

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

HUMAN NUTRITION, HEALTH & 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
702	Requirements and Function of Nutrients and Other Food Components	10%		40%	
703	Nutrition Education and Behavior	75%		20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%		40%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	10.0	0.0
Actual Paid	2.6	0.0	1.5	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
201749	0	160679	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
201749	0	160679	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

Healthy Lifestyles - Teens Advocating for Sustainable Change Program

Issue

One of the biggest challenges facing our nation is the high prevalence of overweight and obese children, youth and adults. To improve the health of our nation, children and youth must move into adulthood without carrying the undue burden of obesity and its associated chronic diseases. Over 75% of freshmen at Douglas High School in Southern Arizona - a US/Mexico border town - report having a family member with diabetes. Due to the growing burden of chronic diseases related to the risk factors of overweight and obesity in the border population, the effects of a sedentary lifestyle and poor eating habits are critical in educating and preventing youth from a lifetime of these conditions. Obesity is related to serious health conditions such as hypertension, type-2 diabetes, hypercholesterolemia, coronary heart disease (CHD), stroke, asthma, and arthritis.

What has been done

The Teens Advocating for Sustainable Change Program was developed and became known as the Douglas High School 4-H Mentors. The group successfully worked to obtain funding and other donations to support awareness campaigns of living a healthy lifestyle. They facilitated the use of pedometers to help other students track their activity outputs in the Walk Across Arizona Program, they acquired 65 abandoned bicycles from the University of Arizona Parking and Transportation Department and repaired/repurposed them for use in the Paul Huber Middle School 4-H Club in Douglas, Arizona, and they led physical activity lessons to various groups including 40 families from the Family Leadership Institute.

Campylobacter Vaccine for Poultry Targets Human Foodborne Illness

Issue

Food safety remains a high level concern to the general public. Campylobacter is the second most common cause of human foodborne diarrheal illness in the United States, causing an estimated 1.3 million cases annually and resulting in health care costs of somewhere between \$800 million to \$5.6 billion per year. The handling and consumption of poultry is considered to be the most significant risk factor in transmission of the bacteria to humans, with up to 80 percent of human campylobacteriosis cases attributable to the poultry reservoir. Complications of infection with Campylobacter include Guillain-Barre syndrome, reactive arthritis, and irritable bowel syndrome. The U.S. has the largest broiler chicken industry in the world, producing approximately 8.52 billion broiler chickens in 2013. Chicken consumption surpasses both beef and pork consumption. In 2011, the USDA implemented new performance standards for Campylobacter on chicken carcasses at processing establishments. These standards allow no more than eight positive Campylobacter samples in a 51-sample set. Furthermore, USDA is proposing new measures in 2015 to reduce Campylobacter in ground chicken and turkey products as well as raw chicken breasts, legs, and wings. To date, there is no vaccine available to industry to reduce the numbers of Campylobacter in poultry and intervention strategies remain insufficient.

What has been done?

Funded by the USDA, faculty and graduate students in the UA School of Animal and Comparative Biomedical Sciences, along with Dr. Roy Curtiss' team at ASU, have developed a new poultry vaccine using an attenuated strain of Salmonella to express Campylobacter genes in chick intestines. The vaccine reduces the number of Campylobacter organisms within the intestine, so ultimately less Campylobacter is transferred to humans and therefore significantly fewer foodborne illnesses will occur. The vaccination process is simple; it is easy to produce and safe. The Salmonella is engineered to live long enough to stimulate antibody production, is attenuated so it cannot produce disease in chicks or humans, and dies before the chicks are harvested. The goal is to halt the contamination before it spreads and survives on raw chicken sold in stores. The researchers are working with the UA's Tech Launch Arizona to partner with industry to further develop the vaccine to meet the needs of industry. Poultry vaccine studies are continuing to align with these goals.

Impacts reported in Report Overview

2. Brief description of the target audience

General public, educators, health professionals, extension educators.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	210322	400000	131857	250000

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
Actual	56	103	159

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Effectiveness of the research program will be based on publications, external grant support, and integration into existing extension programs

Year Actual

2014

157

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Create awareness and increase knowledge
2	Number of individuals adopting recommendations for nutrition and health

Outcome #1

1. Outcome Measures

Create awareness and increase knowledge

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	342179

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

All citizens need to be aware of importance of nutrition, health and food safety.

What has been done

Workshops, health fairs, including EFNEP and SNAP-Ed programs.

Results

342,179 participants, not including indirect contacts were made aware and gained knowledge of these issues.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of individuals adopting recommendations for nutrition and health

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	342179

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

All programs are currently in the process of being evaluated externally for existing areas to preserve, protect, or enhance, as well as areas to discontinue or modify. We will continue to seek further input from stakeholders, advisory committees, and focus groups utilizing needs assessments with the assistance and expertise of an Evaluation Specialist [hire pending]. See State Defined Outcomes.

Key Items of Evaluation