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

**Program # 5**

**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 | 10% | | 0% | |
| 308 | Improved Animal Products (Before Harvest) | 5% | | 0% | |
| 315 | Animal Welfare/Well-Being and Protection | 5% | | 0% | |
| 503 | Quality Maintenance in Storing and Marketing Food Products | 5% | | 0% | |
| 703 | Nutrition Education and Behavior | 20% | | 0% | |
| 711 | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources | 5% | | 6% | |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins | 25% | | 94% | |
| 723 | Hazards to Human Health and Safety | 20% | | 0% | |
| 806 | Youth Development | 5% | | 0% | |
| | **Total** | 100% | | 100% | |

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

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

| Year: 2012 | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| Plan | 10.0 | 0.0 | 2.5 | 0.0 |
| Actual Paid Professional | 3.6 | 0.0 | 1.4 | 0.0 |
| Actual Volunteer | 0.1 | 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** |
| 205680 | 0 | 364250 | 0 |
| **1862 Matching** | **1890 Matching** | **1862 Matching** | **1890 Matching** |
| 205680 | 0 | 364250 | 0 |
| **1862 All Other** | **1890 All Other** | **1862 All Other** | **1890 All Other** |
| 766756 | 0 | 1312472 | 0 |

## V(D). Planned Program (Activity)

### 1. Brief description of the Activity

• Conduct workshops and facilitate meetings. Workshops include ServSafe® Certification food safety, food preservation, HACCP implementation and GAPS preparation.
• Provide regulatory updates and training for the grain supply chain participants and the agencies responsible for regulating the industry.
• Develop food safety educational materials and resources, such as web based tools and Extension publications.
• Provide training and technical assistance such as fundamental food safety training for volunteer staffed events, line level employees, and respond to specific questions related to application of food safety principles.
• Provide training and technical assistance in the dairy, beef and swine industries.

Faculty participate in the following associated multistate research committees: NC213, NC1023, NC1183, NC1194, NE1028, S294, S1027, and S1033.

### 2. Brief description of the target audience

Food growers, food processors, foodservice management and staff in commercial and noncommercial operations, consumers, and food stand volunteers.

### 3. How was eXtension used?

eXtension was not used in this program

## V(E). Planned Program (Outputs)

### 1. Standard output measures

| 2012 | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| **Actual** | 10900 | 9651047 | 1300 | 100 |

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

**Patent Applications Submitted**

Year: 2012

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

| 2012 | Extension | Research | Total |
|---|---|---|---|
| **Actual** | 6 | 5 | 0 |

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

**Output Target**

**Output #1**

**Output Measure**

- Number of adult participants in Extension programs on food safety.

| Year | Actual |
|---|---|
| 2012 | 38720 |

**Output #2**

**Output Measure**

- Number of hits on Iowa State University Extension food safety project websites.

| Year | Actual |
|---|---|
| 2012 | 6253155 |

**Output #3**

**Output Measure**

- Number of adults attending HACCP training.

| Year | Actual |
|---|---|
| 2012 | 184 |

**V(G). State Defined Outcomes**

## V. State Defined Outcomes Table of Content

| O. No. | OUTCOME NAME |
|---|---|
| 1 | Number of people receiving food safety certification. |
| 2 | Percent of adult EFNEP/FNP graduates with a positive change in food safety practices. |
| 3 | Number of consumers who understand modern livestock practices as they pertain to animal health and comfort, quality and safety. |
| 4 | Number of dietary professionals that understand modern livestock practices as they pertain to animal health and comfort, quality and safety. |
| 5 | Number of youth and teachers that increase their awareness of modern livestock practices as they pertain to animal health and comfort, quality and safety. |
| 6 | Million dollars saved throughout the food chain by implementing Quality Management Systems through educational programs such as the Iowa Quality Grain Initiative, Pork Quality Assurance Plus® and Transport Quality Assurance® |
| 7 | Number of producers who increase their awareness of the new Food Security Act and food safety regulations. |
| 8 | Number of adults that increase their awareness of safe home food preservation techniques. |
| 9 | Number of fruit and vegetable producers who increase their knowledge of food safety practices. |

## Outcome #1

### 1. Outcome Measures

Number of people receiving food safety certification.

