

**V(A). Planned Program (Summary)****Program # 5****1. Name of the Planned Program**

Food Safety

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

| <b>KA Code</b> | <b>Knowledge Area</b>   | <b>%1862 Extension</b> | <b>%1890 Extension</b> | <b>%1862 Research</b> | <b>%1890 Research</b> |
|----------------|---|------------------------|------------------------|-----------------------|-----------------------|
| 501            | New and Improved Food Processing Technologies   | 15%                    |                        |                       |                       |
| 502            | New and Improved Food Products  | 5%                     |                        |                       |                       |
| 504            | Home and Commercial Food Service  | 20%                    |                        |                       |                       |
| 704            | Nutrition and Hunger in the Population  | 20%                    |                        |                       |                       |
| 711            | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources  | 20%                    |                        |                       |                       |
| 712            | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins | 20%                    |                        |                       |                       |
| <b>Total</b>   |   | 100%                   |                        |                       |                       |

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

| <b>Year: 2009</b> | <b>Extension</b> |             | <b>Research</b> |             |
|-------------------|------------------|-------------|-----------------|-------------|
|                   | <b>1862</b>      | <b>1890</b> | <b>1862</b>     | <b>1890</b> |
| Plan              | 2.2              | 0.0         | 0.3             | 0.0         |
| Actual            | 1.6              | 0.0         | 0.0             | 0.0         |

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

| <b>Extension</b>               |                       | <b>Research</b>       |                       |
|--------------------------------|-----------------------|-----------------------|-----------------------|
| <b>Smith-Lever 3b &amp; 3c</b> | <b>1890 Extension</b> | <b>Hatch</b>          | <b>Evans-Allen</b>    |
| 70388                          | 0                     | 0                     | 0                     |
| <b>1862 Matching</b>           | <b>1890 Matching</b>  | <b>1862 Matching</b>  | <b>1890 Matching</b>  |
| 91928                          | 0                     | 0                     | 0                     |
| <b>1862 All Other</b>          | <b>1890 All Other</b> | <b>1862 All Other</b> | <b>1890 All Other</b> |
| 109099                         | 0                     | 0                     | 0                     |

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

- Cooking for a Crowd
- EFNEP Food Safety
- Food Cupboard Coalition
- Food Preservation Workshops
- Food Safety Public Presentation
- General Activities - Food Safety

- Good Agricultural Practices (GAP II)
- Health Fair Related to Nutrition
- Maine Family Nutrition Program Food Safety
- Master Food Preserver Course
- Pressure Gauge Testing

## 2. Brief description of the target audience

- Community Members (Adult)
- Consumers (Adult)
- Extension Homemakers (Adult)
- Food Cupboard Directors
- Food Stamp Recipients (Adult)
- Food Stamp Youth (Youth)
- General Public (Adult)
- Limited Income Public (Adult)
- Limited Income Public (Youth)
- Master Gardener Trainees (Adult)
- Native Americans (Adult)
- Volunteers (Adult)

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

#### 1. Standard output measures

| 2009          | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---------------|------------------------|--------------------------|-----------------------|-------------------------|
| <b>Plan</b>   | 1850                   | 1050                     | 10650                 | 0                       |
| <b>Actual</b> | 1935                   | 42                       | 13976                 | 0                       |

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

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

##### Number of Peer Reviewed Publications

| 2009          | Extension | Research | Total |
|---------------|-----------|----------|-------|
| <b>Plan</b>   | 0         | 0        |       |
| <b>Actual</b> | 0         | 0        | 0     |

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Direct - Collaborative or Cooperative Effort

| Year | Target | Actual |
|------|--------|--------|
| 2009 | 4      | 22     |

**Output #2****Output Measure**

- Direct - Consultation; phone, written, in-person

| <b>Year</b> | <b>Target</b> | <b>Actual</b> |
|-------------|---------------|---------------|
| 2009        | 11000         | 14211         |

