

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

**Program # 3**

**1. Name of the Planned Program**

Strategic Research for the Management of Invasive Pest Species - Global Food Security and Hunger

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
211	Insects, Mites, and Other Arthropods Affecting Plants				50%
215	Biological Control of Pests Affecting Plants				50%
	<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	0.0	4.0
Actual	0.0	0.0	0.0	4.0

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	0	244105
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	244105
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

**Offshore research:**Offshore research on three high risk species (Planococcus minor, Planococcus lilacinus and Rhyncophorus ferrugineus) was carried out in Trinidad, Dominican Republic, and Curacao

and Aruba with a view to generate data on biology, ecology and control.

**Tropical soda apple (TSA):** Studies were conducted to determine if previous feeding by Tortoise beetle, *Gratiana boliviana* a biological control agent of Tropical Soda apple (a serious invasive weed) had adverse effects to beet army worm and thrips, resulting in reduced oviposition, preference for induced foliage and decreased performance and survival on induced foliage.

**Biological Control of Hydrilla verticillata:** A preliminary survey of of the upper 1.5 miles of the river of the Wacissa Springs Group was conducted by canoe. A subjective scale of 0-3 was used with 0 indicating hydrilla undetected and 3 completely choked. Cultures of hydrilla were established in the lab from Wacissa Big Blue Spring, Wacissa #2 and Garner Spring. Lab colonies of the stem mining midge, *Cricotopus lebetis* (Diptera: Chironomidae) were also established.

**Expert information systems:** Lucid software is being used to develop and deploy electronic identification tools and resources for selected taxa and commodities.

**Benefits and risks of biological control agents:** Studies were conducted to assess the effectiveness of risk communication activities during the permitting process for entomophagous biological control agents.

## 2. Brief description of the target audience

The target audience include: federal and state biosecurity agencies, farmers, extension workers and pest management specialists.

### 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>	200	225	75	50
<b>Actual</b>	150	300	50	100

#### 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

2010	Extension	Research	Total

<b>Plan</b>	2	5	
<b>Actual</b>	3	4	7

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Electronic identification tools, strategic plans for the management of high risk invasive pests, effective biological control for specific pests, accurate prediction of potentially invasive pests, and publications. Training of graduate and undergraduate students.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	50	0

**Output #2**

**Output Measure**

- Electronic identification tools.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	{No Data Entered}	1

**Output #3**

**Output Measure**

- Strategic plans for the implementation of biological control against high risk invasive pests.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	{No Data Entered}	1

**Output #4**

**Output Measure**

- Knowledge base on target high risk invasive species developed.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	{No Data Entered}	3

**Output #5**

**Output Measure**

- Presentations at professional or grower meetings.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
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2010	{No Data Entered}	10
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**Output #6**

**Output Measure**

- Major workshops or conferences organized.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	{No Data Entered}	1

**Output #7**

**Output Measure**

- Training of graduate and undergraduate students.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2010	{No Data Entered}	11

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	More effective strategies for the identification, prevention or management of invasive species; More efficient production and greater profitability; Greater implementation of integrated pest management; Development of better pest identification tools; Reduction in spread of invasive species; Well-trained graduate and undergraduate students in the management of native and non-native pests.

## **Outcome #1**

### **1. Outcome Measures**

More effective strategies for the identification, prevention or management of invasive species; More efficient production and greater profitability; Greater implementation of integrated pest management; Development of better pest identification tools; Reduction in spread of invasive species; Well-trained graduate and undergraduate students in the management of native and non-native pests.

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

- 1890 Research

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	100	0

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

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

{No Data Entered}

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

{No Data Entered}

#### **Results**

{No Data Entered}

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

<b>KA Code</b>	<b>Knowledge Area</b>
211	Insects, Mites, and Other Arthropods Affecting Plants
215	Biological Control of Pests Affecting Plants

## **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

### **Brief Explanation**

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

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

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

### **Evaluation Results**

### **Key Items of Evaluation**