V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Agriculture, Forestry, and Related Industries

☑ 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
111	Conservation and Efficient Use of Water	5%	10%		
112	Watershed Protection and Management	5%	10%		
123	Management and Sustainability of Forest Resources	5%	10%		
124	Urban Forestry	5%	5%		
125	Agroforestry	5%	0%		
133	Pollution Prevention and Mitigation	0%	5%		
134	Outdoor Recreation	5%	5%		
135	Aquatic and Terrestrial Wildlife	5%	5%		
136	Conservation of Biological Diversity	5%	5%		
205	Plant Management Systems	13%	5%		
216	Integrated Pest Management Systems	5%	5%		
301	Reproductive Performance of Animals	5%	5%		
302	Nutrient Utilization in Animals	5%	5%		
303	Genetic Improvement of Animals	5%	5%		
307	Animal Management Systems	10%	5%		
311	Animal Diseases	5%	5%		
315	Animal Welfare/Well-Being and Protection	5%	5%		
601	Economics of Agricultural Production and Farm Management	3%	0%		
605	Natural Resource and Environmental Economics	2%	0%		
806	Youth Development	2%	5%		
	Total	100%	100%		

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	35.2	0.3	0.0	0.0
Actual Paid	62.0	3.8	0.0	0.0
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**
757490	197681	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1250084	216518	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
6726430	329740	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Ag Crops Extension specialists, regional agents, and county coordinators participated in activities related to this project which included but not all inclusive; peanut pod blasting (5); field crops tours (11);cotton production meetings (6); entomology in--field training (3); wheat meetings (1); stink bug in--field monitoring (2); sprayer clinic (4);pesticide/applicator training (15); farm bill training (1); Pesticide dealer mtg (1) Activities also included development of IPM Guides, disease diagnosis, entomology webinar, and stored grain workshops (2).• Master Gardener training series (10-14 classes each) were offered in 22 locations and trained 431 interested participants from 33 counties. Classes include soils and plant nutrition, plant physiology, pest ID and management, water conservation, fruits and vegetables, composting, beneficial insects, and others. Classes were coordinated by 12 REAs partnering with 9 CECs, and 8 Specialists. • Poultry knowledge was transferred through short courses, training sessions, newsletters and thePoultryhouse.com website. Field studies were conducted on poultry house design. Organic/small farm IPM campaign (Auburn Univ.) is one of the most recent campaigns in ACES. Participation of producers in 2013 Alabama IPM meetings (869) has increased by about 40% since 2011.Overall satisfaction rating from training is 97% and the average crop loss prevented range from 40 to 60%among adoptive farmers. The Alabama Vegetable IPM program overall has received many major regional and national awards for a high quality program (details provided later). Efforts were also directed toward educational events and publications for forest landowners, professionals, and practitioners, enhancing their ability to identify and control invasive plants and wild pigs. Eighteen conferences and/or workshops were organized by the team, and 27 additional talks and 2 webinars were given for other groups statewide. Four regional talks and one national webinar were also given. A total of 605 attendees were present at these meetings and represented forage producers, crop advisors, green industry personnel, cattlemen, foresters, land managers, and Master Gardeners. Survey data from four of the ten meetings indicated landowners and land managers in attendance were responsible for approximately 238,000 acres. Eight Extension publications and six videos were produced. Seven peer-

on cogongrass, Chinese tallowtree, and wild pigs were published or accepted for publication. Six articles were published in popular press outlets (circulation >200,000) and specialists were interviewed for articles in four national and one international media outlet. The ACES invasive plant web page was completely revised, and now contains primarily on-site material. Our Facebook page (Alabama Extension Invasive Plant Page) nearly doubled in number of followers, reaching 400 'likes'. Typically two to six posts are made per month.

