

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Food Safety (Safe and Secure Food Supply)

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
102	Soil, Plant, Water, Nutrient Relationships	10%	0%		
205	Plant Management Systems	22%	0%		
216	Integrated Pest Management Systems	12%	0%		
501	New and Improved Food Processing Technologies	3%	10%		
503	Quality Maintenance in Storing and Marketing Food Products	7%	10%		
504	Home and Commercial Food Service	23%	10%		
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%	35%		
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	13%	35%		
	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	23.5	0.9	0.0	0.0
Actual Paid	17.0	0.9	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
548951	46817	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
344442	51278	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1526110	78093	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Home Grown: Home Grown Projects highlighted water conservation, building raised garden beds, growing fruits and vegetables, using pesticides safely, composting, beneficial insects, and pruning fruit producing plants.

Food Safety Training for Food Service Workers: Food Service Workers learned food safety principles for all aspects of the food service industry. Food Safety Classes were taught in 64 of the 67 counties throughout the state of Alabama.

Good Agriculture Practices: Farmers learned how to write Standards of Operation (SOP's) for a Good Agriculture Practices (GAP) for Certification. Also GAP principles were taught to Farmers selling their produce at Farmers Markets. Programs for GAP were taught in 4 regionally located places with individual trained in writing their SOP's. There were 20 workshops taught for farmers selling their produce at Farmers Markets.

Food Safety Training for Food Processors: Processing safety standards were taught to 171 individuals for processing acidified food and seafood under Food and Drug Association (FDA) guidelines. A new Cottage food Law course was added for home food processors to allow individuals to sell to an end consumer. The Food Safety Team taught 419 courses for this group.

Master Food Preserver: Home food preservation principles were taught for water bath canning, pressure canning, freezing, drying and fermentation in 52 of the 67 counties throughout the state of Alabama. A team of Food Safety Regional Agents taught 142 classes in a one to four day sessions of classes.

2. Brief description of the target audience

Home Grown: Residential gardeners growing for their families or as small producers at local farmers'markets.

The target audience was any consumer in the state of Alabama. No individual was excluded or singled out for this training.

Food Safety Training for Food Service Workers: The audience that attended the Food Service certification training course consisted of 1,352 individuals. Of the participants, 736 were (Caucasian) White, 401 were (African-American) Black, 22 were Asian, 21 were Hispanic, 20 were of other races and 8 did not report.

Good Agriculture Practices:

Good Agricultural Practices (GAP) Workshops were taught in counties 8 throughout the state in each geographical location giving the farmers a meeting place that was within a reasonable driving distance. 82 individuals participated, 53 whites, 28 blacks and one Asian attended the meetings.

Farmers Markets: A total of 287 individuals participated in the workshops, 162 were White, 115 were Black, 5 Hispanic, 4 were more than one race and 3 were American Indian.. The majority of the individuals were adults, with only 8 youth in attendance.

Food Safety Training for Food Processors: Three (3) Better Process Control Schools were taught to a total of 22 individuals, with each passing a total of 7 exams covering all aspects of food processing. Food products were tested for 47 individuals to certify that the products were acidified food products. Nutrition Facts Labels were completed for 102 different food products.

Master Food Preserver: Home food preservation principles were taught for water bath canning, pressure canning, freezing, drying and fermentation in 52 of the 67 counties throughout the state of Alabama. 2,431 individuals participated in various food preservation classes. Of the participants, 1645 were (Caucasian) White, 677 were (African-American) Black, 88were Hispanic, 4 were of other races and 10 were more than one race. Of the group, the majority were female (1720) with the remaining 711 being males. 1518 of the participants were adults and 914 were youth.

