

2013 Kentucky State University and University of Kentucky Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

This report includes many of the projects and programs that have been generated by the Research and Extension efforts of the 1890 and 1862 Land Grant Programs in Kentucky. Together, the county and state level personnel collaborate throughout the state to improve the lives of our clientele.

Some of our 2013 accomplishments include: Educational 4-H programs that relate to Science, Engineering, and Technology programs aimed at enhancing the science, engineering and technology (4-H SET) areas by providing opportunities for hands-on scientific learning and discovery in club settings; the climate change working group addressed key agricultural and environmental issues including looking at the effects of a warming climate and changing precipitation patterns on managed grassland; Water conservation on the farm and around the home remained a priority; the Management in Tough Times initiative produced numerous materials and hosted the "It's Your Reality" event geared towards teaching students the realities of making a living; High impact educational programs such as Master Gardener, Master Grazer, and Master Logger resulted in significant improvements in consumer horticulture, animal nutrition, farm income, natural resources utilization. Military families remain a target audience due to the success of initiatives such as Operations Military Kids and weekend/day camps.

In 2013, we reassessed our issues discovery process, which served as a facilitation tool for county Plan of Work discussions. This included leaders and agents discussing what is needed at the county level. The issues discovery process is a dialogue made possible by our presence in all 120 counties. Throughout the year, agents and volunteer leaders came together to discuss the progress of how programs were addressing the needs of local communities. These data are useful in assessing and maintaining programs that address pertinent issues. Several new programs are being considered for implementation in order to make a positive difference for Kentucky's farms, families, and communities.

With an emphasis on accountability, we also made strides in highlighting specific programs that are addressing traditional and non-traditional needs through public value materials. These materials have been created, reviewed by a vetting committee and then used as printed publications and online media to promote the work of Extension.

Agricultural research through Kentucky's land grant programs at Kentucky State University (KSU) and University of Kentucky (UK) has been providing new opportunities to farmers and residents for more than 130 years. With external grants and contracts between \$25-30 million a year, agriculture researchers address problems of agribusiness, consumers, international trade, food processing, nutrition, community development, soil and water resources, and the environment with over 300 externally funded projects. Research in the college resulted in new fundamental knowledge as well as applied knowledge that has impacts on the lives of Kentuckians and people across the world.

As a result of interaction with councils and other stakeholders, the 2013 program year emphasis as defined by the number of contacts, is as follows:

30% Global Food Security and Hunger
6% Social and Economic Opportunity

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- 24% Life Skill Development
- 3% Childhood Obesity
- 12% Leadership and Volunteerism
- 3% Food Safety
- 15% Diet, Nutrition and Healthy Lifestyles
- 1% Sustainable energy
- 5% Agricultural and Environmental Quality

Joint activities between the UK and KSU remain an expectation of faculty and staff. Faculty and specialist continue to collaborate on many projects, thus allowing the institutions to operate as a single entity. Agents and program assistants are both located in county offices, sharing not only office space but also budget, supervision and facility management responsibilities. This strong bond has resulted in shared program efforts, many of which are reported in this document. Efforts continue to include programming and research in such areas as:

Development	Grapes and Wine Goats	Environmental Education for Youth eXtension	Youth Entrepreneurship Small Business
Expansion	Cattle Production	Tobacco Sector Farming Adjustments	Business Retention &
Management	Pawpaws and Blackberries	U.S. Animal Identification Program	Family Financial
	Small Farm Programs	Organic Ag and Vegetable Programs	E-commerce
	Aquaculture	AgrAbility	Health & wellness
	Sustainable Ag	Limited Resource Families	Home Horticulture
	Youth Dev.	Entrepreneurial Coaching Institute	Childhood Obesity

Kentucky State University and the UK share adjunct faculty with at least three positions in entomology, three positions in horticulture, three positions in animal sciences, and one position in agricultural economics.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	470.0	42.0	75.0	41.0
Actual	503.0	37.5	209.7	42.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel

- Expert Peer Review
- Other (State Extension Advisory Committee)

2. Brief Explanation

Kentucky Cooperative Extension continues to define merit review as a process used to judge the degree to which a planned program (1) is relevant to needs expressed by stakeholder groups, (2) draws upon current research and knowledge, (3) is congruent with quality standards and best practice, and (4) is likely to produce anticipated outcomes. Merit review for research is similar in that it uses the criteria of (1) consideration for potential impact, (2) relevance to the needs of stakeholders, and (3) appropriateness within the mission and priorities of the experiment station, USDA, and the land grant mission.

The Plan of Work has been built on program goals that the Cooperative Extension Service identified through Extension advisory committees, developed through logic model program committees and reviewed through program area committees made up of Extension assistant directors, extension agents, department chairs, and specialists. The program area assistant directors select, refine and replace featured programs based on identified needs in the greatest number of counties, current and planned research and educational resources, and the ability to effectively deal with the issues. Forty-four non-university individuals who comprise the State Extension Council representing both the UK and KSU, all geographic regions of Kentucky as well as agriculture, youth, families, business, industry, and public education served as reviewers of the Plan of Work using the criteria identified above.

The University of Kentucky Agricultural Experiment Station focuses on scientific peer review and merit review on individual research projects. Scientific review is evaluation by other researchers who possess the expertise to conduct the same or similar research. Such review includes technical feasibility, originality and scientific/disciplinary significance of the research. Project proposals go through an initial anonymous peer review. If satisfactory expertise is not available within the department or on campus, external reviews are solicited. After multiple reviews (usually three) a project committee recommends approval, rejection or revision. Only approved projects move forward for review at the college level. The college review committee conducts further scientific peer review by highly qualified individuals as well as a designated statistician and other appropriate faculty. Outside expertise, including researchers around the nation and stakeholder review is also used.

Kentucky State University (KSU) - College of Agriculture, Food Science, and Sustainable Systems (CAFSSS) supports program areas according to the needs of our clientele - the small and limited-resource farmers, minority and underserved communities, and diverse and at-risk youths. The identified planned programs for both research and extension are reviewed by committees. Research programs are proposed and are peer-reviewed based on scientific merit and relevance to state, national and regional USDA priorities and the KSU-CAFSSS mission. All Evans -Allen supported proposals are first sent for external peer-review by at least two scientists outside KSU to ensure the relevance and quality of the science. University of Kentucky faculty are often included on the proposal review panels in addition to peer reviews via, regional, national, and professional association colleagues.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups

- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public
- Other (Training stakeholders in expectations relative to program needs)

Brief explanation.