**Output #3****Output Measure**

- Direct - Workshop - series  
Not reporting on this Output for this Annual Report

**Output #4****Output Measure**

- Direct - Workshop - single session  
Not reporting on this Output for this Annual Report

**Output #5****Output Measure**

- Indirect - Publication - newsletter  
Not reporting on this Output for this Annual Report

**Output #6****Output Measure**

- Direct - Educational Programs or Projects

| <b>Year</b> | <b>Target</b>     | <b>Actual</b> |
|-------------|-------------------|---------------|
| 2009        | {No Data Entered} | 182           |

**Output #7****Output Measure**

- Multiple-undefined delivery method

| <b>Year</b> | <b>Target</b>     | <b>Actual</b> |
|-------------|-------------------|---------------|
| 2009        | {No Data Entered} | 7             |

## V(G). State Defined Outcomes

| V. State Defined Outcomes Table of Content |  |
|--|--|
| O. No.                                     | OUTCOME NAME   |
| 1  | Adopt HACCP and bio-security plans   |
| 2  | Adopt behaviors to prevent or minimize complications of chronic disease  |
| 3  | Adopt food safety practices  |
| 4  | Adopt the USDA dietary guidelines and the food guide pyramid   |
| 5  | Keep accurate records  |
| 6  | Keep livestock healthy   |
| 7  | Participate in Maine cattle health assurance program   |
| 8  | Participate in Salmonella enteriditis surveillance program   |
| 9  | Participate in livestock disease monitoring programs   |
| 10   | Use relevant UMCE web-based resources  |
| 11   | Enhance the economic and environmental sustainability of Maine agriculture and aquaculture.                                      |
| 12   | Enhance the safety, sustainability, and dependability of Maine's food supply.  |
| 13   | Improve the lives of Maine citizens through positive human development, healthy lifestyles and nutrition, and lifelong wellness. |
| 14   | Adopt appropriate handling and storage technologies  |
| 15   | Adopt appropriate technologies   |
| 16   | Develop educational programs that address health and safety issues   |
| 17   | Operate equipment safely   |
| 18   | Practice safety  |
| 19   | Assume personal responsibility for health  |
| 20   | Increase consumption of locally produced foods   |

| O. No. | OUTCOME NAME   |
|--------|--|
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| 4      | Adopt the USDA dietary guidelines and the food guide pyramid   |
| 5      | Keep accurate records  |
| 6      | Keep livestock healthy   |
| 7      | Participate in Maine cattle health assurance program   |
| 8      | Participate in Salmonella enteriditis surveillance program   |
| 9      | Participate in livestock disease monitoring programs   |
| 10     | Use relevant UMCE web-based resources  |
| 11     | Enhance the economic and environmental sustainability of Maine agriculture and aquaculture.                                      |
| 12     | Enhance the safety, sustainability, and dependability of Maine's food supply.  |
| 13     | Improve the lives of Maine citizens through positive human development, healthy lifestyles and nutrition, and lifelong wellness. |
| 14     | Adopt appropriate handling and storage technologies  |
| 15     | Adopt appropriate technologies   |
| 16     | Develop educational programs that address health and safety issues   |
| 17     | Operate equipment safely   |
| 18     | Practice safety  |
| 19     | Assume personal responsibility for health  |
| 20     | Increase consumption of locally produced foods   |

|    |   |
|----|---|
| 21 | Integrate regular physical activity into daily life |
| 22 | Make better decisions regarding healthy lifestyles  |
| 23 | Manage family resources in alignment with goals     |
| 24 | Make better decisions using available diagnostics   |
| 25 | Use relevant UMaine Extension web-based resources   |

**Outcome #1****1. Outcome Measures**

Adopt HACCP and bio-security plans

Not Reporting on this Outcome Measure

**Outcome #2****1. Outcome Measures**

Adopt behaviors to prevent or minimize complications of chronic disease

Not Reporting on this Outcome Measure

**Outcome #3****1. Outcome Measures**

Adopt food safety practices

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 5700                | 9396   |

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Sanitation Training for Artisan Cheesemakers: Artisan cheesemakers are satisfying an important new market that has sprung up in Maine and across the country recently. There are currently 37 licensed artisan cheesemakers in the state of Maine. Most are small operations and are predominantly owned and operated by women.

