V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Food Safety

☑ 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
205	Plant Management Systems	5%		5%	
206	Basic Plant Biology	0%		10%	
212	Pathogens and Nematodes Affecting Plants	0%		5%	
215	Biological Control of Pests Affecting Plants	20%		5%	
216	Integrated Pest Management Systems	25%		10%	
307	Animal Management Systems	5%		5%	
311	Animal Diseases	15%		40%	
315	Animal Welfare/Well-Being and Protection	5%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	15%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	8.0	0.0
Actual Paid Professional	3.9	0.0	0.3	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**
326012	0	107354	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
326012	0	107354	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
543676	0	504463	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The food safety efforts focus on ensuring a safe food supply in the state of Connecticut and across New England. Research and Extension programs address pre-harvest/slaughter and post harvest/slaughter food safety at farm, processor, food service and consumer levels. Our programs include Good Agricultural Practices (GAP) training for crop producers, Hazardous Critical Control Points (HACCP) training for seafood and meat producers and handlers, chemical residue analysis of foods, and safe practices for food storage for homeowners.

Based on stakeholder input, food safety is a high priority area for our programs. In view of recent instances of contaminated foods, people remain very concerned about unwanted chemical, biological and physical hazards in food, beverages and consumer products. Research and Extension teams worked to identify problems and challenges most relevant to the state and region, and worked with stakeholders to fully describe and address the current situation.

Activities included:
- Food Safety workshops
- Consumer focused websites
- Training for processors, dealerrs, importers, harvesters, and regulatory personnel
- Fact sheets, newsletter articles, and bulletins
- One on one consultations
- Basic and applied research projects

2. Brief description of the target audience

- Consumers
- Farmers/producers - produce, meat and poultry, cider/juices, cheeses; seafood
- Agency and organizations (staff) that serve or handle food at: camps; food pantries and soup kitchens; schools; day care centers, Head Start, senior centers, etc.
- Food related businesses - processors, farmers' market masters and vendors, etc. Seafood industry: seafood processors, dealers, harvesters, importers, and regulatory personnel.
- Researchers, state, regional, national and internationally.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9400	40200	140	30

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

Patent Applications Submitted

Year: 2013

Actual: 1

Patents listed

N-linked glycosylation alteration in E1 glycoprotein of classical swine fiver virus and novel classical swine fever virus vaccine

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	9	4	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Face to face general group education sessions (workshops, etc.)

Year	Actual
2013	81

Output #2

Output Measure

- New or updated web page(s)

  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Diagnostic tests conducted
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Individual consultations (in person, via e-mail, etc.)

Year	Actual
2013	189

Output #5

Output Measure

- Training conferences or sessions hosted or conducted
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Fact sheets, bulletins and newsletters written or edited

Year	Actual
2013	17

Output #7

Output Measure

- Undergraduate and graduate students supervised

Year	Actual
2013	20

Output #8

Output Measure

- Formal Extension outreach programs

Year	Actual
2013	33

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase number of viable technologies to improve food safety
2	Reduce incidence of foodborne illness
3	Increase adoption of recommended safe food handling practices at the individual, family,community, production, and supply system levels
4	Increase knowledge and use of Good Agricultural Practices (GAP)

Outcome #1

1. Outcome Measures

Increase number of viable technologies to improve food safety

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Reduce incidence of foodborne illness

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Salmonella in poultry can cause human foodborne infection when the animal infection spreads to eggs or their products and enters the food chain producing contaminated food. Every year, approximately 40,000 cases of salmonellosis are reported in the U.S. Because many milder cases are not diagnosed or reported, the actual number of infections may be 30 or more times greater. Young children, the elderly, and the immunocompromised are the most likely to have severe infections. Approximately 400 persons die each year with acute salmonellosis.

What has been done
Research was conducted on new types of feed supplements to help poultry grow, produce more efficiently, and produce immunity against Salmonella. Over 500 commercial poultry producers from throughout the North East attended seminars, conferences or individual consultations on using PDAs to control Salmonella and Camplobactor in poultry. In addition, approximately 2,000 indirect contacts had access to data published on websites, newsletters and journal articles directed to small poultry flock owners and commercial producers.

