

V(A). Planned Program (Summary)

Program # 4

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	50%		50%	
502	New and Improved Food Products	5%		5%	
503	Quality Maintenance in Storing and Marketing Food Products	25%		25%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%		20%	
	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	1.5	0.0	0.5	0.0
Actual Paid Professional	1.0	0.0	1.4	0.0
Actual Volunteer	0.0	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
68000	0	104074	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
68000	0	104074	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

The inclusion of a student-run food company in the curriculum for the B.S. in Food Science and Technology has given students a hands-on learning environment in which to apply the principles of food science and technology to the real-life production of food products. Upon graduation, students in the program will have at least some experience in all aspects of a food manufacturing company which they can then take with them into their jobs.

AES culinary faculty continue to move into research areas important to southern New Mexico's restaurant operators. They completed a study of beer festivals and a study of culinary training in the past year, and began research into succession/or sale of successful operations, an expanded study of culinary education, and expanded food service training in food allergies.

Extension

The Hidalgo County Extension Office has purchased a large selection of outdoor cooking equipment that is being used to teach kids. Agents teach day-long outdoor cooking tracks that cover food safety, knife skills, food preparation, and cooking safety. The youth participants learn many new skills related to cooking. They also prepare lunch and dinner for approximately 150 people. Youth learn the importance of food safety and become comfortable using a large chef's knife to prepare food as well as increase their skill level on outdoor cooking equipment.

Operation Military Kids (OMK) Camp is held over the summer. The camp is designed for kids with deployed parents. Agents developed a program that consists of a knife skills workshop where youth prepare a snack using chef knives, then continue with indoor gardening. Youth paint terracotta pots earlier in the week, during a 'coping through art' project, that are used to pot herb plants. Youth learn what it takes to care for their newly planted herbs as well as the benefits of having plants indoors; such as stress reduction and air purification. The workshop includes a demonstration on worm composting, carbon footprints, and using solar pumps to water a small garden.

The next day's workshop at the OMK camp includes a cooking class. The class starts with a food safety presentation where participants increase their knowledge of safe food handling procedures that include hand washing, food preparation and proper cooking and food holding temperatures. The workshop then moved to making lunch for the camp members and staff. Youth prepare a meal of cultural New Mexican foods. The menu is designed to teach youth how to prepare cultural foods and incorporate an 'eat locally' theme. When grass fed beef (from a local producer) is used to make street tacos, a discussion is held that highlights the different methods of raising beef as well as the nutritional differences. Vegetables used to make the Calabacitas (Squash), a salad, and garnishes for the tacos are picked right out of an onsite garden or come from the local farmers' market. A discussion is held on the distance most food travels from farm to plate and how eating local produce helps the local economy and cuts down on the carbon foot print. The same herbs that were planted in the pots the day before are used to prepare lunch, giving the youth a chance to use them in a real life cooking situation. Discussions during the workshop lead to questions about the different uses for fresh herbs, how locally produced food is better for the environment, how else to use the ingredients, and methods learned to prepare meals for the youths' families.

Participants learn the safe use of knives, Dutch ovens, and other outdoor cooking equipment, different cattle producing operations and the methods used to raise beef, grass fed beef, locally produced vegetables, taste testing, growing their own foods, how to prepare meals using fresh herbs, the benefits of gardening, and how to prepare a small home garden. Life skills are highlighted throughout the workshop, preparing youth to handle everyday challenges. Youth leave the workshop excited to return home and teach their families what they learn in both gardening and cooking. The design of the OMK camp is to teach participants different methods for dealing with the stress of having a deployed parent. This workshop teaches them life skills and gives them tools to use at home to find their creative outlet as a positive stress relieving activity. Many campers say that they now have the skills to prepare meals for the family which would greatly reduce the work and stress load of their parents. The campers leave the workshop confident and ready to make a difference in their families' lives.

Home Economists hold six trainings on food preservation. These workshops are conducted to meet individual interests in home canning methods. The skill levels of the participants range from those that have never canned before to those that have not canned in more than 10 years. In class evaluations, 80% of participants have stated that they gained knowledge and new facts about canning and 90%, rating the quality of the presentation informative and enjoyable. Comments include "The pressure canning was actually easier than I anticipated", "I had a great time canning and making new friends", "I am now confident enough to can at home", "Great class, I learned a lot, great job, thanks."