2. Brief description of the target audience

• The activities of the Agronomic Crops Program Priority Team reached the following groups of stakeholders: 1) row crop and fruit-vegetable producers and their representatives groups that include, but are not limited to, the Alabama Cotton Commission, Alabama Peanut Commission, Alabama Soybean Producers, and Alabama Wheat and Feed Grains Committee; 2) row crop, timber, forage, fruit-vegetable advisors including ACES agents and specialists, ACES county coordinators, ACES risk preparedness specialists, public and private crops advisors; 3) agriculture and forestry equipment dealers and input supplier organizations; 4) governmental agency personnel including USDA, NRCS, and State of Alabama Soil and Water Conservation Committee; and 5) private citizens impacted by policies and practices used for the production of food, fuel, and fiber. The Master Gardener project is designed to recruit, train and retain participants interested in community volunteer service in partnership with the mission of ACES. REAs and CECs maintained partnerships with 33 local MG groups who reported contacts 12x greater than our MG membership of 1824 volunteers. • Poultry Industry professionals, poultry farmers, small flock owners were targeted with programs.• Small producers (organic, transitioning, and certified naturally grown), crop consultants, nonprofit agencies (e.g., food banks), small retailers, and state conservation agency, educators and county Extension coordinators.• Target audience for the invasive species program was the landowners, and natural resource professionals of Alabama. The Urban Gardens and Sustainable Landscapes (USGL) Program is supported by 6 Urban Regional Extension Agents (UREAs), cover 9 urban centers which encompass 21 counties and span the whole state of Alabama. During the course of 2013 six UREAs conducted workshops, seminars and attended various conferences to educate Alabama urban clientele on the benefits of gardening in limited urban spaces, and the options and opportunities available for gardening with limited resources.

3. How was eXtension used?

The Alabama Organic Vegetable/Small Farm IPM program used eOrganic (part of eXtension) webinar technology to share research-based crucifer insect pest management information to producers and educators across Alabama and the nation. A summary of this activity was emailed to 6,000 members of eOrganic and also archived online for viewing.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	259627	6247813	0	0

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	20	7	27

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- This program area will include numerous output activities and methods as part of the Extension Team Projects, Special Funded Projects, and Ongoing Projects which are described/explained in the prior outcome activities and methods sections. The success of many of these outcomes will be formally evaluated/measured by using individual activity evaluation forms designed specifically for each activity, The success of other activities and methods will be measured by the level of participation in the activity. In the target boxes below for each year, we are indicating the number of individual activities within the these program areas that will be formally evaluated using an evaluation instrument designed specifically for that activity.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of workshops, webinars, and presentations to increase knowledge of cogongrass ecology and control

Year	Actual
2014	51

Output #3

Output Measure

- Number of organic/natural grown fruit and vegetable production practices workshops

Year	Actual
2014	30

Output #4

Output Measure

- Number of new housing and equipment changes workshops and presentations for poultry farmers

Year	Actual
2014	75

Output #5

Output Measure

- Number of soybean rust monitoring sites

Year	Actual
2014	15

Output #6

Output Measure

- Number of active reporting MG volunteers offering Extension support and educational outreach

Year	Actual
2014	1824

Output #7

Output Measure

- Number of small flock support and training workshops

Year	Actual
2014	5

Output #8

Output Measure

- Number of on-farm demonstrations for target spot on cotton

Year	Actual
2014	7

Output #9

Output Measure

- Number of peanut production and pest management training meetings completed

Year	Actual
2014	8

Output #10

Output Measure

- Number of participants at peanut production and pest management training meetings

Year	Actual
2014	347

Output #11

Output Measure

- Number of workshops to encourage adoption of rainwater collection system

Year	Actual
2014	50

Output #12

Output Measure

- Number of acres of rainwater irrigated fruits and vegetables

Year	Actual
2014	3

Output #13

Output Measure

- Number of workshops to enhance environmental knowledge among urban, nontraditional, and underrepresented audiences in the areas of forestry, wildlife, and natural resource management

