

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

**Program # 11**

**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
501	New and Improved Food Processing Technologies	0%	0%	0%	10%
502	New and Improved Food Products	0%	0%	0%	10%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	0%	10%
701	Nutrient Composition of Food	0%	0%	0%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	0%	20%
703	Nutrition Education and Behavior	0%	50%	0%	10%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	0%	0%	20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	100%	50%	100%	10%
	<b>Total</b>	100%	100%	100%	100%

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

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

Year: 2014	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	5.0	7.0	3.0	17.0
<b>Actual Paid</b>	6.5	2.0	7.7	13.0
<b>Actual Volunteer</b>	0.0	224.0	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
76751	140644	319244	1494958
1862 Matching	1890 Matching	1862 Matching	1890 Matching
76751	85947	412515	798802
1862 All Other	1890 All Other	1862 All Other	1890 All Other
635461	0	1334841	0

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

**1. Brief description of the Activity**

**AgriLife Extension**

Ten additional County Extension Agents were trained to become instructors for the Food Protection Management Program, which includes a certified food manager (CFM) program as well as a food handler (FH) program. Additional training was provided/identified so current instructors could maintain their instructor qualification status per Agency guidelines. Program materials were available in both English and Spanish. For our online food handler's course, a Mandarin language version was recently added to expand our audience outreach.

The Certified Food Manager (CFM) course was evaluated by assessing the pass rate on the CFM exam. The food handler's course was also offered by qualified instructors (CEA-FCS) in both English and Spanish and via the use of distance education (on-line). Pre and post knowledge surveys were used to evaluate the course (change in knowledge).

**Cooperative Extension Program and Cooperative Agricultural Research Center**

The Cooperative Extension Program county agents target limited resource adults and youth and provided presentations on food safety. Limited resource clientele learned proper food handling procedures, personal hygiene while preparing produce and meat products to prevent cross contamination, how to prepare and store food properly.

Agents and specialist within the Cooperative Extension Program were ServSafe trained and received certification. Three CEP agents took the Certified Food Manager Course and were certified. Educational trainings were conducted with restaurants, schools, and churches teaching staff members how to properly handle food.

Educational methods used to conduct trainings included one-on-one consultations, on-site food demonstrations, train-the-trainer, educational programs and classes, taught a series of food safety classes to special interest groups, and educational displays at various sites.

The Cooperative Agricultural Research Center (CARC) provided information to the Cooperative Extension Program regarding Conducting research based food quality and food products. CARC examined ways to supplement caprine products with polyunsaturated fatty acids (PUFA). Ongoing development of value added caprine products (both meat and dairy).

Evaluated strategies for minimizing transfer of microbial pathogens during food handling. Food selection was improved by optimal evaluation of transfer of nutrition knowledge. CARC worked with CEP-FCS Specialist to develop, FACT Sheets, social media, and other resources pertaining to food safety.

**2. Brief description of the target audience**

**AgriLife Extension**

Individuals who are employed in the retail food service industry. This includes cooks, managers, and owners who are affiliated with foodservice establishments including restaurants, school food service, bed and breakfasts, prisons, and other establishments that prepare and serve food to individuals.

**Cooperative Extension Program**

- Minority families and individuals
- Senior adults
- Single parents
- Persons coping with and at risk for chronic illnesses
- Youth

**Cooperative Agricultural Research Center**

The primarily targeted audience is the underserved population living in the surrounding counties and the Northwest Houston Corridor. This population is dominated by Hispanics and African - Americans. Also, this area has been designated by the State of Texas as Prairie View A&M University's service area.

**3. How was eXtension used?**

eXtension was used to market our online food handler course.

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

**1. Standard output measures**

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	6220	47593	374	0

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

**Patent Applications Submitted**

Year: 2014  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2014	Extension	Research	Total
<b>Actual</b>	0	56	56

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

## **Output Target**

### **Output #1**

#### **Output Measure**

- # of group educational sessions conducted.

<b>Year</b>	<b>Actual</b>
2014	347

### **Output #2**

#### **Output Measure**

- # of research-related projects.

