

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

### Program #3

#### 1. Name of the Planned Program

Nutrition and Food Safety

#### 2. Brief summary about Planned Program

Cooperative Extension has active work teams in the following areas:

- Food Safety Education including
  - Food Safety Training for Food Service Managers and Workers
  - Food Safety Education for High Risk Audiences, their caregivers, and Health Care Professionals
  - For consumers
  - Information for Farmers' Market Vendors and Customers
  - Health Promotion/Chronic Disease Prevention
  - Strong Women, Strong Bones
  - Heart Disease
  - Diabetes Awareness, Prevention and Management
  - Nutrition Education for Low-income Audiences
  - Nutrition and Wellness

The AES research program in human nutrition focuses on basic research to understand the interactions between plant composition and human health, the interrelationships between nutrition, exercise, and human health, and the basic biochemistry of human nutrition. Food safety research emphasizes pre-harvest management of livestock to prevent transmission of human pathogens in livestock production and handling and post-harvest detection and management systems to prevent contamination of meat and plant products with human pathogens

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	0%		20%	
703	Nutrition Education and Behavior	75%		40%	
704	Nutrition and Hunger in the Population	1%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including	2%		10%	
712	Protect Food from Contamination by Pathogenic	6%		20%	
724	Healthy Lifestyle	11%		0%	
805	Community Institutions, Health, and Social Services	5%		10%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

• Foodborne illness in the US is a major economic burden and cause of human suffering and death. Economic and social consequences of foodborne illness are estimated to be over \$3 billion each year, with lost productivity estimated at \$30-40 billion. It is estimated that foodborne contaminants cause approximately 76 billion illnesses, 325,000 hospitalizations, and 5,000 deaths in the US each year. The risk of foodborne illness is especially important when hazardous food is served in group settings (eating establishments, child and assisted care facilities) and/or to high risk individuals (seniors, young children, pregnant women, immuno-compromised individuals).

• The number of persons with type 2 diabetes in Colorado has increased over 70% in the past ten years. The Colorado Department of Public Health and Environment (CDPHE) estimates that 143,000 persons are diagnosed with diabetes, but another 74,200 are likely to have the disease and not know it.

• Osteoporosis is a major health issue for 55% of people over age 50.

#### 2. Scope of the Program

- In-State Extension
- Multistate Integrated Research and Extension
- In-State Research
- Multistate Research
- Integrated Research and Extension
- Multistate Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

- Given accurate knowledge and support, individuals at risk for food-borne illness, and major diseases will increase their understanding, change attitudes and behaviours, and ultimately be less at risk, less hungry and healthier.

**2. Ultimate goal(s) of this Program**

Food Safety Education

- Increase the proportion of consumers who follow key food safety practices.
- Improve food employee behaviors and food preparation practices that relate directly to foodborne illnesses in retail food establishments.
- Increase the proportion of high risk consumers and their caregivers who follow key food safety practices.

Health Promotion/Chronic Disease Prevention

- Increase the number to persons with diabetes who receive formal diabetes education.
- Prevent new cases of diabetes through changes in diet.
- Reduce the proportion of adults with osteoporosis

Food Safety Research

- Pre-harvest management of livestock to prevent acquisition of human pathogens in livestock production and handling
- Post-harvest detection and management systems to prevent contamination of meat products with human pathogens
- Assessment of production systems and regulatory protocols for effective food safety.

Nutrition Research

- Determine important relationships between diet and health
- Evaluate the relationships between plant composition, food processing, and diet on bioavailability of nutrients and interactions with disease and obesity
- Study the impact of diet and exercise on human health

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	28.0	0.0	6.0	0.0
2010	28.0	0.0	6.0	0.0
2011	28.0	0.0	6.0	0.0
2012	28.0	0.0	6.0	0.0
2013	28.0	0.0	6.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Food Safety Education

- Food Safety training for consumers, high risk audiences and their caregivers.(Eat Well for Less, La Cocina Saludable, Worksite Wellness, Safe Home Food Preparation and Preservation, Promotion at Farmers Markets.)
- Food Safety Training for Food Service Managers and Workers (Food Safety Works, ServSafe, Food Safety for Food Bank Workers).

Promoting Food Security

- Multi-lesson series programs-Eat Well for Less, La Cocina Saludable]
- Single event porgrams targeting limited resource families
- Newsletters-Senior Nutrition News

Health Promotion/Chronic Disease Prevention

- Multi-lesson series - Dining with Diabetes, Small Changes Make a Big Difference, Strong Women-Strong Bones, Moving Toward a Healthier You, Healthy Heart, Smart-START for a Healthy Heart
- Self-paced program - Self-Care for a Healthy Heart
- Single lessons - Workable Wellness (worksite wellness).
- Youth program- Food Friends-Making New Foods Fun for Kids, Eating Right Is Basic, Chef Combo's Fantastic Adventures in Tasting and Nutrition, Professor Popcorn Research
- Technical and extension publications
- Development of new technologies for improving food safety
- Development of recommendations on diet, exercise or other health related topics

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Demonstrations</li> <li>● Group Discussion</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Public Service Announcement</li> <li>● Web sites</li> <li>● Other 1 (Multimedia kiosks)</li> </ul>

**3. Description of targeted audience**

Food Safety Education

- Consumers, High Risk Audiences (pregnant, immuno-compromised, elderly).
- Food Handlers and their managers at retail food establishments.
- Producers and processors of plant and animal agricultural products.