The Kentucky Extension Advisory Council System has served as a primary mechanism for gaining input into program direction and development. For programs to meet the needs of the audiences they intend to serve, county level councils are to be diverse enough to represent the various constituencies within the counties including underserved and underrepresented audiences. Their purpose on the council is to express their own needs as well as to gain additional resident perspectives through traditional and non-traditional means in order to provide input into development of local extension programs. These representatives of the various audiences are not only involved in planning but also implementation and evaluation of those programs. In addition to a county extension council, each county also has an agricultural advisory council, homemaker's council, home economics advisory council, and 4-H council. They communicate research and resource needs to the universities. Through an Issues Gathering Process, topics of greatest importance are brought forward through district and state meetings attended by leaders, extension agents, extension program coordinators, and district directors. The issues identified are then presented to state program leaders, extension specialists, and department chairs for response.

Each county also has a district board that manages the fiscal affairs of the Extension office. The board is comprised of citizens in the county that represent the various program areas, plus the county judge executive.

As full partners, the Cooperative Extension Service and Kentucky Agricultural Experiment Station set priorities for research activities with information from the county extension councils, district issues and program committees, and the University of Kentucky Council for Agricultural Research, Extension and Teaching (UK-CARET). UK-CARET functions as an advisory and advocacy group for the College of Agriculture. Members have an opportunity to advise in the development of college priorities and assist in generating public support for those priorities at state and national levels. UK-CARET is representative of the full scope of the land-grant mission:

Extension, research, instruction, and service. Membership is comprised of active and progressive leaders in agricultural and natural resource enterprises. UK-CARET provides a direct link to the national CARET organization. Two members of UK-CARET are designated as national CARET representatives. KSU's CARET representatives work closely with the University and are engaged in advising and representing the interests of its programs. KSU-CARET representatives also participate in national and state policy discussions and assist in the formation of partnerships that will generate programs and resources for KSU's expanded mission with its new college.

In addition, the experiment station meets formally with other entities: quarterly with the

Kentucky Tobacco Research Board to set priorities for research by the Kentucky Tobacco Research and Development Center to assist in the transition from the tobacco-based economy.; bi-annually with the UK Ag Equine Programs advisory committee and board of the Gluck Equine Research Foundation to discuss priorities for the equine industry; bi-annually with the Ky. Soybean Promotion Board and Small Grain Growers Association to discuss research priorities for funding programs in support of crop producers across the state; monthly with the Kentucky Cattleman's Association and other animal agriculture groups to ensure that research is addressing the needs to Kentucky's livestock producers . Chairs and other administrators with appointments to numerous other associations and committees provide links to stakeholders that cover a wide range of research interests including but not limited to forest products, vineyards, smart growth, land management, and the green industry.

KSU meets with and receives program guidance from Kentucky State Goat Producers, American Goat Federation, as well as local and regional goat producers groups; Southern Sustainable Agriculture Working Group (SAWG); Community Farm Alliance; USDA NRCS; Catholic Charities; KY Department of Agriculture; Federation of Southern Cooperatives; Organic Association of Kentucky (OAK); The Kentucky Agricultural Council; Kentucky Nut Growers Association; Kentucky Vegetable Growers Association; Kentucky State Horticulture Society; The North American Pawpaw Growers Association; World Aquaculture Society; Paddlefish Alliance; Kentucky Aquaculture Association; US Freshwater Prawn Growers Association; Governor's Aquaculture Task Force; National Aquaculture Association; and Kentucky Office for Health Equity; Kentucky Department of Public Health and county health departments; and faith-based organizations.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Use Surveys
- Other (Program participants; Project Collaborators)

Brief explanation.

The Kentucky Cooperative Extension program development process is based on a grassroots, six-stage model that begins with the engagement of local advisory councils for agriculture, 4-H, Family and Consumer Sciences and Extension Homemakers. All program committees used a variety of methods for capturing input, including council dialogue and discussion, focus groups, surveys, program evaluations, and working with other local agencies and organizations. Information from program committees are then shared with the total county Extension councils. Membership on these councils includes a broad cross-section of the people in the county representing all demographic and economic segments as well as government, business, education, and community organizations in addition to those identified as under-represented and underserved audiences in extension programs. County Extension Councils assist Extension personnel in identifying program opportunities through which extension and local community organizations could effectively bring about positive change. Councils also help establish program priorities for which county program plans and outcome goals are written. Counties also utilize a process for examining their council makeup and utilize membership committees and a rotation system to ensure new individuals have

an opportunity to serve.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Survey of the general public
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Serving on advisory groups/councils for organizations)

Brief explanation.

Even when Extension advisory councils appear to be broadly representative of the local population, it is possible that established program priorities fail to target important issues. Agents count heavily on their council members to identify program needs but recognize it is a mistake to think that the personal experiences of 15-40 individuals serving on the local Extension council can adequately identify the needs of the total population. Agents are trained to broaden that expression by involving members of the council in conducting a 'situation analysis.'

Councils use three major sources of information useful in conducting a situation analysis. (1) The first is data that have been collected by someone else. This is typically called secondary or existing data.(2)The second is resident perspectives about issues, problems, resources and opportunities.(3)The third information source is current research and knowledge which may have implications for county programming. Extension Councils began the program development process by collecting situational data from these three sources. Council members and Extension staff together or independently pulled this information together. Additional meetings of councils are held to review the data and discuss the implications of the findings. The product of this discussion is a list of program opportunities which may merit Extension's involvement. While existing data and current research and knowledge are as close as a computer and the internet, the council delegates themselves must be diligent in capturing local resident perspectives through one or more of several methods. Agents and local leaders were trained in the following methods:

Community Forums - Community forums are public meetings in which individuals are invited to share and discuss their perspectives on issues facing the community.

Focus Group Interviews - A focus group interview is a structured discussion with a small group of eight to twelve individuals on a clearly defined topic.

Key Informant Interviews - In any community, there is a number of individuals who, because of their unique position within the community, can provide important information about local issues and needs.

Surveys - Surveys are a cost effective way of gathering data from a large number of people.

Media Scan - A systematic review of the content of news articles and editorials appearing in local newspapers and on local radio and television stations provides more information about the community.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

Information from stakeholders drives research and extension agendas including our pursuit of resources to conduct research and educational programs. In addition, stakeholder input has been utilized across the board for hiring, budget development, resource acquisition, program implementation, and evaluation. Our stakeholders have also provided a voice in communicating the successes of the organization to campus administrators as well as to outside and nontraditional groups and decision makers.