Year	Actual
2014	106

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase profitability of pay-to-fish operations
2	Increase knowledge and awareness of cogongrass ecology and control
3	Increase knowledge and adoption of organic/naturally grown fruit and vegetable production practices
4	Increase poultry farmer knowledge of new housing and equipment changes and techniques
5	Increase awareness of spread of soybean rust and control measures
6	Increase knowledge of ways to successfully provide for farm succession methods
7	Increase knowledge of importance of forages in animal production systems and adoption of profitable forage production systems
8	Increase knowledge of horticultural practices for Master Gardener Interns
9	Sustain volunteer support from Master Gardeners
10	Adoption of rainwater collection systems for urban noncommercial garden
11	Increase awareness of water conservation
12	Increase number of acres of rainwater irrigated fruits and vegetables
13	Increase knowledge and understanding of environmental issues related to electronic waste management, storage and disposal
14	Enhance environmetal awareness among urban, nontraditional, and underrepresented audiences in the areas of forestry, wildlife, and natural resource management
15	Number of attendees who learned about invasive species (animal and/or plant) control measures
16	Percent increase in knowledge of organic/natural grown vegetable production and pest management practices
17	Amount saved by adopting poultry house technology and energy efficient practices

18	Increased income due to following soybean rust monitoring recommendations
19	Number of Master Gardener Interns who changed their behavior as result of our training
20	Number of sustained these volunteers in 33 counties
21	Amount of dollars saved by decreasing fungicide applications on cotton crops
22	Dollar amount saved by adopting peanut production and IPM recommendations
23	Number of adults who adopted rainwater collection systems for urban noncommercial garden
24	Number of participants who increased knowledge of water conservation
25	Increase in the number of acres of rainwater irrigated fruits and vegetables
26	Number of gallons of rain barrels conserved and distributed for domestic use

Outcome #1

1. **Outcome Measures**

   Increase profitability of pay-to-fish operations

   Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

   Increase knowledge and awareness of cogongrass ecology and control

   Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Increase knowledge and adoption of organic/naturally grown fruit and vegetable production practices

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Increase poultry farmer knowledge of new housing and equipment changes and techniques

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Increase awareness of spread of soybean rust and control measures

Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

Increase knowledge of ways to successfully provide for farm succession methods

Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

Increase knowledge of importance of forages in animal production systems and adoption of profitable forage production systems

Not Reporting on this Outcome Measure

Outcome #8

1. **Outcome Measures**

Increase knowledge of horticultural practices for Master Gardener Interns

Not Reporting on this Outcome Measure

Outcome #9

1. **Outcome Measures**

Sustain volunteer support from Master Gardeners

Not Reporting on this Outcome Measure

Outcome #10

1. **Outcome Measures**

Adoption of rainwater collection systems for urban noncommercial garden

Not Reporting on this Outcome Measure

Outcome #11

1. **Outcome Measures**

Increase awareness of water conservation

Not Reporting on this Outcome Measure

Outcome #12

1. **Outcome Measures**

Increase number of acres of rainwater irrigated fruits and vegetables

Not Reporting on this Outcome Measure

Outcome #13

1. **Outcome Measures**

Increase knowledge and understanding of environmental issues related to electronic waste management, storage and disposal

Not Reporting on this Outcome Measure

Outcome #14

1. **Outcome Measures**

Enhance environmetal awareness among urban, nontraditional, and underrepresented audiences in the areas of forestry, wildlife, and natural resource management

Not Reporting on this Outcome Measure

Outcome #15

1. **Outcome Measures**

Number of attendees who learned about invasive species (animal and/or plant) control measures

2. **Associated Institution Types**

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3126

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Invasive species threaten natural areas as well as forest and pasture productivity across Alabama and the southeastern United States. Despite being present in Alabama since the early 1900's, species such as cogongrass and Chinese tallowtree have exploded in the last 20 years causing significant damage. In addition to these and other invasive plant species, non-native feral hogs are responsible for economic and environmental damage to forests, pastures, agricultural land and natural areas across the state. There is great need for landowner and land manager education on the ecology and control of invasive plants and feral hogs, as many have failed in

their control attempts or have completely neglected the problem.

