

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Plant System

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
204	Plant Product Quality and Utility (Preharvest)	9%			
205	Plant Management Systems	8%			
211	Insects, Mites, and Other Arthropods Affecting Plants	12%			
212	Pathogens and Nematodes Affecting Plants	9%			
216	Integrated Pest Management Systems	13%			
401	Structures, Facilities, and General Purpose Farm Supplies	7%			
402	Engineering Systems and Equipment	5%			
403	Waste Disposal, Recycling, and Reuse	7%			
405	Drainage and Irrigation Systems and Facilities	8%			
601	Economics of Agricultural Production and Farm Management	5%			
602	Business Management, Finance, and Taxation	5%			
604	Marketing and Distribution Practices	7%			
610	Domestic Policy Analysis	5%			
	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	23.5	0.0	0.0	0.0
Actual Paid Professional	27.1	0.0	0.0	0.0
Actual Volunteer	5.0	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
1031942	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
515971	0	0	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

- Technical production training meetings.
- Capacity building workshops
- Demonstration of methods
- Meetings, visits and guidance to farmers
- Collaboration with state, local and federal government agencies.
- Use of mass media to disseminate information.
- Preparation of technical plans (IPM, irrigation systems, cultivation practices)
- Prepare curricula and other educational materials

2. Brief description of the target audience

Farmers, government professionals, county agents, agricultural entrepreneurs, pesticide applicators, homeowners, landscapers, and professionals from the private sector.

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	47768	39809	829	1307

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	3	0	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of producers trained in integrated coffee management.

Year	Actual
2012	2031

Output #2

Output Measure

- Number of producers trained in banana and plantain management.

Year	Actual
2012	2114

Output #3

Output Measure

- Number of producers trained in integrated starchy crops management.

Year	Actual
2012	1291

Output #4

Output Measure

- Number of producers trained in integrated vegetable management.

Year	Actual
2012	2718

Output #5

Output Measure

- Number of producers trained in integrated tropical fruits management.

Year	Actual
2012	882

Output #6

Output Measure

- Number of producers trained in integrated citrus management.

Year	Actual
2012	900

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers that adopted one or more recommended practices for integrated coffee management.
2	Number of producers that increased production and quality of coffee.
3	Number of producers that adopted one or more recommended practices for integrated plantain and banana management.
4	Number of proudcers that increased production and quality of plaintain and bananas
5	Number of producers that adopted one or more recommended practices for starchy crops management.
6	Number of producers that increased production and quality of starchy crops.
7	Number of producers that adopted one or more recommended practices for vegetable management.
8	Number of producers that increased production of vegetable crops.
9	Number of producers that adopted one or more practices for intgegrated tropical fruit management.
10	Number of producers that increased production and quality of tropical fruit crops.
11	Number of producers that adopted one or more practices for integrated citrus management.
12	Number of producers that increased production and quality of citrus.

Outcome #1

1. Outcome Measures

Number of producers that adopted one or more recommended practices for integrated coffee management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	690

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

Number of producers that increased production and quality of coffee.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	322

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

Number of producers that adopted one or more recommended practices for integrated plantain and banana management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Number of producers that increased production and quality of plaintain and bananas

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #5

1. Outcome Measures

Number of producers that adopted one or more recommended practices for starchy crops management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	445

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
405	Drainage and Irrigation Systems and Facilities

Outcome #6

1. Outcome Measures

Number of producers that increased production and quality of starchy crops.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	339

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #7

1. Outcome Measures

Number of producers that adopted one or more recommended practices for vegetable management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2281

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Vegetable producers in Puerto Rico have been facing problems associated with poor product quality and deficient crop cultivation practices. The presence of diseases and pests required the intervention of PRAES agricultural agents and specialists to orient the farmers on better management practices.

What has been done

PRAES agents offered training, on-site visits and orientation, and educational material to farmers to better qualify them to apply best management practices to solve the problems on their farms and increase the marketing of their products.

Results

Two thousand two hundred and eighty-one (2,281) growers adopted one or more recommended practices after completing a course in integrated vegetable management (IVM). Of these 573 (25%) improved the quality of their product (before harvest) and 313 (14%) increased production. Also, 1,467 (64%) of the growers reduced pesticide use in their farms and 1,156 (51%) adopted one or more IPM practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #8

1. Outcome Measures

Number of producers that increased production of vegetable crops.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	313

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices

Outcome #9

1. Outcome Measures

Number of producers that adopted one or more practices for integrated tropical fruit management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
405	Drainage and Irrigation Systems and Facilities

Outcome #10

1. Outcome Measures

Number of producers that increased production and quality of tropical fruit crops.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	105

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
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205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices

Outcome #11

1. Outcome Measures

Number of producers that adopted one or more practices for integrated citrus management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	331

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
405	Drainage and Irrigation Systems and Facilities

Outcome #12

1. Outcome Measures

Number of producers that increased production and quality of citrus.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices

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

Brief Explanation

Crop production was affected by key pests. In coffee, the coffee berry borer affected coffee growers reducing production and quality. In plantain, the black sigatoka disease continues as the most important problem affecting production. Citrus greening, a new disease in citrus crops in Puerto Rico, is spreading throughout the Island. Citrus producers had a reduction in production and increased fertilization costs and management of the psyllid vector of the disease.

Although we had no major hurricane passing through Puerto Rico, during the 2012, the rainy season had a negative impact on production. In areas where there was an increase in outcomes PRAES worked jointly with Puerto Rico Agriculture Experiment Station researchers to convey the importance and benefits of applying better management practices and IPM.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In our 2012 POW we planned evaluation studies, before and after, case studies and a survey. We expect to have the final results for our 2013 Annual Report.,

Key Items of Evaluation