Brief Explanation of what you learned from your Stakeholders

Some of the issues that were identified and/or were under discussion in FY13 included:

Military Families - Stakeholders recognize that Military families face unique challenges and struggles. Kentucky Extension is working to provide a way to help military families bond and reconnect when they return from a deployment, through free camp experiences and other opportunities such as Operation Military Kids

Financial Management- Assisting families during these tough economic times remains a priority. Our stakeholders have indicated that families are in need of Extension's expertise on saving more and spending less. Youth are also in need of being educated on managing financial resources.

Beginning/Young Farmers - An emphasis continues to be placed on to meet the needs of beginning farmers. An intensive education program is targeting at those individuals who have ten years or less farming experience. Many of our stakeholders fall into this category or have children who want to gain knowledge on ways to continue with the family tradition.

Environmental Issues- Clientele have reported a need to continue educational resources on environmental stewardship related to the home, farm, woodlands, travel, garden, youth and work.

Health Disparities/Weight Management -Obesity continues to be a problem in Kentucky and a far reaching health concern of local residents. The epidemic contributes to a host of illnesses, including diabetes. Stakeholders need current materials that are easily accessible either in the local office or as web-based resources to make informed health choices.

Disaster Education Program - Extension is working on programming that provides expert advice and assistance to communities during times of natural disasters. Stakeholders see this as a priority and resources are being developed and committees have formed.

Professional Development training for agents/volunteers-With the cost of travel sky-rocketing, stakeholders and agents found ways to reduce costs. We continue to promote additional Distance Learning Technology to enhance communication and educational efforts through a network of videoconferencing sites in key Kentucky counties, saving clientele and personnel time and travel expense and increase issue response time.

Camp Improvement Initiative - Kentucky 4H heard the voice of stakeholders and have completed a multi-million dollar renovation project at several camps with several revisions on the

way.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
8469105	2910978	5993865	3304446

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	8994344	1451885	5953431	1511007
Actual Matching	8469105	666961	24915598	670108
Actual All Other	0	0	14997523	0
Total Actual Expended	17463449	2118846	45866552	2181115

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	0	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Life Skill Development
2	Leadership and Volunteerism
3	Diet, Nutrition and Healthy Lifestyles
4	Social and Economic Opportunity
5	Global Food Security and Hunger
6	Agricultural and Environmental Quality
7	Food Safety
8	Climate Change
9	Sustainable Energy
10	Childhood Obesity

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Life Skill Development

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
801	Individual and Family Resource Management	4%	70%	0%	0%
802	Human Development and Family Well-Being	54%	10%	13%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	1%	77%	0%
805	Community Institutions, Health, and Social Services	0%	0%	10%	0%
806	Youth Development	42%	19%	0%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	120.0	16.0	0.5	0.0
Actual Paid Professional	121.0	10.5	4.1	0.0
Actual Volunteer	149944.0	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
2158643	234838	229331	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2032585	217607	1074683	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	269923	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Through extension specialists, agents, project coordinators, and program assistants, CES will partner with schools, businesses, and local agencies to present programs designed to build life skill opportunities and improve quality of life in adults and youth. Examples include:

- In-service training for extension agents on planning and retirement
- Agents and specialists conducting estate planning and retirement workshops and meetings for adult citizens of Kentucky
- Agents providing extension homemaker lessons on wills and retirement
- Small Steps to Health and Wealth and GPS Programming have become life skills featured programs
- Estate planning and retirement publications will be made available to the public through the web, meetings and activities and county extension offices
- Agents and community collaborators training parents, grandparents and community partners in attachment and literacy building, child development, and preventive and non-violent discipline
- 4-H project groups with six hours or more of teaching time
- One-day 4-H project groups
- Camp classes
- Senior conference track: Child Care- Beyond Babysitting
- Middle school career classes - in school and on Web
- Alternative school day calendar programs
- School-sponsored day care centers for faculty and students
- Family Development and Management program for limited resource families,
- Entrepreneurship Camp for High School Students
- * STEM-focused enrichment programs for youth

Through research, faculty in the departments of Community and Leadership Development explore topics such as family firms and policy and the interactions of individuals, families, and communities in the context of the mental and physical health of diverse rural, low-income families. Research related to agricultural education is also included in his program.

2. Brief description of the target audience

- Agents, community collaborators, and adults interested in financial management and retirement
- Adults with low financial literacy
- Parents with children and grandparents
- 4-H youth from 9 - 19 for project work
- 4-H youth 11 and up for Babysitting and Beyond Youth entrepreneurs

3. How was eXtension used?

eXtension was used to access resource materials and contact colleagues for collaboration purposes. Webinars were also attended by state staff and faculty as well as county staff.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1222514	4113073	1112668	3796682

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	5	1	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of youth and adults who demonstrate increased practical living skills (learned through Extension programming)
2	Number of youth reporting the acquisition of one or more life skills as a result of participation in non-formal youth development programs conducted by Extension.
3	Number of youth and adults who demonstrate informed and effective decision-making.
4	Number of individuals who implemented at least one financial management strategy (e.g., checking credit report, developing a spending plan, etc.)
5	Number of individuals reporting changes in knowledge, skills, opinions or aspirations related to parenting or personal relationships.

Outcome #1

1. Outcome Measures

Number of youth and adults who demonstrate increased practical living skills (learned through Extension programming)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	148882

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In Kentucky, it is a priority to invest in youth with leadership and personal development opportunities. In order for young people to serve as competent leaders in the future, they must gain chances to develop the necessary skills today. Youth provide a significant source of human capital through the countless volunteer hours they contribute across the state, Now is the time to educate them on being effective decision makers.

What has been done

Various leadership programs have served as tools to promote leadership development among youth. The State 4-H Issues conferences have also been organized to challenge the participants to create and implement a real world action plan for community involvement. In addition, KSU also hosted educational programming to promote life skills such as preparing urban senior living residents to pass a cleaning inspection according to the HUD expectations.

Results

KSU-FCS provided educational programming by hosting a camp dedicated to teens starting at the age of 12-15 to develop leadership and life skills. UK offered several opportunities for youth to enhance skills. As a result, of the 46,094 youth indicating an increase in leadership skills, knowledge or confidence, 27,146 actually utilized these skills in communication and problem solving to address community issues. Over 5,000 youth took the lead (or were significant contributors) in addressing local issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

- 802 Human Development and Family Well-Being
- 803 Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 Community Institutions, Health, and Social Services
- 806 Youth Development

Outcome #2

1. Outcome Measures

Number of youth reporting the acquisition of one or more life skills as a result of participation in non-formal youth development programs conducted by Extension.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	90137

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Kentucky 4-H strives to empower youth with the skillsets needed to be successful in life. Youth who participate in 4-H in every Kentucky county have the opportunity to engage in the fundamental 4-H ideals that incorporate the experiential learning model. Research has shown that participation in 4-H contributes to higher educational achievement and motivation for future education, increased civic engagement, and lower risk of negative behaviors.