### 2. Associated Institution Types

- 1862 Extension

### 3a. Outcome Type:

Change in Knowledge Outcome Measure

### 3b. Quantitative Outcome

| Year | Actual |
|---|---|
| 2012 | 1011 |

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**
It is estimated 48 million people experience a foodborne illness each year with 3,000 deaths resulting from these illnesses. Providing food handlers and decision makers involved in food production, processing, and service from farm to fork with knowledge about risks can help reduce incidents of foodborne illness by leading to better practices.

**What has been done**
Over 1,000 Iowans (n = 1011) participated in an 8-hour workshop about safe food handling practices and 5,070 participated in food safety sessions related to on farm food safety, safe food preservation, or safe handling of food when working in retail outlets.

**Results**
Of the 1,011 who participated in the 8-hour certification course workshop, 92% (n = 1098) were successful in earning certification.

### 4. Associated Knowledge Areas

| KA Code | Knowledge Area |
|---|---|
| 503 | Quality Maintenance in Storing and Marketing Food Products |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins |

**Outcome #2**

**1. Outcome Measures**

Percent of adult EFNEP/FNP graduates with a positive change in food safety practices.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 64 |

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

**Issue (Who cares and Why)**
Previous EFNEP and SNAP-Ed data show that low-income families do not, seldom, or sometimes (as opposed to most of the time or almost always) practice food safety management skills such as thawing and storing food properly. These are skills that can prevent or alleviate illness.

**What has been done**
As part of EFNEP and SNAP-Ed, a series of eight to ten nutrition lessons is taught by paraprofessional nutrition educators to low-income families with children age ten and under and pregnant women/teens. These lessons show participants how to choose nutritious foods, stretch their food dollars, handle food safely, be physically active, and prepare nutritious recipes. Each lesson includes a component relating to food safety.

**Results**
At entry to the program 55% (568 of 1,030 participants) demonstrated acceptable food safety practices (i.e. thawing and storing foods properly). Following participation in at least eight lessons 85% (874 of 1,030 participants) at the end of the program demonstrated acceptable food safety practices (i.e. thawing and storing foods properly).

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 703 | Nutrition Education and Behavior |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins |

**Outcome #3**

**1. Outcome Measures**

Number of consumers who understand modern livestock practices as they pertain to animal health and comfort, quality and safety.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 3300 |

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

**Issue (Who cares and Why)**
A large percentage of the US population lives in an urban or suburban environment and is disconnected from agriculture and food production. At the same time, there is increasing interest and concern in the general population about food safety, quality, animal health and wellbeing, farm systems that produce food, and sustainability. Consumers and the public need access to unbiased information and educational events that can enhance their knowledge in these areas in order to make sound nutrition decisions/practices.

**What has been done**
ISU Extension Dairy Team partnered with Iowa's dairy producer and industry associations, other farm and commodity organizations (ISU site) and the regional dairy check-off organization, Midwest Dairy Association, to plan and host 3 Dairy Farm Open House workshops. The purpose was to provide experiential events incorporating a tour of a dairy with designated stations to showcase and educate on specific attributes of dairy farms (animal comfort and health, milking practices, product safety and quality, environmental stewardship). A post workshop survey to rate their experience of the dairy tour, assess their knowledge and trust of dairy practices, and evaluate their interests in the dairy industry and dairy products was conducted at 2 sites (1900 attendees).

**Results**
* A total of 3300+ participants were involved in these 3 events with many families and young children, and most participants from non-agricultural backgrounds and 321 post event surveys were completed.
* 100% rated successful/educational (86% rating excellent; 14% rating very good (3.89/4.00 rating).
* Prior to the event, 81% had a positive (63% extremely positive) opinion and trust in dairy farms

(3.46/4).
* Post workshop, 96% had a positive (84% extremely positive) opinion and trust in dairy farms (3.78/4).
* Post workshop, 96% believed dairies provided the best care and handling of animals (3.68/4).
* Post workshop, 92% believed dairies protect the environment and excel at environmental stewardship (3.66/4).
* Post workshop, 97% stated dairies provide extremely safe and wholesome milk & dairy products (3.79/4).
* 100% supported growth of the dairy industry in Iowa.
* Post workshop, 99% indicated modern dairies and dairy practices were impressive and had extreme confidence and trust in dairy farms and the dairy industry.
* Participants' opinion of modern dairies following the event was positively and significantly increased.
* Participants' main issues encompassed questions regarding nutrient and environmental management.