**What has been done**

A team of UMaine Extension specialists with expertise in food science and dairy has been working with the Maine Cheese Guild to train members in best production sanitation practices and the development of HACCP (Hazard Analysis Critical Control Point) plans. The workshops have also been helpful in training State and Federal inspectors and organic certification inspectors from the Maine Organic Farmers and Gardeners Association.

**Results**

Our sanitation training was attended by 45 people, 11 of whom identified themselves as representing a certifying agency. All reported that, as a result of the training, they were better able to understand sanitation and HACCP. Twenty-three said they will create a formal sanitation plan, design a process flow diagram, and complete a hazard analysis as a component of a future HACCP plan. Fifteen began the process of creating a full HACCP plan. Our specialists have continued to work with individual Guild members one-on-one in a variety of ways and have continued to observe positive changes in production sanitation practices as a result of the training.

**4. Associated Knowledge Areas**

| <b>KA Code</b> | <b>Knowledge Area</b>                         |
|----------------|---|
| 501            | New and Improved Food Processing Technologies |
| 504            | Home and Commercial Food Service              |

**Outcome #4****1. Outcome Measures**

Adopt the USDA dietary guidelines and the food guide pyramid

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| <b>Year</b> | <b>Quantitative Target</b> | <b>Actual</b> |
|-------------|----------------------------|---------------|
| 2009        | 160                        | 542           |

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| <b>KA Code</b> | <b>Knowledge Area</b>                  |
|----------------|--|
| 704            | Nutrition and Hunger in the Population |

**Outcome #5****1. Outcome Measures**

Keep accurate records

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 45                  | 20     |

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area                         |
|---------|--|
| 504     | Home and Commercial Food Service       |
| 704     | Nutrition and Hunger in the Population |

**Outcome #6****1. Outcome Measures**

Keep livestock healthy

Not Reporting on this Outcome Measure

**Outcome #7****1. Outcome Measures**

Participate in Maine cattle health assurance program

Not Reporting on this Outcome Measure

**Outcome #8****1. Outcome Measures**

Participate in Salmonella enteritidis surveillance program

Not Reporting on this Outcome Measure

**Outcome #9****1. Outcome Measures**

Participate in livestock disease monitoring programs

Not Reporting on this Outcome Measure

**Outcome #10****1. Outcome Measures**

Use relevant UMCE web-based resources

Not Reporting on this Outcome Measure

**Outcome #11****1. Outcome Measures**

Enhance the economic and environmental sustainability of Maine agriculture and aquaculture.

Not Reporting on this Outcome Measure

**Outcome #12****1. Outcome Measures**

Enhance the safety, sustainability, and dependability of Maine's food supply.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 0                   | 0      |

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Decreasing Lobster Pound Mortality: One of the risks of lobster trading is holding stock to sell during winter months when prices are higher. Retailers hold lobsters in "pounds," small saltwater bays with closed entrances, until a

suitable market price is reached. In recent years, the economic advantage of impounding has been greatly lessened due to "shrinkage," the industry's term for loss due to mortality caused by stress and disease during impoundment. This loss varies widely but has been reported as high as 20 percent statewide, or as much as \$56 million.

#### **What has been done**

Utilizing funding competitively obtained from the Maine Department of Marine Resources, UMaine Extension's Animal Health Laboratory conducted a large study of stressors in lobster handling during 2009.