3. How was eXtension used?

The Alabama Cooperative Extension has been the lead state for the Food Safety Community of Practice (CoP). A core group from ACES started the Food Safety CoP program in 2009. Many publications and information has been posted to eXtension since the start of the CoP in Food Safety. Also, the ACES team has answered many question from "Ask the Expert" concerning all aspects of Food Safety but the majority of the questions answered were concerning Home Food Preservation.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	60742	1569587	23403	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	4	0	4

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 evaluation which are described/explained in the prior 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 this program area 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

- The number of Home Grown workshops/demonstrations offered

Year	Actual
2014	105

Output #3

Output Measure

- The number of Home Grown media stories: print, radio, Facebook, television

Year	Actual
2014	167

Output #4

Output Measure

- GAP Workshops Offered

Year	Actual
2014	8

Output #5

Output Measure

- Number of Participants in workshops

Year	Actual
2014	82

Output #6

Output Measure

- The number of Enhancing the Safety of Locally Grown Foods Workshops Presented

Year	Actual
2014	23

Output #7

Output Measure

- The number of Enhancing the safety of locally grown foods workshop attendees

Year	Actual
2014	287

Output #8

Output Measure

- The number of ServSafe Classes Taught

Year	Actual
2014	143

Output #9

Output Measure

- The number of ServSafe Classes Participants

Year	Actual
2014	1352

Output #10

Output Measure

- The number of products qualified as Acidified Foods

Year	Actual
2014	47

Output #11

Output Measure

- The number of Prepared Nutrition Facts Labels for Alabama Food Entrepreneurs

Year	Actual
2014	102

Output #12

Output Measure

- The number of Food Safety Training for Food Processors: Better Process Control Schools

Year	Actual
2014	3

Output #13

Output Measure

- The number of Food Safety Training for Food Processors: Better Process Control Schools Participants

Year	Actual
2014	22

Output #14

Output Measure

- The number of Master Food Preserver Workshops

Year	Actual
2014	142

Output #15

Output Measure

- The number of Master Food Preserver Workshop Participants

Year	Actual
2014	2978

Output #16

Output Measure

- Master Food Preserver Workshops: The number of Publications Prepared

Year	Actual
2014	2

Output #17

Output Measure

- Number of Downloads for Smartphone App (SOW)

Year	Actual
2014	2753

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	A major outcome will be the number of food service workers who participate in Extension sponsored Food Safety Training.
2	Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Extension Team Projects which have different outcome measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.
3	Increase knowledge of alternate pest management strategies in home food gardens
4	Increase adoption of principles taught: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home
5	# vol's who assist teaching workshops and demonstrations
6	Increase knowledge and adoption of Good Agricultural Practices (GAP)and Good Handling Practices (GHP) for commercial food producers.
7	Increase knowledge and adoption of Better Processing of acidified foods by completing the Better Process Control School.
8	Number of food service workers who increased knowledge in food safety practices
9	The number of participants who increase knowledge of selecting vegetable and fruit varieties for pest resistance.
10	Number of participants who changed their pruning techniques of muscadine grapes
11	Pounds of food produced from the Shoals Community Garden project from spring through fall

12	Increase knowledge and adoption of Good Agricultural Practices (GAP) and Good Handling Practices (GHP) for commercial food producers.
13	The number of participants who increase the practice of safe home food processing
14	The number of individuals who increased in knowledge of food that can be sold under the Cottage Food Law

Outcome #1

1. Outcome Measures

A major outcome will be the number of food service workers who participate in Extension sponsored Food Safety Training.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Extension Team Projects which have different outcome measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Increase knowledge of alternate pest management strategies in home food gardens

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Increase adoption of principles taught: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

vol's who assist teaching workshops and demonstrations

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Increase knowledge and adoption of Good Agricultural Practices (GAP)and Good Handling Practices (GHP) for commercial food producers.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In order for farmers to sell their produce to large retail establishments and the schools their farms must be GAP certified. The buyer of the produce from the retailers to the consumer are looking for safer food.

What has been done

A total of 8 GAP workshops were taught to n=82 participants .