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 307 | Animal Management Systems |
| 308 | Improved Animal Products (Before Harvest) |
| 315 | Animal Welfare/Well-Being and Protection |
| 703 | Nutrition Education and Behavior |
| 806 | Youth Development |

**Outcome #4**

**1. Outcome Measures**

Number of dietary professionals that understand modern livestock practices as they pertain to animal health and comfort, quality and safety.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 212 |

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

**Issue (Who cares and Why)**

There are a wide variety of highly nutritious, safe and affordable dairy products that meet and exceed all milk quality standards and tests. Differential labeling is sometimes confusing to consumers, and they also have many interests and questions regarding how their food is produced, and the quality, safety, and assurance of animal wellbeing, farm sustainability, and dairy product quality and safety. Dietary and health professionals, dairy grocer case managers, and in-store dietary professionals (only some stores) are often the front line and only source of credible information and recommendations for consumers and the public. Many of these professionals have never been exposed to agriculture, farms, and different dairy production systems and practices that form the basis for the great variety of dairy products as well as consumers' attitudes, understandings, and choices.

**What has been done**

Three all-day dairy academies (which included both on-farm and milk processing plant tours and education modules, as well as other presentations on dairy practices, dairy sustainability, animal health and wellbeing) were conducted for dairy grocer case managers and in-store dieticians and health professionals by ISU Extension and Midwest Dairy Association. Pre- and post-tests on participants' understanding of dairy facts and knowledge were conducted, as well as a personal satisfaction survey.

**Results**

* 100% ranked the dairy academy as a highly effective educational event.
* 100% ranked the dairy academy as a highly credible, understandable source of dairy practices and information.
* 67% increase in post workshop test scores compared to pre workshops scores.
* Dairy grocer case managers (DGCM) rated the dairy academy as most highly effective educational training of their careers.
* 100% DGCM stated they had greater understanding of dairy practices and dairy sustainability.
* 100% DGCM stated they would use this information with their peers and clients.
* DGCM estimated individual interactions with >1000 customers per year and felt they were the sole person at the store to respond to dairy issues and questions.
* In-store dieticians also ranked the information presented and educational aspects very highly.
* 100% planned future use with peers and clients.
* In store dieticians estimated 300+ individual clients and contacts/year.

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 307 | Animal Management Systems |
| 308 | Improved Animal Products (Before Harvest) |
| 315 | Animal Welfare/Well-Being and Protection |
| 703 | Nutrition Education and Behavior |
| 711 | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources |

**Outcome #5**

**1. Outcome Measures**

Number of youth and teachers that increase their awareness of modern livestock practices as they pertain to animal health and comfort, quality and safety.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 1200 |

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

**Issue (Who cares and Why)**
Teachers and young student often have limited knowledge about nutrition and food safety and quality, animal health and well- being, and farm systems that produce food. Educators and their students need access to unbiased information and educational opportunities and curriculum that can enhance their knowledge in these areas in order to make sound nutrition decisions and practices.

**What has been done**
The Iowa's Dairy Story program and curriculum was established and coordinated by a three-way partnership between Iowa State University Extension and Outreach and its county Extension Councils, Northeast Iowa Community College, and the Northeast Iowa Dairy Foundation. The program consists of in school curriculums for grades 3-5 (4 pre-trip and 3 post-trip lessons), as well as an on-farm, hands-on module that combined a focus on animal health and wellbeing, modern dairy practices, environmental stewardship, sustainability, and milk and dairy product quality, safety, and nutrition information. A 2012 teacher survey of these schools was conducted to assess the program (content, communications, and presenters) as well as the 4 pre-trip and 3-post trip lessons (1-10 system; 1 = poor; 5 = average; 10 = excellent). A student survey will be conducted in 2013.

**Results**
* 38 schools in NE Iowa participate in the program.
* Over 12,500 students have participated in the program over the last decade.
* 1200 students and teachers were impacted by this program in 2012.
* 100% of teachers ranked content and presenters as excellent (9.83/10 and 9.92/10, respectively).
* 100% ranked communications as superb (10/10: perfect scores).

* 4 Pre-trip lesson materials and curriculum ranked very high (9.64, 9.38, 9.82, and 9.82, respectively).
* 3 Post-trip lesson materials and curriculum ranked very high (9.73, 9.73, and 9.64, respectively).
* This program has enhanced both student and teacher knowledge of dairy food production and nutrition.

