

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

**Program # 5**

**1. Name of the Planned Program**

Global Food Security and Hunger

Reporting on this Program

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

**1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
102	Soil, Plant, Water, Nutrient Relationships	12%	11%	12%	6%
111	Conservation and Efficient Use of Water	2%	3%	2%	1%
112	Watershed Protection and Management	4%	5%	4%	3%
121	Management of Range Resources	1%	0%	1%	0%
125	Agroforestry	0%	0%	1%	0%
131	Alternative Uses of Land	0%	8%	0%	4%
133	Pollution Prevention and Mitigation	5%	6%	4%	3%
201	Plant Genome, Genetics, and Genetic Mechanisms	27%	0%	26%	0%
204	Plant Product Quality and Utility (Preharvest)	11%	0%	13%	0%
205	Plant Management Systems	18%	0%	18%	0%
216	Integrated Pest Management Systems	6%	0%	4%	0%
301	Reproductive Performance of Animals	1%	0%	1%	0%
303	Genetic Improvement of Animals	1%	0%	1%	23%
304	Animal Genome	0%	0%	0%	7%
307	Animal Management Systems	5%	22%	6%	22%
311	Animal Diseases	0%	13%	0%	0%
403	Waste Disposal, Recycling, and Reuse	0%	2%	0%	1%
503	Quality Maintenance in Storing and Marketing Food Products	4%	0%	4%	0%
601	Economics of Agricultural Production and Farm Management	3%	30%	2%	16%
701	Nutrient Composition of Food	0%	0%	1%	14%
	<b>Total</b>	100%	100%	100%	100%

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

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

	Extension	Research

Year: 2012	1862	1890	1862	1890
	Plan	59.5	1.5	42.0
Actual Paid Professional	13.5	2.2	9.7	10.8
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
2398392	771043	2847204	1438968
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	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**

This planned program encompasses the largest area of combined research and Extension work for UGA and FVSU.

Applied and basic research resulted in several articles and other papers and patents. Additionally, this information was extended to the target audiences via educational trainings, workshops, conferences and other media outlets.

Georgia's producer organizations have continued to work closely with us in educational and outreach efforts. Through participation one-on-one consultations, publications, meetings, etc., we provided timely and pertinent information to agents, producers and the general public.

Breeding/genetics programs were conducted on cereals, comparative grasses, cotton, forages, legumes, peanuts, soybeans, oilseed crops and turfgrasses. The goal was to develop cultivars that are adapted to the Southeast's climatic conditions and have superior yields, agronomic traits, durable pest resistance and end-use quality. Additionally, transgenic plants were produced and screened.

Other research projects included understanding and developing strategies to overcome endophyte-infected tall fescue pastures; improving yield, efficiency, and profitability of summer and winter grain production; and developing agronomic practices that provide peanut and soybean producers high yield and quality with maximum economic return.

Research and Extension programs in insect pest management were carried out in all major commodity areas. The **commercial vegetable pest control handbook** for Georgia was updated and published in 2012. Forty-two research and demonstration projects were conducted in vegetable IPM.

Information and programs were also provided for the following: herbicide efficacy and crop weed management; determining disease resistance of new breeding lines, peaches and blueberries; alternatives for methyl bromide in plasticulture vegetable production; invasive plant ecology and management; fruit thinning as a recommended practice for pecan producers.

A bull testing program, heifer evaluation and reproductive development program were conducted at multiple locations. The **Georgia Beef Challenge** evaluated calves for feedlot performance and carcass evaluation in commercial feedlots. Multi-breed evaluation programs were implemented in order to make genetic values available to producers of both purebred and crossbred cattle, whereas before they were available to only purebred cattle breeders.

New forages and byproduct feeds were evaluated for nutritional and economic value in beef production systems, as well as for their effects on human nutrition. Research was also conducted to develop improved methods of feeding and managing broiler breeders to increase egg production, improve fertility and reduce stress.

Research findings have resulted in greater understanding of host-parasite interactions and more effective biological toxins and patents for compounds to enhance Bt toxin efficacy for agricultural and medical pests. Research is also ongoing in colony collapse disorder and with collaborators throughout the U.S. in implementing IPM practices and developing thresholds.

Work at the **Georgia Center for Aquaculture Development (GCAD)** at FVSU included developing and evaluating aquaculture species, production methods and systems, and the demonstration of recirculating aquaculture systems (RAS). Demonstrations of sustainable aquaculture production and aquaponics continued with workshops, tours, student training and aquatic animal and aquaponic production. Visitors to the FVSU campus obtained first-hand experience with freshwater prawns, three species of tilapia and hybrids, koi, channel catfish, copper nose bream, largemouth bass, pacu and Australian red claw cultured in the greenhouse RAS.

More than 6,052 participants gained information on aquaculture from the GCAD staff from exhibits at the Sunbelt Agricultural Expo, the Tri-State Aquaculture Association exhibit, the Georgia Organics annual meeting and other presentations around the state. In 2012, the GCAD at FVSU continued to enhance the opportunities for producers to create commercially viable aquaculture enterprises. The GCAD helped form the **Georgia Aquaponics and Aquaculture Network**, which was incorporated as a cooperative in the state of Georgia to develop initiatives to promote and enhance aquaculture enterprises.

## 2. Brief description of the target audience

As Georgia's largest, this planned program has a broad and varied range of audiences.