What has been done
18 conferences and/or workshops were organized by the team, and 27 additional talks and 2 webinars were given for other groups statewide. Other programs and materials: 4 regional talks, 1 national webinar, 8 Extension publications, 6 videos produced, and 7 peer-reviewed articles were published or accepted for publication. Six articles were published in popular press (circulation >200,000) and specialists were interviewed for four national and one international media outlet. The new ACES invasive plant web page now contains primarily on-site material. Our Facebook page (Alabama Extension Invasive Plant Page) doubled its followers, reaching 400 "likes". Typically 2 to 6 posts are made per month

Results
Our educational events reached landowners and natural resource professionals who manage >3.5 million of acres of Alabama forest and agricultural land. All totaled, 3,126 participants attended statewide events. 80% of the participants learned about control and removal strategies to manage the destruction and disruption these species cause. Surveys indicate that many adopted new invasive plant (and wild hog) strategies based on information learned from our programs. Surveys also indicate that the greatest impediment to follow through on invasive species control is adequate funding, labor and time. With approximately 300,000 views of on-line material and 360,000 views of team videos, it is evident that many landowners, forest professionals and other interested parties are looking for solutions and availing themselves to the up-to-date, practical information we provided.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #16

1. Outcome Measures

Percent increase in knowledge of organic/natural grown vegetable production and pest management practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	42

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Organic vegetable production is challenged by a plethora of insect pest issues which limit its acreage in the south. Organic/small farm vegetable producers produce crops in open field or in high tunnels all the production systems suffer greatly from multiple generations of insect pests and the general lack of knowledge about sustainable pest management options. Many new producers are also small farmers' this has created further demand for training programs.

What has been done
The Alabama Extension Commercial Horticulture Team, along with the Home Grounds REAs, has developed an organic/small farm educational campaign since 2010 that has grown in demand every year. We have developed multi-track training program through regional meetings, workshops and field demonstrations. Along with about 30 total events, Extension partners with state agencies and nonprofits for information delivery that has resulted in direct contact with 900+ small producers. In 2014, we developed new training handbook for high tunnel crop producers, an iBook and Alternative Vegetable IPM slide chart that can be seen at www.aces.edu/vegetableipm. The High Tunnel handbook is also available as an iBook containing new IPM materials and YouTube videos integrated on one platform.

Results
The small farm campaign has dramatically increased the knowledge of small producers statewide. Evaluation surveys from high tunnel events suggest 42% increase in knowledge and awareness of commercial horticulture resources among respondents, majority of who are new to Extension. NRCS and FSA state offices have aggressively supported the small farm training events and are very pleased with educational outputs and outcomes. Producers have also been added to the Alabama IPM Communicator newsletter that now has a total of 1600 subscribers and has become a major avenue to information delivery. It is also linked with two very busy social media pages on Facebook that gives direct access to nearly 700 followers. 97% respondents were satisfied from the training events and nearly 100% suggest continuation of the organic/small farm program statewide. Two outside entities (the National Association of County Agricultural Agents and the Southern Region IPM Center) have awarded major honors to this campaign.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #17

1. Outcome Measures

Amount saved by adopting poultry house technology and energy efficient practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	12600000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Amount saved by adopting poultry house technology and energy efficient practices

What has been done
12 Trade magazine articles were published. 75 presentations were delivered to poultry groups. National Poultry Technology Center staff maintained the Poultryhouse.com website. 200 farm visits were completed. 2,500 phone conversations were handled and 12 farm energy audits were completed.