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 307 | Animal Management Systems |
| 315 | Animal Welfare/Well-Being and Protection |
| 703 | Nutrition Education and Behavior |
| 806 | Youth Development |

**Outcome #6**

**1. Outcome Measures**

Million dollars saved throughout the food chain by implementing Quality Management Systems through educational programs such as the Iowa Quality Grain Initiative, Pork Quality Assurance Plus® and Transport Quality Assurance®

Not Reporting on this Outcome Measure

**Outcome #7**

**1. Outcome Measures**

Number of producers who increase their awareness of the new Food Security Act and food safety regulations.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 200 |

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

**Issue (Who cares and Why)**
The introduction of enhanced food safety regulations in January 2011 (Food Safety Modernization Regulations) by the Food and Drug Administration has stakeholders in the food industry

scrambling to determine what is required for compliance. The new regulations, if not followed, will cost food industries thousands of dollars and potential failure. This uncertainty reaches from production to the consumer. Stakeholders are motivated by both regulatory compliance and a desire to provide a reliable and quality product to their customers as well as minimizing personal liability risk because the demand for locally grown fruit and vegetables by consumers has dramatically increased.

**What has been done**
FDA and USDA are partnering with extension and outreach programs throughout the U.S. to ensure that food companies are prepared for the new regulations. Three workshops were conducted by Value-Added Ag staff to review food safety regulations for growers and community leaders to address related compliance issues to the new regulations. Although food safety is incorporated into all food related programing conducted by Value-Added Ag staff, technical assistance was provided directly to one grower group to develop farm food safety plans as the first step to acquiring GAP certification.

The Extension food safety team has developed a bi-annual food safety regulation workshop series, available face-to-face and via the web, to provide extension guidance to food companies. The series has reached 44 food companies throughout the U.S. and Puerto Rico. With each workshop/webinar, handouts and guidance documents have been developed to assist food companies with understanding the new regulations. The webinar series is available for viewing at any time and will be offered again in 2013.

To address the need to keep local food growers throughout Iowa in compliance with the new regulations, a sequential, 3-level on-farm food safety pilot program designed to provide educational guidance based on the marketing venue of choice to address food safety assurance has been created by the Extension food safety team.

**Results**
Five of the participating farms developed an understanding and began implementation of their Farm Food Safety Plan and indicated that they could now achieve GAP certification if and when customers request it. Participants indicated an increased sense of confidence that they are providing a safe and reliable product and can continue to meet their customers' safety requirements up to and including GAP certification. Workshops survey results showed a clear need for continued resources and education on risk management tools and resources needed for all links in the food chain.

In the bi-annual food safety regulation workshop series, pre and post knowledge assessments are conducted with each workshop/webinar along with a 3-6 month follow up for the Introduction to FSMA workshop. There was a significant change in the knowledge gained about FSMA regulations after the completion of the webinar (n=22). In the 3-month follow-up assessment (n=12), participants indicated that they made procedural changes in response to the webinar and had shared the information with an average of 4 other employees within their organization. For the HACCP versus Preventive Controls Workshop and Auditor View workshops (n=3 returned), a general knowledge gained survey was provided along with 3 to 6 month individual follow-up surveys.

For the auditor workshop, all participants that returned the survey indicated that they gained significant knowledge as a result of the webinar and they would adopt the information within their companies.

Each of the grower workshops had a pre- and post-workshop knowledge change assessment

along with a 3 to 6-month behavior change assessment. The first three workshops revealed a significant change in food safety knowledge along with significant indicated behavioral changes. Some of the behavioral changes are: water and soil testing, traceability plan formation, record keeping changes, and training of seasonal personnel. These behavioral changes are significant because they represent the main factors attributable to foodborne illness outbreaks within fruits and vegetables (i.e. water, soil, personnel, and record keeping).

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 307 | Animal Management Systems |
| 503 | Quality Maintenance in Storing and Marketing Food Products |
| 711 | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources |
| 723 | Hazards to Human Health and Safety |

**Outcome #8**

**1. Outcome Measures**

Number of adults that increase their awareness of safe home food preservation techniques.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 4356 |

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

**Issue (Who cares and Why)**
Interest in home food preservation has increased due to the local food movement and the economy. According to the National Center on Home Food Preservation 1 in 5 U.S. households can their own food; however, many are unaware of the food safety issues that home food preservation encompasses.

**What has been done**
Of the 471 adults who participated in food preservation education programming, 48 completed online food preservation lessons, 21 attended a four hour food preservation workshop, 5 had their pressure canner tested and 397 attended a general food preservation class.

