

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

**Program # 5**

**1. Name of the Planned Program**

Sustainable Energy - Bioenergy Research

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
511	New and Improved Non-Food Products and Processes				100%
	<b>Total</b>				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	0.0	2.0
Actual Paid Professional	0.0	0.0	0.0	1.0
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	0	145773
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	72887
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

Program activities were undertaken in several areas:

a. Development of hybrid hardwood tree species, such as sweetgum, eucalyptus and other

regionally appropriate energy crops.

- b. Implementation of a sustainable approach to feedstock production including: social, economic and environmental aspects of the bioenergy production chain.
- c. Development of biological and chemical conversion technologies which will accept a diverse range of feedstocks.
- d. Promotion of small business development to create jobs and build wealth in rural areas.
- e. Training of the next generation of green workers.

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

The target audience still remains our main stakeholders, the limited resources land-owners and the students. The general public will also participate in some of the surveys and activities promoting biofuels in the state.

**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
<b>Actual</b>	1000	500	500	3000

**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
<b>Actual</b>	0	6	6

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

**Output Target**

**Output #1**

**Output Measure**

- Species of plants evaluated  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Extramural grants to support bioenergy research  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Partnerships with clientele  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	1. Produce graduates in the agricultural sciences 2. Produce graduates with adequate knowledge in bioenergy 3. Establish demonstration projects at the research farm in Quincy, FL

## **Outcome #1**

### **1. Outcome Measures**

1. Produce graduates in the agricultural sciences 2. Produce graduates with adequate knowledge in bioenergy 3. Establish demonstration projects at the research farm in Quincy, FL

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

- 1890 Research

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	0

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

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

The sharing of information and ideas among scientists is vital to the advancement of the bioenergy field as is the training of students to fill critical careers in the field.

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

Several manuscripts have been published. The FAMU BioEnergy group also held several workshops/conferences. At least six students are undertaking various kinds of training under the program.

#### **Results**

Six peer reviewed publications were published and in addition, three workshop/conference activities were held. 1) Biofuels workshop at the Crescent Moon Organic Farm in Sopchoppy, Florida; Biofuels Symposium held on October 10-12, 2011, on the FAMU campus. The theme of the Conference was, "training the next generation of green workers." 3) Regional bioenergy summit held on the FAMU campus on February 18-19, 2011. The theme of this summit was: "embracing our tradition of partnership summit - 1890 land grants and HBCUs reconnecting with local communities to develop a green agenda?". Two B.S., three MS and two PhDs students are currently performing research in biofuels related area.

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

<b>KA Code</b>	<b>Knowledge Area</b>
511	New and Improved Non-Food Products and Processes

## **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
- Other (Students recruitment)

### **Brief Explanation**

Although the program was able to demonstrate tremendous accomplishments during the year, it was clear that recruitment of a laboratory technician to support to activities would enhance the program output. Additionally there is need for a full-time field worker to help run field experiments.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

Two B.S., three MS and two PhDs students are currently performing research in biofuels related area. Six manuscripts were published in peer-reviewed journals with international circulation. Two major bioenergy conferences were held on FAMU campus. In addition several workshops were held on the Sopchoppy Farm where limited landowners were provided with the necessary know-how to convert used cooking oil into biodiesel. Information generated from the program was shared with the general public. In addition, two small biofuels grants from agencies other than USDA were secured to further support the program.

### **Key Items of Evaluation**

Scope of students training opportunities.

Scientific publications.

Dissemination and outreach activities through conferences and workshops.

Efforts to secure additional program support through development of other grants proposals.