The Shiprock Cooperative Extension Service hosts the Fall Agriculture conference at the Shiprock chapter house annually. Topics include healthy living, community gardens, livestock vaccinations, livestock culling, food preservations, and local food marketing. Home economists have agreed to assist with food preservation presentations during the conference. New for this year was the fall farm tour that takes place the day before the conference. The tour include two farms and one community garden in the Shiprock area, information on how to apply for land permits, accessing water for your farm or garden, working with crops, setting up your water system, growing food for your family, and helpful farm and garden tools and tips. Agents were invited to do NMSU tribal extension presentations and share recipes.

Participants receive handouts on "How to Freeze," "Food Preservation", "Drying Foods", and recipes on non-common plants like egg-plant and spinach. The recipes were requested by local farmers who wanted information on how to cook these garden plants. The agents share their roles as an Extension agent working for NMSU tribal extension program. In conclusion, participants increase their awareness of NMSU tribal extension and how to prepare simple recipes.

Agents conduct demonstrations on food preservation methods which had been requested by participants at previous years' conferences. They demonstrate strawberry jam canning; along with a display of the canning materials needed and step-by-step instructions. The educational materials used are the Ball Canning book and NMSU Cooperative Extension Service canning guide and food safety. Participants increase their awareness of how food preservation benefits their families.

This past year home economists offered a "Money Management" training focusing on how to manage personal finances. Participants learn the importance of identifying needs vs. wants, budgeting, and saving. They receive handouts on "Managing your Money: Where do I start", "Managing your Money: Where does the money go?", "Managing your Money: Keep records in order", "Managing your Money: Stop Spending Leaks", and information from Dollar Counts. These efforts increase awareness of basic money management concepts.

Basic nutrition concepts are important for elementary school youth as they learn to make their own meal and snack choices while away from home. Young students grasp the concepts of the basic food groups, and foods within those groups, best with hands-on activity. Each year the students are asked to help "build" a large fabric cheeseburger model to illustrate the five food groups found in the cheeseburger.

The students enjoy learning about the new USDA MyPlate guidelines as they relate to a variety of food choices. Basic nutrition handouts and easy-to-make recipes are given to students to take home to share with their families. After the presentation, the students enjoy "food group kabobs" made with ham, cheese, bell peppers, pineapples, and bread cubes, and receive fruit and vegetables stickers. Following these presentations students seem to make a more conscience effort to choose healthier foods.

Home economists initiated the Colfax County Food Protection Alliance/Task. Following meetings held in July and September, 13 members had joined the task force. Individuals represent the NM Environment Department, Mora/Colfax Head Start, Miner's Colfax Medical Center, Higgins Environmental Consulting, the NM Livestock Board, WIC, the NM Department of Health, K-Bob's Restaurant, Raton HS Culinary Arts Department, the Raton Middle School Family and Consumer Science Department, the local American Red Cross, and the First Street Farmers' Market. Participants discuss the background leading to the development of the county's, "grass roots" based food protection alliance. They learn the purpose of the alliance to develop a network to better respond to food protection and safety incidents, resources that could be used to address a food safety event, potential threats to our food supply along the I-25 corridor, and training or educational needs for the alliance and the general public.

Food safety news releases, educational materials, radio broadcasts and communication among members are means by which consumers increase their knowledge of general food safety information, and food recalls and incidents such as the recent foodborne illnesses related to cantaloupe grown in Southeastern Colorado. Last year three members and the home economist attended the 2nd Annual State Food Protection Alliance Conference which was held in Albuquerque.

Adult Home Economists responded to requests for food preservation demonstrations at the Ku-Tips Nursery in Farmington. The demonstrations include steps to make easy freezer and refrigerator jams, as well as safely and properly canning jams and jellies using the hot water bath canner. Samples of each product are shared with the audience as the home economists answers food preservation questions.

Home economists stepped in to handle all food safety and food preservation clientele phone calls, walk-ins and requests for testing dial gauge pressure canners for accuracy and overall safety. Seventeen dial gauges from clientele in Farmington, Aztec, Bloomfield, and La Plata were tested. While the majority of the dial gauges were recommended for safe use, five gauges needed to be replaced before canning low acid foods in the pressure canner. In addition, approximately 50 clientele calls were answered regarding requests for canning recipes, safe handling procedures and methods, and general food safety questions. The home economist purchased Ball Canning Guides for clientele wishing an additional resource, to accompany the NMSU-CES canning guides. These efforts help insure that families follow USDA approved food preservation techniques and use recipes and methods that will result in a safe home canned product.

Agents work to ensure food safety market viability of commercially processed foods by providing nutritional panel for food labels (this service is not provided in all states); providing the food industry with nutritional panel service on a timely basis; providing nutrition panel graphics for each product submitted; and providing nutritional panel for food labels for food processors annually from NM, TX, AZ and other parts of the U.S.

