

Food Safety

Food Safety

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
504	Home and Commercial Food Service	75%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		0%	
Total		100%		0%	

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	0.0	0.0	0.0
Actual	7.0	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
196000	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
294000	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Implement programs for children and adults based on Fight BAC, Thermy, Produce Safety and BAC Down campaigns; USDA food preservation rules; and implement food safety programs for foodservice and processors (ServSafe, TAPS, HACCP).

2. Brief description of the target audience

Food Safety

Children in school and youth program settings

Teen food handlers in high school and community

Adults in home settings

Volunteer food handlers in community settings

Professionals in foodservice and food processing environments

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5200	410000	5200	22000
2008	5500	490000	3200	25000

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

Patent Applications Submitted

Year	Target
Plan:	0
2008:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output in this Annual Report

Year	Target	Actual
2008	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

O No.	Outcome Name
1	Based on post-surveys, 75 percent of children participating in handwashing classes will report intentions to wash hands properly
2	Based on post-surveys, 50 percent of teens will report changes in food handling practices to reduce risk of foodborne illness outbreaks
3	Seventy-five percent of foodservice and food industry participants in ServSafe, HACCP or other food sanitation courses will pass the examination.
4	Based on post-surveys, 50 percent of adult participants in consumer food safety classes will report intent to change one or more food handling behaviors.

Outcome #1**1. Outcome Measures**

Based on post-surveys, 75 percent of children participating in handwashing classes will report intentions to wash hands properly

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2200	900

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

According to the Centers for Disease Control and Prevention (CDC), hand washing is the single most important means of preventing the spread of disease. Studies in schools and childcare centers have shown links between improper or infrequent hand washing and colds, flu and foodborne illness outbreaks.

What has been done

Initiated in 2002, the 'Wash Your Hands' project instructors used a fluorescing dye and ultraviolet light to show areas the students missed washing. The students were provided a handout showing a hand and asked to mark the spots they missed washing (where the dye remained). A follow-up survey was implemented with teachers to determine their observations of behavior change among children in their classrooms.

Results

During the past six years, a hand washing educational program has been done. Based on 'seeing' where 'germs' might hide on hands using a fluorescing dye and ultraviolet light, the 'Wash Your Hands' project has reached more than 11,000 children in grades K-12 in schools throughout North Dakota. Fingertips, back of hand and wrists were commonly missed areas. About 90 percent recognized '20 seconds' as the recommended amount of time to you're your hands. According to post-surveys with students, about 92 percent said they would wash their hands more often, and 93 percent said they would wash their hands more carefully. In 2007-8, our 'actual numbers' are lower than our target, because a nutrition education program became a priority area for our educators.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service

Outcome #2**1. Outcome Measures**

Based on post-surveys, 50 percent of teens will report changes in food handling practices to reduce risk of foodborne illness outbreaks

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1600	1400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

'Teens Serving Food Safely' is a statewide NDSU Extension Service food safety education effort designed to improve young food handlers' food safety knowledge and skills and decrease risk of foodborne illness outbreaks associated with food service establishments. According to a 2002 U.S. Department of Labor report, 22% of employed 15- to 17- year olds work in eating and drinking establishments. Teaching young food handlers the 'rules' could have significant public health implications.

What has been done

The 'Teens' curriculum consists of five lessons based on the Fight BAC(tm) and Thermy(tm) national food safety campaign concepts, with pre/post and follow-up evaluation procedures. Youth benefit from the curriculum's experiential learning model, obtaining information and tools to share with their families. Since 2001 more than 4,500 North Dakota teens have been trained and received completion certificates.

Results

Knowledge scores, as measured by pre/post testing, increased from 51 percent correct on the pre-test to 84 percent on the post-test. About 51 percent of participants had been involved in food preparation for the public. As measured by follow-up surveys, 78 percent reported washing their hands more often during food preparation, 65 percent were more careful about cleaning and sanitizing utensils, and 48 percent had shared their knowledge about food safety with others, 39 percent had already applied what they learned when preparing food for the public, 25 percent are using a food thermometer more often, and 21 percent are checking refrigerator and freezer temperatures more often.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3**1. Outcome Measures**

Seventy-five percent of foodservice and food industry participants in ServSafe, HACCP or other food sanitation courses will pass the examination.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	85	87

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

Increases in daycare, hospital and nursing home populations as well as a growth in restaurant and deli businesses means a growing portion of the population is at risk from outbreaks of foodborne illness. In addition, quantity food preparation presents unique challenges for safe food handling and preparation. In this environment, more attention has been placed on the development and implementation of safe food handling guidelines. As a result, there is high demand for training and educational materials in food safety.