Results
These efforts increased poultry farmer knowledge of poultry house technology and energy efficiency. Farm energy audits helped poultry growers quality for USDA cost share monies for energy improvements. Economic Impact in State of Alabama through Energy Conservation Practices = $12.6 million
Savings to Poultry Growers
Gas (heating) fuel saved on the average poultry house with estimated $1.75/gal = $2,600.00
Electricity (lighting) saved on the average poultry house with estimated $0.11/Kwhr = $900.00

Total Utility Savings for Average 40' X 500' (20,000 ft') Poultry House = $3,500.00
Assume 30% (of 12,000 houses in AL) adoption rate =$12,600,000 savings per year

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #18

1. Outcome Measures

Increased income due to following soybean rust monitoring recommendations

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3000000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers growing soybeans remained concerned about the presence and impact of soybean rust to yield. In 2013 Alabama farmers harvested over 425,000 acres of soybeans with an average yield of 43 bushels/acre. Relatively cool, wet growing conditions during the season provided an environment that was optimal for SBR development and spread.

What has been done
Observations provided by the SBR monitoring program indicate the disease spread across the state. In-season monitoring of SBR allowed team members to advise growers about the spread of the disease. Growers are alerted of the risk of SBR via email, twitter and electronic newsletters, as well as through a telephone hotline. These alerts allowed farmers to make timely decisions of whether or not to spray fungicides to protect their crop and avoid yield losses that could range from 25-50%.

Results
Soybean rust (SBR) was only detected in eight counties in the state in 2014. The disease was not a significant threat to soybean farmers in Alabama for the first time in three years. The soybean

disease monitoring program allowed us to advise growers to hold back on fungicide application in 2014, limiting fungicide use in the state and reducing production costs. The soybean disease monitoring program did detect fungicide-resistant isolates of frogeye leaf spot in seven counties in Alabama. Growers were advised to apply fungicide tank-mixes where the disease was observed to limit the damage from this foliar pathogen. Yield losses of up to 40% have been reported from other states when this disease was present at high levels as we observed in Alabama in 2014. Soybean Vein Necrosis Virus (SVNV) appears to be a growing problem in Alabama. A statewide survey found the disease in a 27 counties over the last two years, and reported that the disease has spread into the southern-most region of the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #19

1. Outcome Measures

Number of Master Gardener Interns who changed their behavior as result of our training

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	323

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Home Grounds calls still dominate the local offices call volume. Training volunteers to help our Agents gives staff more time for other programming. Our staff of 12 Regional Agents, 9 CECs, and 6 Specialists supported training of 431 new volunteers from 33 counties in 2015.

What has been done
Training topics include soils and plant nutrition, insect and disease pests, plant ID, water

conservation and more. 431 interns were surveyed to see what they are doing at home.

Results
Of the 431 MG interns, 75% (323) are promoting gardening to increase their own or a neighbor's physical activity level. Other important results: 61% are using their knowledge of pest life cycles to optimize pest management. 66% are sharing their knowledge they learned from the training about food plants with others.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
136	Conservation of Biological Diversity
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #20

1. Outcome Measures

Number of sustained these volunteers in 33 counties

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	33

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
MG volunteers are invaluable partners in educating their local communities. We support as many training events as possible to sustain the local effort.

What has been done

MGs volunteer as a result of our training. 12 Regional Agents, 9 County Extension Coord, and 6 Specialists supported the training classes in 22 locations. This contributed to volunteer activities in a total of 33 counties where the MG program exists. Some of their local activities included: Lunch and Learn educational programs (7 counties), demonstration gardens (30 counties), info booths at public outlets and County Fair booths (31 counties), charitable food gardens grew 14+ tons of produce (27 counties), partner with historic properties, botanical gardens and local charities (33 counties), financial support to 4 year and 2 year colleges in the form of scholarships (33 counties), 11 Helpline offices that serve 48 counties with 6,258 home garden/landscape answers.