#### **Results**

In 2007, 63 million pounds of live lobster were landed in Maine, worth over \$280 million. According to the Atlantic States Marine Fisheries Commission, the current abundance of the Gulf of Maine lobster stock is at a record high. Our research suggested that fast hauling speeds, depth of water, and rough handling does produce a measurable stress in lobsters, leading to mortality losses. We also detected a microbial agent, *Photobacterium indicum*, that appears to have a role in the shrinkage seen in the pounds. Management strategies to reduce stress during handling have the potential to save millions of the crustaceans, improve the quality of lobsters at retail, and minimize the incidence of sick and diseased lobsters going to market. Research results have been presented to the lobster fishery industry in the form of reports to the Maine Department of Marine Resources, and articles through the Lobster Institute's Bulletin.

#### **4. Associated Knowledge Areas**

| <b>KA Code</b> | <b>Knowledge Area</b>   |
|----------------|---|
| 501            | New and Improved Food Processing Technologies   |
| 502            | New and Improved Food Products  |
| 504            | Home and Commercial Food Service  |
| 704            | Nutrition and Hunger in the Population  |
| 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**

Improve the lives of Maine citizens through positive human development, healthy lifestyles and nutrition, and lifelong wellness.

Not Reporting on this Outcome Measure

#### **Outcome #14**

##### **1. Outcome Measures**

Adopt appropriate handling and storage technologies

Not Reporting on this Outcome Measure

#### **Outcome #15**

##### **1. Outcome Measures**

Adopt appropriate technologies

Not Reporting on this Outcome Measure

**Outcome #16****1. Outcome Measures**

Develop educational programs that address health and safety issues

Not Reporting on this Outcome Measure

**Outcome #17****1. Outcome Measures**

Operate equipment safely

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 30                  | 97     |

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area  |
|---------|---|
| 501     | New and Improved Food Processing Technologies   |
| 502     | New and Improved Food Products  |
| 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 |

**Outcome #18****1. Outcome Measures**

Practice safety

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 50                  | 94     |

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area  |
|---------|---|
| 501     | New and Improved Food Processing Technologies   |
| 502     | New and Improved Food Products  |
| 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 |

**Outcome #19**

**1. Outcome Measures**

Assume personal responsibility for health

Not Reporting on this Outcome Measure

**Outcome #20**

**1. Outcome Measures**

Increase consumption of locally produced foods

Not Reporting on this Outcome Measure

**Outcome #21**

**1. Outcome Measures**

Integrate regular physical activity into daily life

Not Reporting on this Outcome Measure

**Outcome #22****1. Outcome Measures**

Make better decisions regarding healthy lifestyles

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | 6600                | 10879  |

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area  |
|---------|---|
| 504     | Home and Commercial Food Service  |
| 704     | Nutrition and Hunger in the Population  |
| 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 #23****1. Outcome Measures**

Manage family resources in alignment with goals

Not Reporting on this Outcome Measure

**Outcome #24****1. Outcome Measures**

Make better decisions using available diagnostics

**2. Associated Institution Types**

- 1862 Extension

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | {No Data Entered}   | 61     |

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

| KA Code | Knowledge Area  |
|---------|---|
| 501     | New and Improved Food Processing Technologies   |
| 502     | New and Improved Food Products  |
| 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 |

## Outcome #25

### 1. Outcome Measures

Use relevant UMaine Extension web-based resources

### 2. Associated Institution Types

- 1862 Extension

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

| Year | Quantitative Target | Actual |
|------|---------------------|--------|
| 2009 | {No Data Entered}   | 280814 |

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### 4. Associated Knowledge Areas

| <b>KA Code</b> | <b>Knowledge Area</b>   |
|----------------|---|
| 501            | New and Improved Food Processing Technologies   |
| 502            | New and Improved Food Products  |
| 504            | Home and Commercial Food Service  |
| 704            | Nutrition and Hunger in the Population  |
| 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

- 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.)

##### Brief Explanation

#### V(I). Planned Program (Evaluation Studies and Data Collection)

##### 1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants

#### Evaluation Results

#### Key Items of Evaluation