What has been done

Kentucky 4-H continues to reach over 200,000 youth across the state. This equates to more than a quarter of all students in grades K-12. A majority are members through various 4-H clubs, while nearly one-third are involved in special interest and short-term programming. Camp and school enrichment opportunities remain as the most common means of exposing youth to what 4-H has to offer. KSU collaborated with the KY Latino Education Alliance to lead cross-cultural and cross-organizational efforts for Latino student success. KSU also hosted a 4-H National Youth Science Day and the 4-H Eco-Bot Challenge, introducing youth to robotic engineering concepts and programming a robot to clean up a simulated chemical spill in the environment.

Results

Of the total number of youth involved in Kentucky 4-H, 46,094 reported an increase in leadership skills and gained self-confidence. Over 90,000 acquired one or more life skills through the 4-H

programming.

The Boone County Cooperative Extension Service taught elementary students about growing food in a garden. Students and adults prepared a garden and planted 1200 tomato and 800 peppers. The group made salsa from the produce; over \$40,000 of salsa has been sold.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
806	Youth Development

Outcome #3

1. Outcome Measures

Number of youth and adults who demonstrate informed and effective decision-making.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	79328

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth often lack the opportunities to engage in citizenship. Although they are expected to become future leaders, they are rarely given the chance to enhance these skills today. In order for young people to serve as effective decision-makers and ultimately as leaders of their communities, they must develop these skills within community programs.

What has been done

Extension programs are providing youth and adults the opportunity to collaborate as partners. Youth-adult partnerships have been shown to help youth develop critical skills while also allowing

adults to serve as mentors as they learn how effective youth can be as leaders. KSU also incorporated a career explorations component when connecting youth and adults to work together as decision-makers. A Teens on Wheels safety program was offered to youth age 15-19 with 161 teens have participated in the program.

Results

As a result of Extension programming, 79,328 youth and adults have demonstrated the ability to serve as informed and effective decision-makers. In addition, the KSU 4-H EnvironMentors program prepared high school students from under-represented backgrounds for college programs in environmental and related science fields and sponsored 3 students at the National EnvironMentors Science Fair. As a result of the Teens on Wheels Safety program, 91% of the teens polled indicated they had eliminated or reduced the amount of texting or talking on a cell phone while driving.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #4

1. Outcome Measures

Number of individuals who implemented at least one financial management strategy (e.g., checking credit report, developing a spending plan, etc.)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	21217

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research shows that a majority of society members are unaware of basic money management. During the period of economic recession and in the continued slow recovery, Kentucky consistently lagged behind other areas of the United States in household economic indicators, including personal income, population living below the poverty line, and unemployment rates. Many individuals, families, and households were unprepared to manage the rapidly changing economic conditions. With these tough economic times, Kentucky residents are in need of educational programs that will assist in their understanding of financial management.

What has been done

The University of Kentucky continues to provide resources through the Management in Tough Times initiative. Kentucky State University's Family Development and Management (FDM) program continued collaborations to teach families about budgeting, nutrition, food safety, parenting skills, and home financial management workshops working with public housing. KSU also offered classes for those seeking employment after layoffs, downsizing, and company closings, addressing interview skills and updating resumes, and basic computer knowledge. The Building Money Management Skills Program hosted Small Steps to Health and Wealth, an online tracking program that provides education on components of wellness and finances.

Results

A total of 33,293 Kentucky adults reporting an increase in knowledge, opinions, skill or aspirations related to money management. Of the youth who also participated in programming, 44,001 reported an increase in knowledge, opinion, skills or aspirations. Over 21,000 individuals in general, reported implementing at least one financial management strategy (e.g., checking credit report, developing a spending plan, etc.). As a result of the Building Money Management Skills program, 66% (of the 69 participants) indicated that they had identified money management strategies for their family. Of those participating in the KSU employment classes, 25% indicated that they were going to further their education and about 45% had found employment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

Outcome #5

1. Outcome Measures

Number of individuals reporting changes in knowledge, skills, opinions or aspirations related to parenting or personal relationships.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	17477

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

High-risk factors can significantly impact the lives of youth and those around them and it is essential that parents, educators and other concerned adults become aware of the prevalence of the needs of children

What has been done

As a part of Keys to Great Parenting, Cooperative Extension with the Department for Community Based Services offers parenting courses to court-ordered parents. KSU FCS Strengthening Kentucky (SKY) Families Program addressed needs of families referred through family court with tools and strategies for parenting, serving African American, bi-racial, Hispanic, and children disproportionately represented in the county child welfare system.

Results

As a result of UK and KSU programming, 17,477 individuals reported a change in knowledge. Fifty-eight parents completed the KSU court-ordered parenting program within the 12-month period. A number of counties have reported being able to apply certain principles to their parenting styles. In turn, many have been able to see more positive results in their relationships with their children. In two counties, Parents indicated they were appreciative of the classes offered by Extension and the information shared. Court liaison reported that 50% of the parents had their parenting privileges restored and that the parenting classes they received through the Extension service were instrumental in their success.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See outcomes above

Key Items of Evaluation

Surveys, follow-up interviews, observations, secondary data analysis

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Leadership and Volunteerism

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
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	100%	37%	0%	0%
903	Communication, Education, and Information Delivery	0%	63%	0%	100%
Total		100%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	77.0	2.0	0.0	0.0
Actual Paid Professional	59.0	8.0	0.0	4.0
Actual Volunteer	85324.0	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
1079321	350171	0	230373
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1016293	177136	0	65048
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

- Community leadership development programs will be conducted for the general public as well as training for those serving in leadership roles in extension councils and district boards, extension homemaker organizations and 4-H programs. •Extension will continue to utilize SEAL (Strengthening Extension Advisory Leadership) materials with extension leaders and in training facilitators to conduct local community programs. •Counties will identify volunteers and send them to certification workshops, thereby reaching more 4-H members across Kentucky. •Kentucky 4-H members will receive consistent, uniform education through school enrichment programs, after-school programs, day and /or summer camps and through communications events in the 4-H "Step Up to Leadership" and 4-H Communications - Speeches and Demonstrations projects and programs. Title VI and diversity workshops including True Colors training will be offered to program and county councils.