<b>Year</b>	<b>Actual</b>
2014	26

### **Output #3**

#### **Output Measure**

- # of on site demonstrations for adults and youth.

<b>Year</b>	<b>Actual</b>
2014	350

### **Output #4**

#### **Output Measure**

- # of research workshops/presentations.

<b>Year</b>	<b>Actual</b>
2014	7

### **Output #5**

#### **Output Measure**

- # of graduate/undergraduate students involved in research projects.

<b>Year</b>	<b>Actual</b>
2014	3

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

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Percentage increase in knowledge as a result of completing the food handler's course.
2	# of commercialization of methods/technologies for improving the quality, safety and use of food and food products that will ensure the reduction of food borne illnesses and other nutritionally related diseases.
3	FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt. (National Indicator Outcome 3,2)
4	# of new and different value-added caprine products added to the food base and accepted by the target audience.

**Outcome #1**

**1. Outcome Measures**

Percentage increase in knowledge as a result of completing the food handler's course.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	15

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

**Issue (Who cares and Why)**

The Centers for Disease Control and Prevention (CDC) estimate that foodborne diseases cause nearly 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths each year. Populations most at risk to foodborne disease include pregnant women, the elderly, the very young, and individuals with a chronic disease as well as those with weakened immune systems.

More than half of all foodborne illnesses are linked to improper handling of food prepared away from home. Since nearly 50% of our food dollars is spent on food prepared outside the home, food safety is a top concern among consumers. Food safety education is a critical prevention component for reducing the risk for foodborne diseases.

**What has been done**

FPM was implemented in 76 counties across the state. In addition, the food handler's program was offered in an online format.

**Results**

In 2014, 4,022 individuals participated in the Food Protection Management Program (809 CFM and 3213 FH). Of the 3213 participants who completed the food handlers program, 1303 (40%) did so online.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
---------	----------------

---

712 Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #2**

**1. Outcome Measures**

# of commercialization of methods/technologies for improving the quality, safety and use of food and food products that will ensure the reduction of food borne illnesses and other nutritionally related diseases.

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt. (National Indicator Outcome 3,2)

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	65

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

**Issue (Who cares and Why)**

AgriLife Extension and Research:

A minimum score on the CFM must be met in order for participants to earn the credential of Certified Food Manager. In Texas, most Counties require that retail food establishments have a CFM on site to assure that food is prepared, served, and stored properly in order to prevent the risk of foodborne illness.

Cooperative Extension Program:

Each year, an estimated 1 in 6 people become ill from the food they eat. Common symptoms of foodborne disease include nausea, vomiting, diarrhea, abdominal cramping, fever, and headache. While some people may view this as a mere case of ?food poisoning? foodborne illness has serious health and economic consequences. In fact, foodborne illnesses from five pathogens

alone (Campylobacter, Salmonella, Listeria monocytogenes, E. coli O157:H7, and E. coli non-O157:H7 STEC) cost more than \$6.9 billion in medical expenses, lost productivity, and even death. All of us are at risk for foodborne illness, but older adults, pregnant women, young children, individuals with chronic disease, and those with a compromised immune system are at an increased risk. Because nearly half of our food dollars are spent on foods eaten away from home, it is imperative that employees who work in retail food service handle food safely.

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

AgriLife Extension and Research:

Participants who completed the CFM program challenged the exam. For our CFM program, we utilize two national exams (Prometric and ServeSafe).

Cooperative Extension Program:

The Health Coordinator and Extension agents became certified and in Food Protection Management courses to educate limited resource clientele and business on proper food safety. Education programs were conducted throughout 17 Texas counties with youth and adults. Education programs were conducted in schools, churches, schools, restaurants, day cares, and with community outreach organizations.

#### **Results**

AgriLife Extension and Research:

Based on the minimum score required by Prometric and ServeSave, 65% of our participants successfully passed the exam on the first attempt.