Results
MG volunteers are active with community outreach in 33 counties. They promote and demonstrate best management practices for home landscapes, multiplying the effect of ACES outreach. Our ACES staff led trainings in 22 counties, but ultimately served the citizens of 33 counties through this volunteer staff. Their total volunteer time given in 2014 equaled 65 full time staff equivalents.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
136	Conservation of Biological Diversity
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #21

1. Outcome Measures

Amount of dollars saved by decreasing fungicide applications on cotton crops

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	6000000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Target spot has emerged as a new yield limiting disease of cotton. It has the potential to reduce cotton yields by 25-30 %. Cotton producers were unfamiliar with this disease and unprepared to make fungicide application decisions.

What has been done
On-farm demonstrations were established to monitor disease development and yield loss. Fungicide recommendations were developed to minimize losses to this disease.

Results
Elimination of unnecessary fungicide applications resulted in a savings of $6,000,000

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
601	Economics of Agricultural Production and Farm Management

Outcome #22

1. Outcome Measures

Dollar amount saved by adopting peanut production and IPM recommendations

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	6000000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Peanuts are extremely susceptible to about a dozen insect pests and about half a dozen major diseases that can cause 90% crop loss if not managed in a timely manner. Peanut producers are very dependent on Alabama Extension Peanut IPM team for unbiased pest management information through direct training and publications that result in rapid adoption of IPM recommendations

What has been done
Regional IPM meetings completed = 5 (247 direct contacts); number of scouting schools for hands-on training = 2 (100 direct contacts); information sharing through multi-state meetings and exhibitions = 1 (600 indirect contacts). IPM newsletter issues with peanut pest alerts = 6, Extension Timely Information fact sheets = 2, redesigned IPM website = 1, social media page = 1.

Results
Survey conducted (N=31) at regional peanut production meetings included 78% producers, 12% industry representatives, 4% crop advisors, and 3% pesticide distributors. Survey return rate was 15% with nearly 5175 reported acres (about 200 peanut acres per producer). 61% producers scouted their peanut crop by themselves while 26% producers also sought advice from crop advisors for making IPM decisions involving insecticide or fungicide usage. 45% respondents used information published in the IPM newsletter and 74% referred to the Peanut IPM Guide which is updated online and is the major source of pest management recommendations. 80% producer respondents also consulted the regional agents as needed within the season while 40% used the recommended scouting practices. Overall, 83% or more respondents were highly satisfied with peanut IPM team's educational efforts. Based on number of direct contacts via regional training meetings (n=198 unduplicated number of producers, excluding crop advisors and industry representatives) and 70% short-term IPM adoption rate, economic impact of IPM training is about $6 million.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #23

1. Outcome Measures

Number of adults who adopted rainwater collection systems for urban noncommercial garden

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Water is actually a limited resource when considered to be used in growing produce and home use. The adoption of rainwater collection systems for urban community use is an economical, easy, and sustainable way to conserve one of our natural resources.

What has been done
The Water Wheels 2014 FY reached 2,629 (face to face) individuals through 50 scheduled activities. Some of these activities also have the potential to reach other (non-face to face) individuals through distributed educational resource materials, internet, radio and T.V. interviews, social media (Website visited for FY2014, 7,142 visits, with 13,658 website hits, 19 average visits per day, and August with the highest traffic month: 56% visits from the U.S.), and newspapers. The non-traceable clientele are estimated to be 7,626. Total number reached by the Water Wheels FY2014 is 10,255. The face to face clientele (2,629) were 37% adults, 61% youth, 20% black, 78% white, 50% male, and 50% female.

Results
32% (325) of adults surveyed (1014) indicated that they had adopted rainwater collection systems for their urban gardens

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
205	Plant Management Systems

Outcome #24

1. Outcome Measures

Number of participants who increased knowledge of water conservation

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	861

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The amount of water wasted in urban areas per year is increasing and considering that clean water is a limited natural resource, educational programs for urban clientele is necessary.