2. Brief description of the target audience

- General public as well as those serving in leadership roles in extension councils and district boards, extension homemaker organizations and 4-H programs •Volunteers from Kentucky counties with appropriate background and experience in subject matter that we can build on for 4-H subject matter and leadership training •"Step up to Leadership" curriculum and activities are designed for youth in grades K-12 Community-based non-profit organizations

3. How was eXtension used?

eXtension materials were used as a resource for developing program ideas; faculty and staff participated in webinars

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	481121	820571	211485	368662

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of people who are involved in addressing significant community issues.
2	Number of people who increase their knowledge of governmental process
3	Number of youth who held leadership and/or advisory positions on community boards
4	Number of youth indicating increased leadership skills, knowledge or confidence through participation in Extension-related leadership programs
5	Number of adults indicating increased leadership skills, knowledge, and/or confidence through participation in volunteer programs related to youth development

Outcome #1

1. Outcome Measures

Number of people who are involved in addressing significant community issues.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	29314

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Although Extension develops a plan of work each year to develop programs that are needed to address local issues, there are times that a quicker response approach is required. Many of the issues can cause conflict within communities.

What has been done

Conflict resolution trainings have been conducted. High school seniors had the opportunity to learn about ethics in the work place, education and community.

Results

Extension assisted 29,314 individuals with addressing community issues and in conflict management workshops. Based on evaluations, community residents learned how to listen to the real needs of people in conflict and to address public conflicts in ways that can meet the interests of key parties in the dispute. The high school seniors (40) completed 1,045 hours of volunteer time and had the opportunity to enroll in a free college class (GEN 120 Service Learning).

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Number of people who increase their knowledge of governmental process

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	24267

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many Kentucky residents are unaware of the political process locally or at the national level.

What has been done

Training on the legislative process was conducted by multiple counties, with emphasis on how to communicate to legislators, and how pending legislation would affect their own operations (specifically, the farm bill). KSU Extension conducted classes on government policies that pertain to estate planning and various related topics.

Results

In one county, District Board members logged over 400 volunteer hours. Over 24,000 individuals across the state increased their knowledge of governmental processes. A follow-up survey from KSU estate planning classes indicated that 25% of the participants reported making changes in their estate plans and/or wills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Number of youth who held leadership and/or advisory positions on community boards

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	702

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Building the capacity of youth leaders within counties is critical for community sustainability and viability. Developing leadership is a primary way to build capacity, while also having a positive effect on community infrastructure, groups and families. Building civic capacity and personal leadership awareness among youth are also imperative ways to develop a viable, action-based community for the future. Many communities discuss a need for youth to have a voice, but there is still a lack of opportunities for youth serving on boards.

What has been done

Numerous youth leadership programs have been implemented across the state.

Results

A total of 702 youth served in leadership positions on advisory boards. Leadership Ballard received \$2,400 in sponsorship from the Ballard County Chamber of Commerce and its members this year. This group of 18 students learned about state government through a tour of the state capitol, Kentucky History Center and Vietnam Memorial. Also, an evaluation of the State 4-H Teen Council revealed self-perceived changes in behavior and ability related to leadership. The council became more accepting of challenges, which revealed a more general sense of confidence among the group. 4-H provided monthly project meetings at Sunrise Children's Home for the 27 in-treatment boys living at the facility.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and

903 Communities
Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

Number of youth indicating increased leadership skills, knowledge or confidence through participation in Extension-related leadership programs

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	46094

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Building the capacity of youth leadership within counties is critical for the sustainability of a community infrastructure. Many youth do not get the opportunity to share their expertise and time in their community. Therefore, they are often not engaged and empowered to understand issues and take ownership for implementing solutions.

What has been done

4-H Teen Leadership Team have been established consisting of students in grades 9-12 to participate and volunteer in 4-H programs designed for younger members. The youth participate in the communications contest, and conduct meetings with parliamentary procedure to decide on activities for the group. KSU has implemented programs such as Health Rocks to teach youth about taking leadership in regards to healthy decision making. KSU also hosted AgDiscovery (AgD) Program for 20 students to introduce animal science and veterinary medicine through educational activities, hands-on lab and research projects, workshops, and site visits.

Results

With youth being engaged in leadership programs, counties are seeing 90% or more of youth developing the confidence to be leaders. KSU coordinated Health Rocks! for all of KY Extension working with more than 1,438 students on how to make healthy lifestyle choices; understand the consequences of tobacco, alcohol, and drug use; and to become health advocates for their peers. Altogether, 46,094 indicated increased leadership skills, knowledge or confidence through participation in Extension-related leadership programs

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #5

1. Outcome Measures

Number of adults indicating increased leadership skills, knowledge, and/or confidence through participation in volunteer programs related to youth development

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	13094

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Building the capacity of leaders within counties is critical for community sustainability and viability. Developing leadership is a primary way to build capacity, while also having a positive effect on youth and families. Building civic capacity and personal leadership awareness are also imperative ways to develop a viable, action-based community.

What has been done

Adequate training for youth development volunteers remains an essential component of Kentucky Extension programs.

Results

Of the 13,094 adults involved in youth development programs, 100% reported having an increase in leadership skills and more confidence in working with youth programs. Volunteering approximately 2832 hours in teaching and community service, 227 recorded volunteers in one county contributed \$50,721.00 in volunteer time, based on the 2011 Independent Sector estimate for Kentucky.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

See data above

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See outcomes listed above

Key Items of Evaluation

Assessment instruments, observations, focus group discussions

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Diet, Nutrition and Healthy Lifestyles

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
502	New and Improved Food Products	0%	0%	15%	0%
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	25%	0%
703	Nutrition Education and Behavior	96%	96%	0%	100%
721	Insects and Other Pests Affecting Humans	0%	0%	32%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	0%	6%	0%
723	Hazards to Human Health and Safety	0%	0%	18%	0%
724	Healthy Lifestyle	4%	4%	4%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	95.0	2.0	3.0	5.0
Actual Paid Professional	77.0	2.0	7.3	2.0
Actual Volunteer	41334.0	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
1349152	60291	222346	37831
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1270366	48395	1455450	40587
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1462301	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Contacts with clientele related to diet and health will include volunteer training, health fairs, Extension Homemaker leader lessons, safe night programs, healthy homes programs, and more.
- Multidisciplinary programs aimed at strengthening local food systems. Examples of programs to be offered will include: 4-H school enrichment, after-school programs and dayand/or summer camp programs on 4-H Jump into Foods and Fitness. Weight--the Reality Series - Body Image and Get Moving Kentucky physical activity and weight management programs, LEAP-Literacy, Eating and Activity for Preschool Program and Exploring MyPyramid with Professor Popcorn for elementary school age children. •EFNEP - Expanded Food and Nutrition Educational Program for low income families with children. •Multi-agency activities related to diet and health. •Continued research in the areas of nutrient effects of high-fat diets, antioxidant effects on cancer prevention, environmental effects on nutrient requirements and more.