Federally funded Extension Specialists provided training, information, and resources to Extension Agents. Agents were able to reach far and wide into Georgia and the surrounding region. Between programming provided by Specialist and Agents, audiences include:

- Sheep and goat producers
- Dairymen
- Beef cattle producers
- Poultry Producers
- Aquaculture professionals
- Catfish processing plant operators
- Agribusiness professionals and entrepreneurs
- Plant breeders

- Fruit, berry, and nut producers
- Vegetable growers
- Government officials and policy makers
- USDA personnel
- Non-Governmental Organizations (NGO's)
- Neighbors in animal agricultural environments
- Typically underserved clients in livestock enterprises

Researchers have shared findings with the scientific community through invited presentations and publications. Audience also includes biotech companies, chemical companies, and multiple industry professionals and producers.

**3. How was eXtension used?**

The number of individuals with **eXtension** IDs has continued to grow. Current membership for UGA is 524; State of Georgia membership is 605.

There are 32 active Experts from Georgia on Ask an Expert, with 13 widgets on Georgia sites. There were 558 questions answered by UGA.

There are 150 members of Community of Practice in 46 of the 69 approved communities. (Up from 125 members in 59 communities in 2011)

**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>	12137	58766	5293	6230

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

**Patent Applications Submitted**

Year: 2012

Actual: 5

**Patents listed**

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

**Number of Peer Reviewed Publications**

2012	Extension	Research	Total
<b>Actual</b>	290	26	0

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

## **Output Target**

### **Output #1**

#### **Output Measure**

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)

<b>Year</b>	<b>Actual</b>
2012	336

### **Output #2**

#### **Output Measure**

- Number of educational contact hours generated from formal educational programs presented to county extension agents by state faculty directly associated with this planned program.

<b>Year</b>	<b>Actual</b>
2012	867

### **Output #3**

#### **Output Measure**

- Number of educational contact hours generated from formal educational programs presented directly to clientele by state faculty directly associated with this planned program.

<b>Year</b>	<b>Actual</b>
2012	1167

### **Output #4**

#### **Output Measure**

- Number of invited presentations by faculty directly resulting from the success of this planned program.

<b>Year</b>	<b>Actual</b>
2012	481

### **Output #5**

#### **Output Measure**

- Number of disease samples processed by diagnostic laboratory.

<b>Year</b>	<b>Actual</b>
2012	7587

**Output #6**

**Output Measure**

- Number of field experiments to develop disease management approaches.

<b>Year</b>	<b>Actual</b>
2012	19

**Output #7**

**Output Measure**

- Number of international contacts

<b>Year</b>	<b>Actual</b>
2012	10

**Output #8**

**Output Measure**

- Website page views  
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	Number of additional direct extension contacts made by county faculty not receiving federal funds, staff or volunteers as a direct result of the work of faculty receiving federal funds within this planned program.
2	Number of Master Cattlemen certifications granted through this planned program.
3	Increase in the farm gate value of livestock production in Georgia. Reported in millions of dollars.
4	Farm gate value of poultry production in Georgia. Value reported annually in millions of dollars.
5	Medium term: development of disease management approaches the reduce disease damage by 65%

## **Outcome #1**

### **1. Outcome Measures**

Number of additional direct extension contacts made by county faculty not receiving federal funds, staff or volunteers as a direct result of the work of faculty receiving federal funds within this planned program.

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

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	107380

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

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

Georgians are in need of sound, unbiased, research-based information. The specialists and county faculty who conduct research and study in their unique fields of expertise have the knowledge and information that is needed by local clientele. The ratio of state specialists and researchers to the local populations is prohibitive to wide spread knowledge dissemination.

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

Georgia state specialists and provide research based knowledge and training that is then passed along to clientele by county agents.

#### **Results**

The county delivery system provides a local expert to deliver the research based information from the specialists to a multitude of clientele, reaching far beyond the scope of the state level specialists. The county level professional is able to localize and interpret the data and information to meet the needs of the specific community member, farmer, parent, homeowner, consumer, etc. The dissemination of information and education based on the terms of the local clientele provides a consumable product that can be put into practice by the layperson. The local delivery system exponentially expands the delivery of the expertise, knowledge, and research of the University to local constituents.

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

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
121	Management of Range Resources
125	Agroforestry
131	Alternative Uses of Land
133	Pollution Prevention and Mitigation
201	Plant Genome, Genetics, and Genetic Mechanisms
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
303	Genetic Improvement of Animals
304	Animal Genome
307	Animal Management Systems
311	Animal Diseases
403	Waste Disposal, Recycling, and Reuse
503	Quality Maintenance in Storing and Marketing Food Products
601	Economics of Agricultural Production and Farm Management
701	Nutrient Composition of Food

**Outcome #2**

**1. Outcome Measures**

Number of Master Cattlemen certifications granted through this planned program.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2012	66

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
121	Management of Range Resources
301	Reproductive Performance of Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management
701	Nutrient Composition of Food

**Outcome #3**

**1. Outcome Measures**

Increase in the farm gate value of livestock production in Georgia. Reported in millions of dollars.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2012	33

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

1,282,465,381 an increase of 33,865,639 from 1,248,599,742

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
121	Management of Range Resources
301	Reproductive Performance of Animals
303	Genetic Improvement of Animals
304	Animal Genome
307	Animal Management Systems
311	Animal Diseases
503	Quality Maintenance in Storing and Marketing Food Products
601	Economics of Agricultural Production and Farm Management
701	Nutrient Composition of Food

**Outcome #4**

**1. Outcome Measures**

Farm gate value of poultry production in Georgia. Value reported annually in millions of dollars.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2012	5468

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

5,468,931,372

(increase of 81,236,811)

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
301	Reproductive Performance of Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management
701	Nutrient Composition of Food

**Outcome #5**

**1. Outcome Measures**

Medium term: development of disease management approaches the reduce disease damage by 65%

Not Reporting on this Outcome Measure

**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**

{No Data Entered}

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

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}