. Nelson Alicea
Hidrovegetales de Puerto Rico – Evelyn Rodríguez - Secretary

Mercadeo ASDA-School Lunch Program Handlers and Distributors

Agro. Hipólito Santiago- Manager ASDA Marketing Services
Agro. Reinaliz García -ASDA Marketing Center Santa Isabel
Agro. Adenawer Bosques- Gerente Servicios Agropecuarios Mercadeo ASDA
Alba Rodríguez –Supervisor ASDA Marketing Center Naranjito
José R. Pagán – Marketing Director ASDA

Agricultural Economic Development

Agro. Manuel Crespo – Executive Director Vegetables Industry
Agro. Jennifer Vélez – Executive Director Hydroponics Industry
Agro. Dalma Cartagena – Executive Director Organics Industry

School Lunch Program Suppliers

Tarik Packing – Frances Cotto –Secretary

Tarik Packing – Maria Lopez Morales – Quality Control

Sofrito DelAgro – Gil Edgardo Rodríguez

Farmers' Markets Agro. Karen Acevedo

Farmers' Markets Agro. Aixa Soto Veléz

Farmers' Markets Agro. Jason Pares

2. HACCP... ANALISIS DE PELIGROS Y PUNTOS CRITICOS DE CONTROL PARA FRUTAS Y VEGETALES FRESCOS

12, 19 Y 20 DE FEBRERO DE 2009

Translates as: Hazard Analysis Critical Control Points for Fresh Fruit and Vegetables

Delpaís Brand Sponsored Firms

OPCH – José Rivera

Farináceos del Este – Agro. Antonio Sánchez

Cítricos de la Montaña – Yeidaliz Ramos – Juices Area

Cítricos de la Montaña-Wanda Montes

Sofrito Doña Yiya – Ernesto Solar – Production Manager

Sofrito Doña Yiya – Mary Núñez – Quality Control

Hidrovegetales de Puerto Rico-Evelyn Rodríguez

Apiarios de Borinquen- Juan Rosado

Empacadora Avícola del Oeste-Samuel Noriega-Manager

ASDA Marketing (School Lunch Handling and Distribution Agency)

Agro. Hipólito Santiago- Services Manager ASDA Marketing Cayey

Agro. Reinaliz García – ASDA Marketing Distribution Center Santa Isabel

Joan Mercucci – Supervisor ASDA Marketing Distribution Center San Germán

Alba Rodríguez –Supervisor ASDA Marketing Distribution Center Naranjito

José R. Pagán – Agrónomist ASDA Marketing Distribution Center Patillas

Agro. Adenawer Soto – Services Manager ASDA Marketing San Sebastián

Agro. Arístides Hernández – Services Manager ASDA Marketing Rio Grande.

Agro. Pablo Cardona- Services Manager ASDA Marketing San Germán

Agricultural Economic Development

Agro. Jennifer Vélez – Executive Director Hydroponics Industry

School Lunch Suppliers

Tarik Packing- Maria Lopez Morales – (Frutitas) Quality Control

Tarik Packing – Lorna Ortiz – Vice President

Sofrito DelAgro – Gil Edgardo Rodríguez

Farmers' Markets Nutrition Program -Agro. Karen Acevedo
Farmers' Markets Nutrition Program -Agro. Aixa Soto Veléz

Coloso Project Agro. Idelisa Acevedo
Coloso Project Yamil Avila
Coloso Project Wilfredo Hernández

**3. IMPLEMENTANDO EL SISTEMA DE GERENCIA DE CALIDAD
7 Y 8 DE MAYO DE 2009**

Translates as: Implementing the System of Quality Management

Delpaís Brand Sponsored Firms

Farináceos del Este – Agro. Antonio Sánchez
Cítricos de la Montaña – Yeidaliz Ramos –Juices Area
Sofrito Doña Yiya – Ernesto Solar – Production Manager
Sofrito Doña Yiya – Mary Núñez – Quality Control
Apiarios de Borinquen- Yelitsa Morales, Juan Rosado
Empacadora Avícola del Oeste-Samuel Noriega-Manager

ASDA Marketing (School Lunch Handling and Distribution Agency)

Agro. Hipólito Santiago- Services Manager ASDA Marketing Cayey
Agro. Reinaliz García – ASDA Marketing Distribution Center Santa Isabel
Joan Mercucci – Supervisor ASDA Marketing Distribution Center San Germán
Alba Rodríguez –Supervisor ASDA Marketing Distribution Center Naranjito
José R. Pagán – Agrónomist ASDA Marketing Distribution Center Patillas
Agro. Arístides Hernández – Services Manager ASDA Marketing Rio Grande.
Agro. Pablo Cardona- Services Manager ASDA Marketing San Germán

Agricultural Economic Development

Agro. Jennifer Vélez – Executive Director Hydroponics Industry
Carlos Vázquez
Melvin Vázquez
Brenda Gracia

School Lunch Suppliers

Tarik Packing- Maria Lopez Morales – (Frutitas) Quality Control
Sofrito DelAgro – Gil Edgardo Rodríguez

Others

Coloso Project Agro. Idelisa Acevedo
Coloso Project Yamil Avila
Coloso Project Wilfredo Hernández

Quesos La Esperanza- Migdalia Morales
 Ramón Ayala
 Reed P. Hepperly

Table 2. The targeted facilities for the mentoring aspect	
Sofrito El Agro	Processed Caribbean Condiment: a ground mix of peppers, onions, garlic, oregano, etc.
Organization of Commercial Hydroponics Producers (OPCH)	Lettuce, cilantro, coriander, various herbs
Hidrovegetales of Puerto Rico	Tomatoes, lettuce
Tarik Packing	Cut-up and containerized fruits and fruit salads
Eight (8) ASDA Marketing Centers*	Warehousing and distribution points for school lunch program locally-produced fruit and vegetable deliveries
*Ascribed to the supply circuit that the Department of Agriculture manages for procurement and distribution of fruit, vegetables and eggs to the Education Department's School Lunch Program.	