What has been done
The Water Wheels 2014 FY reached 2,629 (face to face) individuals through 50 scheduled activities. Some of these activities also have the potential to reach other (non-face to face) individuals through distributed educational resource materials, internet, radio and T.V. interviews, social media (Website visited for FY2014, 7,142 visits, with 13,658 website hits, 19 average visits per day, and August with the highest traffic month: 56% visits from the U.S.), and newspapers. The non-traceable clientele are estimated to be 7,626. Total number reached by the Water Wheels FY2014 is 10,255. The face to face clientele (2,629) were 37% adults, 61% youth, 20% black, 78% white, 50% male, and 50% female.

Results
85% (861) of adults surveyed indicated that they increased knowledge of water conservation techniques of the water wheels programs
The surveys also indicated that of those 85% not aware of the conservation techniques, 72% indicated that this was new knowledge gained as a result of participating in the workshop. The resulting rain barrels sold and installed to the adult participants was 284. This is a 14% increase in rain barrel adoption from last year's number (249 barrels).

4. Associated Knowledge Areas

KA Code	Knowledge Area

111 Conservation and Efficient Use of Water

Outcome #25

1. Outcome Measures

Increase in the number of acres of rainwater irrigated fruits and vegetables

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
High tunnel houses and raised bed gardens an external source of irrigation for successful crop production. The utilization of rainwater collection systems with these types of production systems provide an easy cost effective means of irrigating crops.

What has been done
The USGL 2014 FY reached 3,710 (face to face) individuals through 66 scheduled activities. Some of these activities also have the potential to reach other (non-face to face) individuals through distributed educational resource materials, internet, radio and T.V. interviews, social media, and newspapers. The non-traceable clientele are estimated to be 5,906. Total number reached by the USGL FY2014 is 9,616. The face to face clientele (3,710) were 63% adults, 37% youth, 24% black, 72% white, 30% male, and 70% female. Total number of clientele completed surveys, 840 (23% completion rate)

Results
The combined total of acreage from 2 locations, one raised bed community garden and high tunnel production house is approximately 3 acres.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water

205 Plant Management Systems

Outcome #26

1. Outcome Measures

Number of gallons of rain barrels conserved and distributed for domestic use

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	17040

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
While worldwide water consumption is rising at double the rate of the population. Rainfall replenishes much of the water we use; however, it is predicted that by 2025, eighteen countries will use more water than can be replenished. Climate changes occur annually and often with various regions experiences floods, droughts, earth-quakes, or tornadoes at any one time. We can reduce their impact through planning and preparedness. Rainwater harvesting, whether it is from parking lots or rooftops, is the collection and storage of rainwater. Collected rainwater is used for domestic purposes and irrigation. Rainwater is usually collected from rooftops, greenhouses, pool covers and other relatively clean surfaces and distributed for domestic use such as irrigation, flushing toilets, or washing cars.

What has been done
UGSL FY2014 programming successfully accomplished education programming events throughout the 9 urban centers of Alabama. A total of 106 educational programs were conducted for FY2014. (Website visited for FY2014, 7,142 visits, with 13,658 website hits, 19 average visits per day, and August with the highest traffic month: 56% visits from the U.S.) The traceable clientele reached is 6,338. Total number reached by the UGSL FY2014 is 19,871. The face to face clientele (6,338) were 52% adults, 47% youth, 23% black, 74% white, 39% male, and 62% female (n=6338). Total of 284 rain barrels were distributed and installed as a result of the 42 rain barrel workshops.