Results

Of the n=82 participants n=21 became Gap certified

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #7

1. Outcome Measures

Increase knowledge and adoption of Better Processing of acidified foods by completing the Better Process Control School.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Number of food service workers who increased knowledge in food safety practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1352

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A food Safety Certification class is required of at least one food service worker in each food service establishment in Alabama. This course has increased the safety of the food served in all food establishments. Also the individual that is certified can increase their income after becoming

certified.

What has been done

1352 individuals have completed the Food Managers certification. Only 273 did not pass the course but did receive a one year certificate of training to allow them time to complete the certification that will last for 5 years.

Results

Food Service Establishments remain open generating revenue and safer food is sold to consumers. The cost of food borne illness in the US as estimated by Scharff was \$152 billion dollars in 2010 but in 2012 the CDC reduced this estimate to \$77.7 billion. By following even one newly learned food safety practice from the Food Service Certification Course a food borne illness could be prevented therefore reducing the cost of illness on society.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service

Outcome #9

1. Outcome Measures

The number of participants who increase knowledge of selecting vegetable and fruit varieties for pest resistance.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	470

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension professionals have noted a resurgent interest in vegetable gardens (Miller and Arnold, Journal of Extension, April 2012). Excluding the cost of garden labor, an average home garden produces \$508 worth of fruits and vegetables, after the average cost (\$209) of materials and irrigation. Local environmental conditions, gardening practices, and crop choices will influence the

actual net value realized by individual gardeners. (Langellotto, Journal of Extension, April 2014)

What has been done

105 workshops, demonstrations and face-to-face interactions were conducted by 13 REAs, 6 CECs, and 3 Specialists

Results

Of the 530 participants 89% (N= 470) (knowledge gain in selecting vegetable and fruit varieties for pest resistance. 95%(N= 503) learned more about trellising muscadines for increased production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

Outcome #10

1. Outcome Measures

Number of participants who changed their pruning techniques of muscadine grapes

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	331

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension professionals have noted a resurgent interest in vegetable gardens (Miller and Arnold, Journal of Extension, April 2012). Excluding the cost of garden labor, an average home garden produces \$508 worth of fruits and vegetables, after the average cost (\$209) of materials and irrigation. Local environmental conditions, gardening practices, and crop choices will influence the actual net value realized by individual gardeners. (Langellotto, Journal of Extension, April 2014)

What has been done

105 workshops, demonstrations and face-to-face interactions were conducted by 13 REAs, 6 CECs, and 3 Specialists. Other projects highlighted seed starting, drip irrigation, "organic" principles, using pesticides safely, composting, and pollinator identification.

Results

Of the 530 participants 63% of participants (n=331) are now pruning their muscadine grapes for increased production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

Outcome #11

1. Outcome Measures

Pounds of food produced from the Shoals Community Garden project from spring through fall

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2098

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension professionals have noted a resurgent interest in vegetable gardens (Miller and Arnold, Journal of Extension, April 2012). Excluding the cost of garden labor, an average home garden produces \$508 worth of fruits and vegetables, after the average cost (\$209) of materials and irrigation. Local environmental conditions, gardening practices, and crop choices will influence the actual net value realized by individual gardeners. (Langellotto, Journal of Extension, April 2014)

What has been done

A community garden was started in Florence, AL in spring of 2014.

Results

The 48 beds adopted by neighboring residents grew a total of 2,098 pounds of produce. This garden was created specifically for the neighborhood surrounding the Extension office: small urban lots, military veterans, low-income, and physically disabled citizens.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

Outcome #12

1. Outcome Measures

Increase knowledge and adoption of Good Agricultural Practices (GAP) and Good Handling Practices (GHP) for commercial food producers.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In order for farmers to sell their produce to large retail establishments and the schools their farms must be GAP certified. The buyer of the produce from the retailers to the consumer are looking for safer food.

What has been done

A total of 8 GAP workshops were taught to n=82 participants .

Results

Of the n=82 participants n=21 became Gap certified

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #13

1. Outcome Measures

The number of participants who increase the practice of safe home food processing

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2979

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Home Food processing is on the increase with the new generation looking to eat less processed foods and to grow their own foods. This generation has never done this type of food processing before. Therefore, the Alabama Cooperative Extension System has taught for generation safe home food processing.