**Results**
Of those who took part in the online food preservation lessons, there was a 53% increase in those who reported high or very high knowledge about foodborne illness, a 44% increase in those stating high or very high knowledge of safe food handling practices, and a 61% increase in those reporting high or very high knowledge of recommended canning practices after the lessons.

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|
| 703 | Nutrition Education and Behavior |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins |

**Outcome #9**

**1. Outcome Measures**

Number of fruit and vegetable producers who increase their knowledge of food safety practices.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

| Year | Actual |
|---|---|
| 2012 | 32 |

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

**Issue (Who cares and Why)**
The growing demand for local and regional food offers an unprecedented market opportunity for small and midsized farms and holds great promise for increasing the access to healthy and affordable food for rural areas. However, participation in the local food system demands that farms demonstrate compliance with complex and often expensive food safety practices that have evolved in response to public health outbreaks. This requirement threatens to exclude the very farmers best suited to meet demand for local and regional food. In 2010, only three farms in the state of Iowa were GAP (good ag practices) certified.

**What has been done**
Northeast Iowa fruit and vegetable growers approached Iowa State University Extension & Outreach (ISUEO) for assistance in meeting food safety requirements of a large food service provider. Working with the Northeast Iowa Food & Farm Coalition (NIFF), Winneshiek County Extension received a USDA Specialty Crop Block grant of $15,700 from the Iowa Department of

Agriculture and Land Stewardship in 2011 to meet two goals. First, the grant was used to develop a training program to equip food safety "coaches" who could provide technical assistance to farmers to implements GAP and prepare them for food safety certification. Second, funding was used to create a GAP cost-share program to assist farmers with the cost of an audit. A training program was launched for "food safety coaches", which included a course or workshop on GAP and a day-long training that included visits to three farms. A consultant from Primus Labs lead the on-farm training and demonstrated the audit process on the farm. Thirteen people participated in this training with half of them being interested in becoming food safety coaches. The remaining trainees work with farmers in their professions and found the GAPs training useful for their work.

**Results**

Through the food safety coaching program, 21 Iowa fruit and vegetable farms received assistance in writing a food safety plan. The level of on-farm assistance varied from site visits to mock audits to prepare them for an actual GAP audit. The mock audit helped farmers identify food safety areas that were still of concern, so they could address them prior to paying for a real audit. Following the mock audit, 11 farms requested a USDA GAP audit for their farm and 100% passed. Twelve farms received financial assistance through the GAPs cost-share program. The 2012 drought decreased the number of farms originally projected to apply for cost-share funding. ISU Extension continues to support the need for GAP certification with other outreach programs. The Iowa GAP Center blog [http://blogs.extension.iastate.edu/iowagap] was created to be a source of timely information for Iowa specialty crop producers. A 3-level GAP education program has been created to assist producers with general GAP knowledge (KNOW), creation of farm safety plans (SHOW) and a mock audit exercise (GO). The tiered program will be rolled out across Iowa and will provide a venue for growers and buyers to communicate about food safety requirements other than certification.

**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 |
| 723 | Hazards to Human Health and Safety |

## V(H). Planned Program (External Factors)

### External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (outbreaks; food recalls)

### Brief Explanation

Implementation of the Food Safety Modernization Act has raised awareness about risks from improper handling of food along the food chain. Foodborne illness outbreaks continued, although most of these did not reach levels of national outbreaks. Economic challenges and increasing numbers of new Iowans led to investigation by food entrepreneurs of ways to grow food based businesses.

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

### Evaluation Results

Through high pass rates (92%) on the national certification exam and food preservation knowledge surveys we know our food safety programs have led to increases in knowledge, with the ultimate goal of changes in behavior. Increases in numbers of Iowans participating in food safety programming, beyond our targets, indicates there is considerable interest in improving safe food handling practices.

Iowa fruit and vegetable farms received assistance in writing a food safety plan for on-farm production and post-production processes, resulting in safe and healthy food and non-food agricultural products, while taking into account economical, social and environmental sustainability. Arranging for their GAP audits on the same day they received assistance in writing food safety plans resulted in a cost savings of up to 50%.

### Key Items of Evaluation

Numbers of individuals participating in food safety certification programs, number and percent of those achieving food safety certification, and the number of those taking part in food preservation programming are key evaluation indicators for food safety programs.