Work in this area focuses on development or improvement of methods, techniques, or processes to maintain or improve quality or functionality, stabilize or preserve foods, or prepare foods for further processing. This also includes understanding and minimizing food quality losses during preservation, storage, distribution, and marketing to enhance the quantity and quality of foods delivered to consumers, minimize food cost, and enhance profitability for food producers and marketers. In addition, this area includes work on pathogenic foodborne microorganisms and parasites in raw, minimally processed, or inadequately processed and preserved foods.

Experts from various fields are collaborating to review existing Good Agricultural Practices (GAPs) educational and instructional materials, seek to identify and fill any areas where information is lacking to have comprehensive educational programs on food safety for food production. Produce Safety Alliance is a group of farmers, researchers, state officials, produce industry experts and others, working on several committees developing a nationwide curriculum to increase understanding of the principles of GAPs and to facilitate the implementation of food safety practices on fresh fruit and vegetable farms and in packing houses. They hold monthly collaborative conference calls to review food safety materials dealing with fruit and produce.

Agents developed Powerpoint presentations for course training materials demonstrating the dynamics heating and cooling of food products. This course is designed to provide answers and information to people in all phases of food production. The class covers anything from recipe development and food safety issues to marketing of food products. The training is a week-long course offered by the Taos Economic development corporation where students attend 30 hours of classes on food product development, marketing and business management. The food technologist presents material on food safety, food microbiology and food labeling.

Seminars and display presentations are done throughout the state to increase awareness of food safety issues associated with fresh produce and farming practices.

NM regulations have been changed to allow processing of non-potentially hazardous foods under certain conditions in residential home kitchen. People choosing to use this option must understand the rules and limitation of the new regulations.

Agents develop and provide training on the rules and regulations for home-based food business.

They collaborate with NM Department of Environment to develop curriculum on new regulations and trained home economists on the rules and regulations for home based food business based on developed curriculum.

Agents provided HBFB training for Socorro county potential food processors and trained home based food business operators selling new food products. A dedicated webpage for Home based food processors with training curriculum modules and regulations, applications, and inspection forms was created.

Agents are presenters for the Shiprock Agriculture day's conference held at the Shiprock Chapter house. The agents prepare power point presentations on "Food safety" and educate the community members in attendance about the importance of food safety - especially when handling foods. Ideas in proper ways to defrost, freeze, dispose food, separating vegetables and meats etc. are shared. Educational materials focusing on food safety are available to the community to incorporate in their daily lives. The agents give the fridge thermometers and a meat thermometer as participation prizes. These efforts have resulted in an increased awareness of basic food safety benefiting families in the home.

2. Brief description of the target audience

Target audience is food processors in Arizona, Colorado New Mexico, Texas, and Utah.

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	0	0	0	0

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	1	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- The specific output measures will vary according to the specific project being monitored. The development of research procedures and technology, training of students, publishing research papers, and disseminating research results via educational workshops, conferences, and Extension media are important outputs for the various projects falling under this planned program.

Year	Actual
2012	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	# of trained professionals
2	# of research publications
3	# of Extension publications
4	% of food processors using NMSU for their food product development

Outcome #1

1. Outcome Measures

of trained professionals

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

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

of research publications

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2

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
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

of Extension publications

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #4

1. Outcome Measures

% of food processors using NMSU for their food product development

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Government Regulations

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The majority of adult program evaluations carried out by New Mexico Extension

agents and specialists are pre-post and post-program knowledge gain instruments. The majority of youth (primarily 4-H club) program evaluations are demonstrations of knowledge gained and applied in teaching others, competitive events, and climbing 'youth career ladders'. Rarely, if at any time, does an agent or specialist report that participant knowledge attained/gained was less than satisfactory. One can only assume that knowledge gain survey questions are fairly worded, and that audience participation was not mandatory. The only exception to this is with Master Gardener and Integrated Pest Management qualification exams. But again, participation is initially by application and the desire to learn and apply what is learned.

Key Items of Evaluation

What is interesting to note is that most Extension faculty now use goal setting, program objectives, and evaluation instruments in their program plans (as opposed to 10 years ago, when there was a great degree of resistance). The next step in program evaluation is to assist Extension agents and specialists to develop precision evaluation instruments. On-going training, such as the Western Extension Cohort (Evaluation) Training (WECT), needs to be organizationally supported and participation needs to be encouraged by all Extension faculty.

Also, the American Evaluation Association has an Extension group section and should become a legitimate and heavily encouraged professional Extension association. The Association does more than any other organization to encourage evaluation 'best practices.'