Major research efforts in this program area include: • Food consumption and physical activity are being examined as indicators of risk for obesity in preschool children. •The combined effects of selected vegetables on bone metabolism are under study as it pertains to osteoporosis. • The nutritional status and health of agricultural workers. • Bioprotective effects of phytochemicals to mediate immunity and antigenotoxic potential

2. Brief description of the target audience

- Extension agents
- Community agencies
- Volunteer leaders
- Parents
- Grandparents
- General public
- Public housing residents
- Scientific community
- Jump into Food and Fitness

participants: curriculum designed for youth ages 8-11

3. How was eXtension used?

Extension professionals accessed materials and participated in webinar trainings

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	697570	2629119	321060	1237233

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	9	20	29

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	25

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals who experienced an increase in knowledge, opinions, skills or aspirations regarding lifestyle changes (diet, exercise, healthy home practices, managing stress, etc.) that improve personal health
2	Number of individuals who made lifestyle changes (diet, exercise, healthy home practices, managing stress, etc.) for the purpose of improving their health
3	Number of individuals implementing personal health protection practices (screening, immunizations, well-baby care, preventive health practices, etc.)
4	Number of individuals who reported practice changes related to safety (use of bicycle helmets, fire extinguishers, tractor roll bars, radon testing, smoke detectors, proper ATV operation, etc.).

Outcome #1

1. Outcome Measures

Number of individuals who experienced an increase in knowledge, opinions, skills or aspirations regarding lifestyle changes (diet, exercise, healthy home practices, managing stress, etc.) that improve personal health

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	133794

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Children need adequate, nutritious food to become healthy adults. Several Kentucky counties have seen the number of children receiving SNAP benefits double in the past ten years (2010 Kentucky KIDS COUNT Data Book). Nutrition Education Programs can help families: gain access to food and stretch food dollars; decrease hunger within their communities, and; educate recipients in local food assistance programs on healthy and safe food preparation methods.

What has been done

Nutrition workshops have been conducted to address cancer, diabetes, and heart disease within families. Youth have been exposed to proper nutrition through school and community based initiatives. A partnership with County School Food Service Directors have helped to increase awareness of the need for healthy food choices and trying new foods among youth.

Results

A total of 133,794 experienced an increase in knowledge, opinions, skills or aspirations regarding lifestyle changes that improve personal health. This has been due to the success of several programs across the state. One has been the Taking Ownership of Your Diabetes programs. In addition to increasing knowledge on ways to improve nutrition, participants have demonstrated the ability to make better health choices and experience a higher quality of life. Moreover, based on similar studies by colleagues in other states, this program has the potential to save \$7,897,600 in healthcare costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of individuals who made lifestyle changes (diet, exercise, healthy home practices, managing stress, etc.) for the purpose of improving their health

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	53752

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A significant percentage of Kentuckians are considered obese according to the Center for Disease Control. This epidemic is largely blamed on the convenience of foods lacking nutrition and instead contain high amounts of fat, salt, sugar, and calories which lead to increased body mass. Living a healthy lifestyle requires knowledge of nutritious foods, ideas for tasteful preparation, and ample physical activity. Extension can fill a void by offering programs that teach citizens how to access nutritious foods.

What has been done

Plate It Up is a new program that partners with the Kentucky Department of Agriculture to educate clientele on the importance of growing and consuming fresh foods. Demonstration kitchens at several Extension offices are resources that enable Extension to provide quality programming to a wide range of audiences. KSU Center for Family Nutrition and Wellness Education reached nearly 5,000 elementary and middle school students to increase nutrition education and physical activity.

Results

Of the 133,000 participants indicating that they experienced an increase in knowledge concerning healthy foods, 40% noted that they actually made lifestyle changes as a result of Extension

program efforts. Students in the KSU program demonstrated an increase in knowledge, by nearly 23%. In Grayson County, Extension hosted a weight lost challenge, in which participants shed 519.5 pounds during the challenge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Number of individuals implementing personal health protection practices (screening, immunizations, well-baby care, preventive health practices, etc.)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	25174

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Statistics show that health-related illnesses are on the rise in Kentucky. This is due in part to more residents not being aware of ways to proactively combat diseases that are preventable.

What has been done

A number of festivals have been organized, programs implemented and curricula used by Extension to promote healthy practices. Individuals and families alike have been targeted. The Boone County Cooperative Extension Service sponsored a Fit to a T program in cooperation with the National Bone and Joint Health Initiative and St. Elizabeth Hospital. In addition, KSU leads the statewide HealthRocks! Program for youth ages 10-15. KSU also conducts research to study metabolic syndrome (MetS) related to heart disease, sweet potato diet related bone loss and estrogen deficiency, and the correlations of individual understanding of body weight and the associated problems.

Results

Of the 186,511 people reached through Extension's programs related to health and safety, 13% implemented personal health protection practices. Several programs are reporting that 90% of their participants are getting more exercise and are now making healthier food choices. Through the efforts of KSU, youth learned how to practice positive health behaviors.

As a result of the Boone County Extension program, 18% (out of 22 people) indicated they had discussed osteoporosis and their heel scan results with their physicians. More than half (64%) started exercising or increased the amount of exercise they do. Almost half (45%) increased their intake of calcium-rich foods.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

Number of individuals who reported practice changes related to safety (use of bicycle helmets, fire extinguishers, tractor roll bars, radon testing, smoke detectors, proper ATV operation, etc.).

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	19364

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Safety and healthy practices continue to be a concern for all Kentucky families. Although farmers account for only 2% of the workforce population, the National Safety Council continues to rank agriculture as one of the three most hazardous occupations in the United States. Teaching youth the life skills to take care of themselves is very important in their development. Fall-related hospitalizations for seniors is another issue that must be addressed in the state, as it equates to thousands of dollars in medical expenses each year.