All facilities were initially visited twice: the first for introductions, initial inspection, observation of facility and processes, and initial recommendations; the second to review and monitor whatever procedures and practices the facilities have in place. All received initial recommendations resulting from inspection and observation. Additional work per facilities is discussed following.

In the case of the Marketing Program facilities, a calendar of seminars for all employees was celebrated on-site at each of the facilities. This was required because the classroom aspect trained mostly managerial persons. These seminars include instruction regarding Good Manufacturing Practices, Good Agricultural Practices, discussion of deficiencies observed and opportunities for improvement and the showing of a film on Good Manufacturing Practices. Recommendations were made, including recommended products for cleaning purposes. Each facility was then assisted in preparing their SSOP and GMP programs.

Hidrovegetales and OPCH were assisted in the development and implementation of complete GMP and GAP programs.

At Sofrito Del Agro nine (9) received group training. In the cases of Tarik Packing and Sofrito El Agro it was verified that the facilities were adequate, had proper procedures and they are acceptably carrying out their procedures. The second visit monitored the records each facility keeps of the practices they apply and it was determined that they do not need additional assistance other than verification monitoring.

Budget vs. Actual expenses

Following we present the comparison of projected versus actual expenditures of grant funds. Separately you will have received a completed SF 245 requesting reimbursement of the expended amount.

The quantity of grant funds used at the final date covering this grant (December 31, 2009) is \$32,288. This leaves \$1,010 unspent. This amount \$2,212.00 that is left over will be left unclaimed in the final reimbursement notification through SF 425 for reimbursement from AMS and will be left at AMS disposal.

Aspect	Item	Funds approved	Used Dec 31, 2009	Balance
1. Training	Three (3) short courses, each for 30 participants	\$18,000	\$18,000	0
2. Implementation	Food Technologist Fees	15,000	14,990	\$10
3. Other	Office supplies and printed materials for trainings	1,500	1,380	120
Total Federal Share		\$34,500	\$34,370	\$ 130
Match Funds		\$35,000	\$35,000	
Total Project		\$69,500	\$69,370	

Table 3. reflects the utilization of the complete Training budget and also shows that

the Implementation Aspect has used most of its allocation. The unused funds were part of those assigned to materials \$1,000 and a very small sum of the part of the assignment for Food Technologist Fees \$10.

1. Training phase. The training expenses for the classroom phase were paid to the University of Puerto Rico Mayagüez Campus.

2. Implementation phase. The food technologist's fees were paid to Irvis Pagán.

3. Other. The materials that were paid with the \$500.00 used were kits of reminder signs that were posted at specific places at each facility related to sanitary procedures (hand washing posters, etc).

Another \$880.00 has been obligated to pay materials binders that were prepared and delivered to each of the 30 participants after completing the course and the individualized training and that included: copies of all Power Point presentations, two copies of Food Code (one Spanish 2001 Edition, FDA and one English 2009 Edition, FDA), copies of a CD titled *Guide for Reduction to Minimize Microbial Risk in Foods: Case of Fruits and Vegetables* and regulations, forms, copies of

written programs developed that were prepared for each facility. This invoice is still outstanding as of March 31, 2010. This is the only unpaid invoice.

The match fund used during this period is \$35,000 invested as Food Safety Project Coordinator's Salary and Utilization of Office Space and Equipment.

We would be glad to submit any additional information or evidences required.

Contribution of public or private agency cooperators.

We must recognize the important contribution of the Food Science and Technology Program of the Agricultural Sciences College of the UPR Mayagüez Campus to this project.

Results, conclusions, and lessons learned.

Enhancement of the Food Safety and Quality aspects are very necessary in order to create a progress in our local production and to assure consumer well being.

The Puerto Rico Department of Agriculture has since this project embarked on a broader-focused training program that integrates food safety as one of its main themes, alongside business administration concerns.

Additional food safety and quality work must be undertaken with or without external funding.

We would like to ask for additional AMS assistance in these aspects.

Current or future benefits to be derived from the project.

This project has served to step up the pace of change in the aspect of food safety in Puerto Rican agriculture and it's linking with food industry. It has created a working alliance with academia. It has served as the primary experience that has led to begin a larger endeavor. It has put food safety in the official spotlight for the Department of Agriculture.

A brief description of the project beneficiaries including the number, type and scale of producers.

Category and Facility	Number Farmers	Number Employees	Scale of Operation
Private Food Enterprises			
Sofrito del Agro		20	Small
Tarik Packing		20	Small
Sofrito Doña Yiya		11	Small
Farmers' Coops			

Organization of Producers of Commercial Hydroponics	52	3	Small
Farinaceous of the East	35	9	Small
Citrus Producers of the Mountain			Medium
Hidrovegetables of Puerto Rico	24	5	Small
Egg Packers of the West	8	11	Medium
Agriculture Department Programs			
Farmers' Markets Nutrition Pr	50	8	Medium
Agricultural Economic Development			
Organics Industry	40		Small
Hydroponics Industry	80		Small
Vegetables Industry	60		Medium
ASDA Marketing			
Santa Isabel		12	Medium
San Sebastián		8	Medium
Cayey		17	Medium
Naranjito		25	Medium
San Germán		13	Medium
Patillas		12	Medium
Rio Grande		7	Medium
Ciales		10	Medium

Contact person for the project with telephone number and email address.

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