Cooperative Extension Program:

Over 1,700 individuals participated in Food Safety workshops. Participants received valuable information on food storage, cross contamination, proper handling of food to prevent food borne illness, washing hands, and food storage during evacuation. 150 of 328 (46%) of participants stated that they would more often follow the recommended practices of not allowing meat and dairy foods to sit out for more than two hours. while 111 of 328 (34%) stated they would always follow the recommended practice. 200 or 333 (60%) stated they would more often follow the recommended practices of not thawing foods at room temperature while 43 of 333 (13%) stated they would always follow the recommended practice.

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

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

#### **Outcome #4**

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

# of new and different value-added caprine products added to the food base and accepted by the target audience.

##### **2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2014	0

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

**Issue (Who cares and Why)**

Due to the increase of chronic illness within the American population, consumers are becoming more health conscious with their meat products. Added to this fact, food products, particularly meats, are more appealing when available in either ready-to-eat, or easy to prepare forms. Caprine products are shown to have significantly less total fat, saturated fat and cholesterol than pork, lamb and chicken. However, the average American citizen does not consume caprine for a variety of reasons. The most prevalent reason is that this choice of meat has not been a part of their diet consumption. Therefore incorporating caprine products into easy to prepare products that are healthy and aesthetically pleasing may increase consumer acceptance.

**What has been done**

The Cooperative Extension Program conducted a pilot survey within 7 Texas counties to evaluate the acceptance of caprine products in the African American and Hispanic communities. Some survey participants indicated that they have never tasted goat meat, or they do not like the flavor of goat meat, don't know how to prepare it, the cost is too high, or they do not have an interest. The Cooperative Agricultural Research Center scientists introduced caprine product in the form of a sausage to 45 individuals who had not consumed caprine.

**Results**

Of the 45 sample group, 39 stated they would purchase this product because the taste was palatable; the product was appealing to the eye and the expressed benefits of consuming this product instead of pork due to health reasons.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
502	New and Improved Food Products
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

- 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**

- Government Regulations
- Competing Public priorities

##### **Brief Explanation**

Change in knowledge among food handler participants is consistent with previous years. Our pass rate for the CFM exam is lower than previously reported but this is likely due to the implementation of a new exam by ServeSafe (National Restaurant Association), the education background of our participants (44% had a high school degree or less), previous food safety training (75% of our CFM participants had not received any food safety training in the previous 12 months), and whether or not participants had completed the CFM in the past (60% had never completed a CFM program). As we do every year, we are reviewing our program materials to confirm that they are current with the FDA Food Code as well as Texas Department of Health food safety guidelines.

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

##### **Evaluation Results**

For participants who completed the CFM program, the overall pass rate on the exam was used as the primary method of evaluation. Participant satisfaction also was measured. Overall pass rate for the CFM exam was 65% which was lower than previously reported. Change in knowledge among participants who completed the food handler's program was assessed by a pre and post survey. Analysis of the food handler pre and post surveys found a statistically significant increase in knowledge from 70 (pre) to 86 (post). With respect to program satisfaction, participants rated the FPM program an average of 1.3 out of a possible score of 5 (a score of 1 = completely satisfied; a score of 5 = not at all satisfied).

##### **Key Items of Evaluation**

For participants who completed the CFM program, the overall pass rate on the exam was used as the primary method of evaluation. Participant satisfaction also was measured. Overall pass rate for the CFM exam was 65% which was lower than previously reported. Change in knowledge among participants who completed the food handler's program was assessed by a pre and post survey. Analysis of the food handler pre and post surveys found a statistically significant increase in knowledge from 70 (pre) to 86 (post). With respect to program satisfaction, participants rated the FPM program an average of 1.3 out of a possible score of 5 (a score of 1 = completely satisfied; a score of 5 = not at all satisfied).

During 2014, 46 people in Maverick County participated in the FPM program and completed the food handler program. Change in knowledge (pre vs post) was used to evaluate the

food handler program. In addition, client (customer) satisfaction surveys were collected from participants

The food handlers program was successful in helping participants (foodservice employees) increase their knowledge about food safety as it pertains to the retail setting.