What has been done

Farm safety days were organized around the state. These addressed various safety issues such as fire safety, electric safety, ATV safety, tractor safety, gun safety, kitchen safety, and animal safety. Food safety programs are also very prominent throughout Kentucky

Results

Of the 19,364 participating individuals who reported practice changes related to safety (or similar programs), county agents reported that clientele felt more confident in adopting safety practices after having obtained some basic skills through Extension programs. At least 80% of participants in most counties said they would read the label more closely before applications.. Many Participants also reported they would utilize proper safe food preservation techniques. Farm safety days were organized around the state. These addressed various safety issues such as fire safety, electric safety, ATV safety, tractor safety, gun safety, kitchen safety, and animal safety. 60% of the youth in attendance reported that they intend to follow safety rules at home.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See outcomes above

Key Items of Evaluation

Pre Post surveys, observation protocols, focus group discussions

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Social and Economic Opportunity

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
601	Economics of Agricultural Production and Farm Management	0%	80%	16%	100%
602	Business Management, Finance, and Taxation	6%	1%	14%	0%
603	Market Economics	0%	0%	14%	0%
604	Marketing and Distribution Practices	21%	0%	10%	0%
605	Natural Resource and Environmental Economics	0%	0%	18%	0%
606	International Trade and Development	0%	0%	12%	0%
607	Consumer Economics	0%	19%	7%	0%
608	Community Resource Planning and Development	72%	0%	9%	0%
610	Domestic Policy Analysis	1%	0%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	2.5	3.0	2.0
Actual Paid Professional	30.0	4.0	10.4	0.5
Actual Volunteer	25856.0	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
539661	239318	583291	25217
1862 Matching	1890 Matching	1862 Matching	1890 Matching
508146	24334	1666025	8406
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1176631	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Delivery of educational programming and workshops on topics such as understanding community dynamics, asset analysis, business planning, marketing and hospitality management
- Efforts to educate producers about marketing and adding value to Kentucky Agricultural products including MarketMaker, Agritourism, Farmers Markets, Kentucky Proud Campaign, specialty livestock markets and marketing programs, Kentucky Entrepreneurial Institute, etc.
- Formation of nontraditional advisory councils in the areas of community and economic development, tourism, agritourism, and arts where appropriate need and resources are identified
- Research projects include an assessment of the economic impact of the equine industry in Kentucky, and urban vs. rural food access and cost, and the creation of consumer demand and market valuation models for the produce sector
- The Family Economics and Management Program will focus on Earned Income Credit and Tax Credit opportunities for Kentucky Families. Youth entrepreneurship education
- Entrepreneurial development and outreach to educate local officials and leaders on the importance of planning for economic development

KSU has research projects focusing on aquaculture and livestock integrated into a farm analysis for limited resource farmers and documenting oral histories of black farmers in Kentucky.

2. Brief description of the target audience

- county extension agents
- Kentucky crop, livestock, produce producers
- entrepreneurs
- agritourism providers
- active and potential community leaders
- 4-H members
- scientific community
- High school students, teachers, and counselors
- Locally elected and appointed officials

3. How was eXtension used?

Extension professionals accessed materials available through eXtension (publications, webinars, collaborated with colleagues)

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	458260	2550951	93218	522484

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	3	4	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of new coalitions formed as a result of Extension efforts
2	Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to economic or enterprise development
3	Number of farmers self-reporting an increase in profits as a result of adopting one or more practices recommended by Extension
4	Number of citizens (youth & adults) utilizing skills learned through Extension programming

Outcome #1

1. Outcome Measures

Number of new coalitions formed as a result of Extension efforts

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	339

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension strives to form coalitions with various partners at the local and state level. With the increasing level of accountability needed, the organization is working to form more ties with those that can help enhance programming efforts.

What has been done

The Bluegrass and Lake Cumberland Area FCS Agents and Cultural Arts Chairpersons collaborated to host a very successful combined Heritage Skill Retreat. Barren River Area Development District (BRADD) hosted a Leadership Appreciation Breakfast for state legislators, local county judge executives, county Extension district board and extension council chairpersons. The Kentucky 4-H Performing Arts Troupe and Leadership Board were created.

Results

At the Heritage retreat, a variety of classes were offered allowing participants the opportunity to learn new cultural arts skills, and demonstrate leadership. Almost half of the participants said they are returning to their county to teach new skills to their Homemaker clubs, friends, family, and to hold classes at their county Extension Office. The Leadership Appreciation Breakfast has been a useful tool to reiterate to Kentucky lawmakers and local officials the relevance of the Extension system. A total of 339 additional coalitions have been formed as a result of Extension efforts. Several Kentucky counties have formed Farm to school programs, a coalition with their local school systems. The KSU Small Farms Program assisted producers in identifying opportunities to generate additional operating funds.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to economic or enterprise development

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	22668

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Developing community infrastructure supportive of higher quality of life opportunities is a critical component of economic initiatives.

What has been done

A local partnership with the Chamber of Commerce, Extension Service, local government, and the Barren River Lake Corps of Engineers facilitated the development of the new Port Oliver Recreational Area on the Allen County shoreline of Barren River Lake. Local Kentucky businesses and non-profit organizations have been promoted at business expos across the state. Rowan County 4-H conducted entrepreneurship classes to two 5th grade classrooms for two weeks using the Be The "E" and BizWorld curricula.

Results

As a result of improvements to recreational areas, there has been an improvement in quality of life. Also, businesses have profited due to having venues where they can sell their products. These events also help promote all aspects of the Cooperative Extension Service to show taxpayers what is available through our educational resources, programs and leaders. As a result of the Be the "E" program in Rowan County, more than 87% of the 69 students reported that they learned the difference between supply and demand, how to calculate the record profit and loss income and the five steps to starting a business.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics
607	Consumer Economics
608	Community Resource Planning and Development
610	Domestic Policy Analysis

Outcome #3

1. Outcome Measures

Number of farmers self-reporting an increase in profits as a result of adopting one or more practices recommended by Extension

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	8608

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension has been instrumental in assisting farmers with the transition away from tobacco since the tobacco buy-out. However, agents have been faced with the challenge of encouraging farmers to explore new means of generating income. This calls for farmers to venture into areas that may not be as familiar to them.

What has been done

Kentucky Master Settlement Funds are helping farmers to diversify and to make needed improvements in individual farm operations. KSU Small Farm Programs worked with Farm Service Agency (FSA) and KY Ag Development Board to help farmers obtain operating funds. The KSU small farm program worked with small-scale poultry producers to realign their business

models, optimize the use of the KSU mobile processing unit (MPU) to increase their profits, and provide more product to local consumers. KSU also hosted the annual Small, Limited-Resource, Minority Farmers Conference for 200 minority and women farmers from KY and the Southern Region. In addition, the marketing of aquaculture alternative freshwater species (such as freshwater prawns, catfish, and largemouth bass) in Kentucky was examined.