What has been done

A team of Food Safety Regional Agents (9) have taught 142 classes in 52 of the 67 counties in Alabama. These classes include teaching principles of pressure canning, water bath canning, freezing and drying of foods.

Results

Of the n=2479 individuals completing the classes n=358 completed the pre and posttests. Of the group n=235 had done home food preservation before while n=110 had never done home food processing before. When asked how to properly process jams and jelly n=203 answered incorrectly. However in the post test n=320 stated they would water bath can their jams and jellies in the future. When asked in the pre test "Do you water bath can Green Beans" n=138 answered yes. In the post test n=353 stated they would pressure can their green beans in the future.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service

Outcome #14

1. Outcome Measures

The number of individuals who increased in knowledge of food that can be sold under the Cottage Food Law

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	419

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

New Cottage Food Law was passed in the state of Alabama. As part of the new law a food safety training course was required before the individuals could sell their products.

What has been done

N=64 certifying food safety classes were taught through out the state. A total of n=419 individuals completed the certification required to sell foods from their home.

Results

This certification and the ability to sell foods made in their will result in additional income for individuals. Under the law an individual can sell up to \$20,000 of non-hazardous foods from their home. If all 419 met this potential, 12 million dollars of revenue could be realized by the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Food Service Establishments remain open generating revenue and safer food is sold to consumers. The cost of food borne illness in the US as estimated by Scharff was \$152 billion dollars in 2010 but in 2012 the CDC reduced this estimate to \$77.7 billion. By following even one newly learned food safety practice from the Food Service Certification Course a food borne illness could be prevented therefore reducing the cost of illness on society. Of the 530 participants 89% (N= 470) (knowledge gain in selecting vegetable and fruit varieties for pest resistance. 95%(N= 503) learned more about trellising muscadines for increased production. Of the 530 participants 63% of participants (n=331) are now pruning their muscadine grapes for increased production.

The 48 beds adopted by neighboring residents grew a total of 2,098 pounds of produce. This garden was created specifically for the neighborhood surrounding the Extension office: small urban lots, military veterans, low-income, and physically disabled citizens. Of the n=82 participants n=21 became Gap certified. A total of 22 individuals were certified through the Auburn University ACES Better Process Control School. Of the n=2479 individuals completing the classes n=358 completed the pre and posttests. Of the group n=235 had done home food preservation before while n=110 had never done home food processing before. When asked how to properly process jams and jelly n=203 answered incorrectly. However in the post test n=320 stated they would water bath can their jams and jellies in the future. When asked in the pre test "Do you water bath can Green Beans" n=138 answered yes. In the post test n=353 stated they would pressure can their green beans in the future. This certification and the ability to sell foods made in their will result in additional income for individuals. Under the law an individual can sell up to \$20,000 of non-hazardous foods from their home. If all 419 met this potential, 12 million dollars of revenue could be realized by the state.

Key Items of Evaluation

Participants in the Home Grown project will have successful gardens by implementing the recommended techniques. Following these recommendations can also reduce unnecessary or wasteful pesticide usage and exposure; increased soil organic matter can increase soil water-holding capacity and soil structure, enhance fertility management, and enhance

irrigation efficiency. A family garden can minimally add \$508 worth of fruits and vegetables to a family's resources (Gail Langellotto, JOE 4/14). Add to this a national need to increase consumption of fruits/vegetables; the home garden is a prime opportunity for improving a family's diet. People who grow/tend a garden are more likely to eat greater quantities of fruits/vegetables.

Home Food Processors can now legally sell non-hazardous foods that they prepare in their home kitchens. As part of the new law a food safety course must be taken and an exam passed to sell their products. This will be a source of additional income for those struggling to make end meet. It will also give a spring board for individuals to see what it take to process food to sell. They may be able to start at this level and become a large processor.