What has been done

ServSafe Food Safety Certification and HACCP certification programs have been conducted for foodservice managers and for members of the food industry. ServSafe is a nationally recognized food safety training program of the National Restaurant Association, with a standardized examination. HACCP Alliance certification programs have been conducted for the food processing industry, in partnership with the North Dakota Department of Animal and Range Sciences and the North Dakota Department of Agriculture meat inspection program.

Results

About 85 percent of participants taking the ServSafe exam have passed the national exam. On post-surveys administered to the students, they indicated they will do the following 'more often' as a result of the class. About 96 percent will train others about the importance of handwashing, and 91 percent plan to wash their hands more often when preparing food. Among those in direct foodservice management position, 90 percent indicated they would separate chemicals from food. About 90 percent will check the sanitizer concentration, 91 percent will take additional steps to avoid cross-contamination, 88 percent will teach others how to avoid cross-contamination, 90 percent will teach others to cool foods more quickly using ice baths, shallow pans and other techniques, 88 percent will teach others how to use a thermometer, and 90 percent will use a food thermometer more often, and 79 percent will explain the importance of understanding food allergies to their foodservice workers. Nearly 99 percent will apply what they learned at home.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
504	Home and Commercial Food Service

Outcome #4

1. Outcome Measures

Based on post-surveys, 50 percent of adult participants in consumer food safety classes will report intent to change one or more food handling behaviors.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2200	3000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Foodborne illness continues to be an issue in the U.S., with increasing numbers of foodborne illnesses are being linked to produce. Food recalls are reported by the media. Safe refrigeration temperatures and cooling practices are an issue in households across the United States, with refrigeration temperatures not meeting the recommended 40 degrees Fahrenheit or lower. Only about 5 percent of the general public regularly use a food thermometer.

What has been done

From 2005-08, two national campaigns were implemented in North Dakota: the 'Fight BAC' and the 'BAC Down' campaigns through our statewide nutrition and food safety education programs. The 'Fight BAC' produce safety campaign promotes concepts such as checking fruits and vegetables for bruises or damage; proper rinsing/cleaning of produce; avoiding cross-contamination; cooking or throwing away fruits or vegetables that have touched raw meat, poultry or their juices. The 'BAC Down' campaign promotes the use of refrigerator thermometers and safe storage temperatures and cooling procedures for perishable foods. To promote these campaigns, lesson plans, displays and games were developed, and training sessions were held with staff across North Dakota. In 2007-08, two new lessons, were implemented: Now Cooking: Lean Beef, which included information about food temperatures, and Cooking for One or Two, which integrate the principles of the Fight BAC campaign. Food safety concepts also are covered in EFNEP, and the 2007-08 evaluation process focused on refrigeration of meat and dairy.

Results

Among the participants in the 'Now Serving: Lean Beef' program, about 93 percent indicated they had learned something new. On the post-survey, about 89 percent could correctly identify the safe internal cooking temperature for ground beef (160 degrees). About 45 percent planned to use the meat shopping tips, which included arranging the grocery cart to help prevent cross-contamination. About 22 percent planned to visit the Web sites provided, which included sites with additional food safety information. About 91 percent planned to share the information with family and friends. Among the participants in the 'Cooking for 1 or 2' lesson, about 94 percent indicated they had learned something new, 29 percent planned to use the grocery shopping tips, and 90 percent planned to share the lesson with family/friends. Following a series of nutrition lessons, 70 percent of EFNEP participants reported that do not let meat or dairy products sit out more than two hours.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
504	Home and Commercial Food Service

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Competing Public priorities

Brief Explanation

Food safety continues to be an area of concern, but the ways that people prefer to learn about food safety has changed. Younger groups of people tend to access their information on the computer instead of through face-to-face contact in traditional Extension programs.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- During (during program)

Evaluation Results

About 82% of New American/refugee respondents knew to separate raw meat from raw vegetables. About 47% knew to chill leftovers within 2 hours, 27% knew they should eat meat after it has reached a safe temperature, and 21% knew how to correctly thaw meat. About 88% indicated concern about not washing the cutting board after cutting raw meat. About 81% indicated concern if perishable food has been left un-refrigerated for more than 2 hours, and 71% indicated concern if they thaw food on the counter or in the sink. About 58% are interested in using a food thermometer when cooking. About 57% correctly refrigerate leftovers within 2 hours, 50% correctly thaw frozen meat, and 75% rely on their senses to determine when food is fully cooked. The survey results revealed some food handling practices inconsistent with current recommendations. Educators can use this information to emphasize correctly chilling leftovers, thawing frozen meat, and safe temperatures for cooking meat.

Key Items of Evaluation

Knowledge, attitudes, and behavior related to the principles of the Fight BAC campaign (clean, separate, cook, chill).