V(A). Planned Program (Summary)

Program # 6

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
307	Animal Management Systems	0%		20%	
315	Animal Welfare/Well-Being and Protection	0%		5%	
504	Home and Commercial Food Service	25%		5%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	15%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		50%	
723	Hazards to Human Health and Safety	35%		10%	
	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	45.0	0.0	13.0	0.0
Actual Paid Professional	40.0	0.0	20.2	0.0
Actual Volunteer	28.0	0.0	0.0	0.0

2. Institution Name: Washington State University

Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
223126	0	152880	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
223126	0	152880	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1702257	0	2720539	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Food safety is an important public health issue with foodborne pathogens annually causing an estimated 48 million illnesses, 128,000 hospitalizations and 3,000 deaths in the United States. Maintaining a safe food supply requires vigilance from farm to table, and involves food producers, processors, retailers and consumers. WSU Extension interacts with other state and national agencies, such as the Washington State Department of Health, Washington State Department of Agriculture, USDA, FDA, CDC and EPA to address food safety issues in the Pacific Northwest. Furthermore, food safety educators must communicate with representatives throughout the food chain. Interaction among these groups is vital to address the breadth of food safety issues. Addressing food safety issues requires examination of the farm-to-table continuum in order to understand and solve food safety concerns. Performing educational outreach to promote food safety throughout the farm-to-table continuum in the state can reduce foodborne illness prevalence.

We are conducting significant research into the epidemiology of foodborne diseases, especially in animal herds, and in mechanisms whereby pathogenic organisms reach the consumer. Conferences, workshops, and onsite visits were conducted. In some counties, volunteers were trained to engage with the general public to provide training on home food preservation. Publications and websites were maintained as outreach instruments to the food industry and to consumers. A major effort involved the transfer of microwave sterilization technology, which has achieved FDA approval at two levels, into commercial applications. We are also adapting microwave sterilization technology to the technically less demanding process of pasteurization through a large USDA food safety grant.

2. Brief description of the target audience

Food processors, food purveyors, food producers and the general public.

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	57673	234893	32500	98332

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	7	19	26

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of conferences, workshops or other training sessions conducted by WSU Extension educators related to food safety.

Year	Actual
2013	730

Output #2

Output Measure

- Number of peer reviewed (official) WSU Extension publications published per year

Year	Actual
2013	6

Output #3

Output Measure

- Number of graduate students with a significant professional orientation in the area of Food Safety.

Year	Actual
2013	21

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of evaluated participants who demonstrated increased knowledge and skills relative to key learning objectives.
2	Percentage of evaluated participants who applied at least one practice learned from WSU Extension workshops, conferences, or training sessions.
3	Percentage of participants who will institute a HACCP or GAP plan as a result of attending WSU workshops.

Outcome #1

1. Outcome Measures

Percentage of evaluated participants who demonstrated increased knowledge and skills relative to key learning objectives.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food safety is an important public health issue with foodborne pathogens causing an estimated 48 million illnesses, 128,000 hospitalizations and 3,000 deaths yearly in the United States. Maintaining a safe food supply requires vigilance from farm to table, and involves food producers, processors, retailers and consumers. WSU Extension interacts with other state and national agencies, such as the Washington State Department of Health, Washington State Department of Agriculture, USDA, FDA, CDC and EPA to address food safety issues in the Pacific Northwest.

What has been done
In 2013, a second class of 21 WSU staff and volunteers were trained to be Food Safety Information Assistants, bringing the total increase in two years to 52 FSIA?s across 27 counties. Work with clientele included classes and workshops, along with individual consultations of food safety topics.

Results
Program results, assessed by pre and post surveys of participants indicated 90% of program participants increased their knowledge of food safety practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
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
723	Hazards to Human Health and Safety

Outcome #2

1. Outcome Measures

Percentage of evaluated participants who applied at least one practice learned from WSU Extension workshops, conferences, or training sessions.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The costs of one case of foodborne illness to a consumer are up to $100,000 or more in health costs. An outbreak of food borne illness can cost that facility upwards of $250,000 or more in lost revenue. Therefore safe food handling practices are important to the physical health of the community members, but also the health economic or business community's health.

What has been done
4-hour food safety courses for food service workers were delivered to meet the new PIC educational requirements. The course addresses the top food rule regulations and procedures and basic food safety practices that prevent foodborne illness outbreaks. Consumer training programs and consultations were also delivered to address food safety in the home.

Results
Program assessment indicated that 75% of program participants applied one or more new practices to reduce risk and increase safety in handling and processing food.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
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
723	Hazards to Human Health and Safety

Outcome #3

1. Outcome Measures

Percentage of participants who will institute a HACCP or GAP plan as a result of attending WSU workshops.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food safety is an important public health issue with foodborne pathogens causing an estimated 9.4 million illnesses, 55,961 hospitalizations and 1,351 deaths yearly in the United States. Maintaining a safe food supply requires vigilance from farm to table, involving food producers, processors, retailers and consumers.

What has been done
WSU Extension Food Safety Specialists serve on the steering committee for the Produce Safety Alliance, Northwest Food Processors Association Operations and Technical Committee and Northwest Meat Processors Association Board. To provide FSMA outreach 5 workshops in Washington and Oregon were delivered to target audiences. Two follow-up listening sessions were delivered during a FDA visit with participants attending from Washington and Oregon.

Results
FSMA, HACCP and GAPs workshop participants increased knowledge of related topics and anticipated increased employee training, agricultural water testing, economic benefits and improved record keeping. HACCP workshop participants demonstrated increased post-test scores, and 70% indicated intent to institute plans.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

504	Home and Commercial Food Service
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
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Numerous external factors can impact the success of our extension and research programs, including available budget resources. Apart from the general confusion surrounding the sequester and its implementation, these did not substantially impact the plans for this program during this reporting year.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Our evaluation methodologies were designed to assess the amount of acquired learning, degree of application of learning and the social, environmental and economic value of this application. We used post-program, retrospective and before and after assessments to document changes in knowledge. We used survey methods after an appropriate time lag to assess how much of the new knowledge was actually applied. Faculty, staff, and volunteers continue to expand their educational programming through increased use of social media and online educational methods to minimize the risk of food borne illness and promote a safe food supply for Washington residents.

Key Items of Evaluation

During 2013, WSU Extension continued to increase our capacity to provide consumer food safety and preservation education across the state. After two years of capacity training, we have 52 trained Food Advisory Information Assistants that can locally answer questions, test pressure gauges and teach classes.

In Thurston County, of the 30 pressure gauges brought into the Extension office for testing, 19 did not read accurately. Most of the inaccurate gauges tested high, and low acid foods do not receive proper processing treatment when gauges test high.

80% of the individuals who attended classes and outreach events on home canning reported an increased knowledge of canning foods safely.

An analysis on of Food Preservation calls and questions submitted to the Extension program revealed that 20% are concerned with a food quality issue, 80% concern a food safety issue. Of those that concern food safety, 50% concern safety to the degree it could cause severe disability or death. Each case of food-borne illness is estimated to cost $1,851. Applied to the number of safety related contacts in just two Southcentral counties in WA, there is a potential economic impact of $10,139,788. Each case of botulism poisoning is estimated to cost $726,362.