Health Promotion/Chronic Disease Prevention

- Individuals at risk for diabetes, heart disease, obesity(adults and youth)
- Seniors at risk for osteoporosis.
- Youth - nutrition focus

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	50000	250000	250	10000
2010	50000	250000	250	1000
2011	50000	250000	250	1000
2012	50000	250000	250	1000
2013	50000	250000	250	1000

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

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	20	20	0
2010	20	20	0
2011	20	20	0
2012	20	20	0
2013	20	20	0

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

**1. Output Target**

- Number of trainings in Food Safety Education, Health Promtion and Disease Prevention held.

**2009 :200                      2010 :200                      2011 :200                      2012 :200                      2013 :200**

- Amount of grant dollars received to support Nutrition, Health and Food Safety

**2009 :250000                      2010 :250000                      2011 :250000                      2012 :250000                      2013 :250000**

- Number of individuals reached by newsletters on Food Safety Education, Food Security, and Health Promotion and Disease Prevention distributed.

**2009 :250000                      2010 :250000                      2011 :250000                      2012 :250000                      2013 :250000**

- Technical publications on food safety and nutrition.

**2009 :20                      2010 :20                      2011 :20                      2012 :20                      2013 :20**

- Number of individuals trained via workshops in Food Safety, Nutrition, and Health.

**2009 :5000                      2010 :5000                      2011 :5500                      2012 :6000                      2013 :6000**

- Number of partnering agencies in Colorado who collaborated in nutrition, diet and health efforts.

**2009 :100                      2010 :150                      2011 :150                      2012 :200                      2013 :200**

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Percent of participants at trainings in Food Safety indicating an increase in knowledge gained
2	Percent of participants reporting a change in attitude regarding Food Safety.
3	Percent of participants indicating a change in behavior as a result of Food Safety training
4	Percent of participants demonstrating a change in knowledge regarding Nutrition, Diet and Health.
5	Percent of participants documenting a change in behavior following participation in workshop on nutrition, diet, and health.
6	Facilitation of international trade of food products.
7	Basic research on human nutrition.

**Outcome #1**

**1. Outcome Target**

Percent of participants at trainings in Food Safety indicating an increase in knowledge gained

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :70                      2010 : 70                      2011 : 70                      2012 :70                      2013 : 70**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 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 Occuring Toxins
- 724 - Healthy Lifestyle
- 805 - Community Institutions, Health, and Social Services

**Outcome #2**

**1. Outcome Target**

Percent of participants reporting a change in attitude regarding Food Safety.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :70                      2010 : 70                      2011 : 70                      2012 :70                      2013 : 70**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 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 Occuring Toxins
- 724 - Healthy Lifestyle
- 805 - Community Institutions, Health, and Social Services

**Outcome #3**

**1. Outcome Target**

Percent of participants indicating a change in behavior as a result of Food Safety training

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :70                      2010 : 70                      2011 : 70                      2012 :70                      2013 : 70**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 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 Occuring Toxins
- 724 - Healthy Lifestyle
- 805 - Community Institutions, Health, and Social Services

**Outcome #4**

**1. Outcome Target**

Percent of participants demonstrating a change in knowledge regarding Nutrition, Diet and Health.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009 :70                      2010 : 70                      2011 : 70                      2012 :70                      2013 : 70**

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 805 - Community Institutions, Health, and Social Services

**Outcome #5**

**1. Outcome Target**

Percent of participants documenting a change in behavior following participation in workshop on nutrition, diet, and health.

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :50                      2010 : 50                      2011 : 50                      2012 :50                      2013 : 50**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 805 - Community Institutions, Health, and Social Services

**Outcome #6**

**1. Outcome Target**

Facilitation of international trade of food products.

**2. Outcome Type :** Change in Condition Outcome Measure

**2009 :0                      2010 : 0                      2011 : 0                      2012 :0                      2013 : 0**

**3. Associated Institute Type(s)**

- 1862 Research

**4. Associated Knowledge Area(s)**

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.
- 805 - Community Institutions, Health, and Social Services

## Outcome #7

### 1. Outcome Target

Basic research on human nutrition.

### 2. Outcome Type : Change in Knowledge Outcome Measure

2009 :0

2010 : 0

2011 : 0

2012 :0

2013 : 0

### 3. Associated Institute Type(s)

- 1862 Research

### 4. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food

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

### 1. External Factors which may affect Outcomes

- Populations changes (immigration,new cultural groupings,etc.)
- Appropriations changes
- Economy
- Government Regulations
- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)

#### Description

Individuals' ability to attend fee-for-service programs may be impacted by economic downturns. Extension's ability to provide programming and scholarships for these programs may be impacted if appropriations continue to decrease and staff is lost. Immigration reform may change the nature of the audience. Research programs are dependent on funding from external agencies.

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

### 1. Evaluation Studies Planned

- Before-After (before and after program)
- After Only (post program)
- Time series (multiple points before and after program)
- During (during program)

#### Description

Regular pre-post evaluations are used. Formative evaluations are often used during the program to adjust focus and direction. Case studies are used to clearly demonstrate impact.

### 2. Data Collection Methods

- Case Study
- Tests
- On-Site
- Sampling
- Observation

#### Description

Pre-post tests. Standard survey methods.