Results

Through direct and indirect outreach activities approximately 2,500 poultry producers and small flock owners in Connecticut and New England gained knowledge on reducing salmonella in poultry which is a leading cause of human foodborne infection.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

Increase adoption of recommended safe food handling practices at the individual, family,community, production, and supply system levels

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	550

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Connecticut food safety regulations currently in place, the recently passed Food Safety Modernization Act, and Hazard Analysis Critical Control Point (HACCP) regulations require that meat and poultry, seafood, and fresh juice food processing operations write and implement food safety plans and/or complete training programs that will serve to prevent foodborne illnesses. Regional training programs that help processors meet these regulations are essential to their ability to comply.

What has been done
UConn Extension partnered with the University of Rhode Island and faculty from the University of Vermont to offer two meat and poultry HACCP courses per year in CT; developed and

implemented the first New England Meat Conference(NEMC), attended by 325 meat processors, producers, and service providers; and partnered with the Connecticut Farm Bureau Association to provide a one day workshop for farmers interested in on-farm processing of acidified foods.

Results
All of these programs helped processors comply with regulations that require a training component before processing meat and poultry, seafood, and acidified foods in the farm home kitchen. A total of 35 meat and poultry processors, 76 seafood processors and 21 high school students attended the programs. Twenty-eight farmers attended the acidified food training program. After attending training participants are prepared to develop food safety plans and/or use safe food handling practices to reduce the risk that their products are involved in a foodborne disease outbreak. General workshop (NEMC) programs serve to reinforce the skills/knowledge gained at mandatory training programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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 #4

1. Outcome Measures

Increase knowledge and use of Good Agricultural Practices (GAP)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	305

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
From 1998 to 2008, 46% of foodborne illnesses were attributed to produce, according to the Centers for Disease Control (CDC). The USDA and FDA published Good Agricultural Practices (GAP) produce safety guidelines to help farmers minimize risks for foodborne illness from fresh produce. While producers are not required to have a GAP program by regulation, many of their

commercial customers (retailers, distributors) are requiring GAP programs and audits. In addition, as more schools, community organizations, and restaurants develop produce gardens with the intent to supply produce to foodservice, food donation organizations or restaurants, this potential client group will benefit from GAP education targeted to their program/operation.

What has been done
We provided 4 workshops in January/February 2013: a 2-day GAP school, a GAP food safety plan writing workshop; an update for those that had previously attended the GAP school, and a GAP Lite program for those that are not preparing for an audit. Farm visits are provided as an extension of GAP workshops to help farmers with food safety plan writing. A short talk was provided at the annual UConn Extension Fruit and Vegetable Growers workshop and a session on produce safety, GAP and the new Food Safety Modernization Act was presented by invitation at the Northeast FDA regional meeting in August 2013.

Results
Eight farms passed USDA third party audits in 2013 which allowed them to sell produce to major distributors/supermarkets in Connecticut, workshops reached 39 farmers, increasing awareness and knowledge of safe on-farm produce handling practices. This contributed to the development of a culture of food safety on the Connecticut farm. Thirty-nine farmers were reached with 4 programs offered as part of the UConn Extension GAP School. Evaluations indicated that all participants learned something new or more about something they already knew, when asked about each topic covered in the workshop. $26,259 was received from the Connecticut Department of Agriculture/USDA Specialty Crops Program to fund the project, Connecticut?s On-farm Packing Houses: GAP/GHP Needs Assessment, Resources, and Training.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The following relates to the evaluation results for the GAP program:

In September 2012 an on-line survey was completed to inform the development of produce safety/Good Agricultural Practices programming for the 2013 program year. 127 farmers responded to the survey. Data from the survey provided updated information including farmer attitudes/opinions about GAP and produce safety; training and information preferences; possible influence of farm size, longevity, and past GAP program attendance on willingness to participate in/or to develop a GAP program. Results indicated: 83% of farmers had not written a food safety plan, though 20.3% indicated that all produce farmers should have food safety plans; 44% said that they were interested in participating in a basic GAP workshop; 24.1% are interested in a GAP update annually; 20.5% are interested in a food safety plan writing workshop; 43% indicated that they are still confused by GAP; and 32% were not interested in any kind of produce safety training.

Post-workshop evaluations were provided at all UConn Extension GAP/Produce safety workshops. A follow-up survey was conducted in 2012. A follow-up survey will be conducted of all 2013-2014 workshops in the fall of 2014.

Key Items of Evaluation