Results
Through the entire 3 year span of the Water Wheels project a total of 1,500 rain barrels have been distributed to clientele. As a result, for FY2014 the potential water conserved with one inch

of rainfall and 284, 60 gal rain barrels distributed is approximately 17,040 gallons.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
136	Conservation of Biological Diversity
205	Plant Management Systems
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

Peanut IPM project: Year 2014 was a wet year in the beginning but turned to dry weather during pod filling stage of peanuts (July-Sept) resulting in high insect pressure from thrips, lesser cornstalk borers, and other pests. Failure to detect these insects in a timely manner reduces pest management choices late in season which artificially reduces IPM adoption rates. Economic means and availability of new insecticides and fungicides also affects adoption of selective reduced-risk insecticides among producers. Short supply of disease tolerant peanut varieties and fungicides also increases risk of crop loss due to disease outbreak.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MG Interns gained new knowledge - 31% overall- MG Interns adopted techniques taught about residential landscapes - 61% to 75%- 1824 MG volunteers remained, or newly became involved, with numerous civic, municipal, ACES and other partners. These volunteers gave volunteer time equal to 108 FTEs in 33 counties. Organic/Small Farm IPM program, one of the most peer-reviewed and impactful horticultural education campaign the state, utilizes paper-based and electronic surveys, on-farm evaluations and case studies to monitor quality and impact of commercial horticulture programs. With a rapidly rising number of small producers in Alabama, vegetable IPM training has resulted in 40% increase in knowledge of pest issues among new producers with 90+ percent satisfaction of producers attending hands-on pest management workshops. Overall, the Alabama Vegetable IPM program has received one national sustainable agriculture award from the National Association of County Agricultural Agents, two awards from the Southern Region IPM Center, and a Blue Ribbon Extension Communication Award from the American Society

of Horticultural Science, besides numerous other communications award. Vegetable IPM program impact videos for 2013 and 2014 are available at www.aces.edu/vegetableipm. Commercial horticulture impacts is also available as a publication, visit http://www.aces.edu/pubs/docs/A/ANR-2185/ANR-2185.pdf
Peanut IPM program has been monitoring quality and impact of training programs via paper-based surveys, newsletter electronic surveys, and case studies. 70% producers attending the peanut meetings adopt IPM recommendations in the short-run which results in economic impact exceeding $6 million (conservative estimate). This estimate excludes crops scouted by crop advisors and industry personnel who also heavily utilize extension IPM recommendations for insect pest and disease control.

Key Items of Evaluation

Master Gardeners support ACES Agents by sharing their expertise and knowledge in program delivery, offering their own program outreach, implementing demonstration gardens, and volunteering with many community partners. They support their communities through food gardens and food donations, local charities, in numerous beautification projects, collegiate scholarship donations and more. The MG Helpline (877-252-4769) answers non-commercial questions related to residential landscapes. The 8 agents who support the 11 MG offices say that this volunteer activity greatly reduces their call volume. Volunteers are not expected to know all the answers, but instead where to find the answer in approved references and to offer friendly support to the caller in need of answers.

The Extension Commercial Horticulture Team has a very consistent evaluation approach and utilizes feedback for improving current projects (utilization-focused evaluation approach). Based on feedback gathered at third party educational event (n=24), an average small producer has under 5 acres in specialty crops with 6 years of production experience. About 42% producers have been to at least one Extension meeting (increased from 27% in 2012) and 46% are directly using Extension recommendations (increased from 30% in 2012). Overall, crop loss prevented by IPM training was 44 to 50%; direct short-term impact of horticulture programs is estimated to be over $10 million. With several hundred new vegetable producers and growth of farmer markets across the state, there is heavy demand for commercial fruit and vegetable crop production information.

Soybean rust (SBR) was only detected in eight counties in the state in 2014. The disease was not a significant threat to soybean farmers in Alabama for the first time in three years. The soybean disease monitoring program allowed us to advise growers to hold back on fungicide application in 2014, limiting fungicide use in the state and reducing production costs. The soybean disease monitoring program did detect fungicide-resistant isolates of frogeye leaf spot in seven counties in Alabama. Growers were advised to apply fungicide tank-mixes where the disease was observed to limit the damage from this foliar pathogen. Yield losses of up to 40% have been reported from other states when this disease was present at high levels as we observed in Alabama in 2014.