Results

KSU assisted a beekeeping group in securing a \$3,000 Small Scale Farm Grant to purchase honey-extracting equipment for allowing faster honey extraction, with reduced health risks, due to reduced human contact with extraction. In addition, with funding from the Governor's Office of Agricultural Policy, the KSU Center for Sustainability of Farms and Families administered the Small Scale Farm Grant Program of more than \$233,902 to 53 recipients to enhance their farming enterprises. As a result of the Farm to School Program in Wayne County, Students picked over 2,000 lbs. of grape tomatoes that were utilized by the school food service. These tomatoes, worth about \$4,000, represent half of the value of the produce provided and utilized by the school lunch system.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
607	Consumer Economics
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Number of citizens (youth & adults) utilizing skills learned through Extension programming

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	184987

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Middle school students in economically distressed Appalachian counties are faced with the challenge of eventually leaving the region or creating their own enterprises. It is estimated that more than 20% of rural Americans have their own part-time or full-time businesses. This percentage is expected to continue to grow over the next decade.

What has been done

E-Discovery Challenge is a unique youth entrepreneurship program in Kentucky that gives teachers the tools to help students launch new businesses, generate income and still meet state-mandated learning requirements. KSU also conducted educational programming for limited resource and minority farmers, as well as working with teen women addicted to drugs and alcohol.

Results

Extension taught 207 teachers who helped almost 2,600 middle school students to launch 535 new businesses which sold products and services to members in the community. Students learned how to stimulate creativity, build teams; conduct market research; develop marketing plans and financial projections; repay seed money and sell products or services. Based on evaluations from teachers, the program has achieved significant successes. The teachers reported that the program has helped them and the students to be more creative. Students, parents, community members and others have been energized by the experience. Eighteen teachers reported that the program had a positive impact on test scores; while most of the others indicated it "probably" had an impact. KSU worked with limited-resource and minority farmers to add small commercial vegetable (SCV) farming to their enterprises. SCV enterprises have resulted in \$5,000 to upwards of \$70,000 gross revenues for these farmers. Out of the participants involved in the KSU program that addressed the needs of women struggling with substance abuse, one participant gained employment and 2 enrolled in college.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics
606	International Trade and Development
607	Consumer Economics
608	Community Resource Planning and Development

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
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Data included in outcomes

Key Items of Evaluation

Pre-post surveys, follow-up interviews, observations

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger

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
102	Soil, Plant, Water, Nutrient Relationships	0%	24%	0%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	6%	0%
205	Plant Management Systems	56%	47%	7%	40%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	19%	0%
212	Pathogens and Nematodes Affecting Plants	0%	0%	12%	0%
215	Biological Control of Pests Affecting Plants	0%	0%	9%	0%
216	Integrated Pest Management Systems	0%	0%	2%	0%
301	Reproductive Performance of Animals	0%	0%	12%	0%
302	Nutrient Utilization in Animals	0%	0%	13%	0%
303	Genetic Improvement of Animals	0%	0%	2%	0%
304	Animal Genome	0%	0%	5%	0%
307	Animal Management Systems	37%	23%	4%	35%
308	Improved Animal Products (Before Harvest)	0%	2%	0%	5%
311	Animal Diseases	0%	0%	7%	5%
401	Structures, Facilities, and General Purpose Farm Supplies	0%	0%	0%	5%
402	Engineering Systems and Equipment	0%	0%	2%	5%
601	Economics of Agricultural Production and Farm Management	0%	2%	0%	5%
604	Marketing and Distribution Practices	7%	2%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890

Plan	180.0	15.0	55.0	13.5
Actual Paid Professional	155.0	11.0	107.2	23.0
Actual Volunteer	31830.0	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
2788247	482447	3383216	744673
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2625423	57541	13556002	406498
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	7434733	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The development and transfer of technical resources is a critical dimension of a strategy to advance agriculture and the competitiveness of the state's agricultural economy.

- Field days, demonstration programs, plotwork and hands-on training by agents and specialists will continue to be important mechanisms for disseminating technical information on production agriculture and horticulture
- Printed material, mass media, Web sites, audio, and electronic communications will be employed to disseminate the latest research findings on decision-making
- Featured programs for this plan of work cycle will include: Grain Crops Academy, Master Grazer Program, Horse College and the Innovative Tobacco Producer Program
- Goat Production and Management Programs
- Small Farm Program at KSU will focus on needs of small and limited resource farmers,
- The Kentucky Fruit and Vegetable Conference plays a major role in commercial horticultural producer education
- Third Thursday programs will be conducted at KSU and their research and demonstration farms will attract small and limited resource farmers and will also serve as training for County Extension Agents and students
- Aquaculture and Fish Disease/Management Programs
- Master Cattlemen and advanced Master Cattlemen programs will be conducted
- Educational programs qualifying producers to receive Tobacco Settlement funds in the areas of goats, forages, bull selection and hay storage will improve producer skills in these areas
- New Research findings from KSU's Aquaculture Research center, pawpaw, goats, and honeybees will be the subject of field days and meetings to bolster the expanding alternative in Kentucky and the Southern Region Demonstration and training for appropriate production and processing of pastured poultry and honey.
- Home-based processing training
- On-site food demonstrations

Ongoing research at UK supporting competitive agriculture includes:

- improvements in plant pest and disease resistance
- optimization of cropping system inputs for maximum cost/benefit
- improvements in animal reproductive efficiency
- vaccine and other intervention development to improve animal health
- engineering solutions for sustainable plant and animal production
- optimization of animal nutrition
- interventions to improve access to healthy food in Appalachia
- biological pest control
- fundamental investigations of plant, animal and pathogen biology

KSU has active research areas in areas of:

- Aquaculture projects are concerned with the commercialization of paddlefish, nutrition and diet formulation for freshwater crustaceans, and developing

technologies for raising largemouth bass. • Doe and kid production evaluation for meat goats is a relatively new research and extension thrust for KSU. • Pawpaw and primocane blackberries are under development as niche crops in Kentucky. • The control of Nosema diseases is being researched as a potential cause of colony collapse disorder (CCD) of honey bees.

2. Brief description of the target audience

- Kentucky farmer operations with agents recruiting and selecting producers for participation in Grain Academy, Master Cattlemen, Innovative Tobacco Grower Program, Horse College, and Master Grazer Programs
- Farm owners, operators, absentee land owners with a variety of backgrounds and experiences
- Farmers' market members and potential members
- Community and farm leaders
- Consumers
- Extension agents

3. How was eXtension used?

Resource to contact colleagues, webinars, access to secondary data

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1546790	8620813	47503	266623

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

Patent Applications Submitted

Year: 2013
 Actual: 2

Patents listed

Chappell, J. Systems and methods for the production of linear and branched-chain hydrocarbons. #20130198896

Stills, Jr.; Harold F.; (Horohov; David W.; Page; Allen E. Method and System for Diagnosis of Lawsonia Intracellularis #20130164765

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	15	117	132

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Graduate research assistants engaged in research
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Published research journal articles

Year	Actual
2013	127

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of families who gained knowledge about eating healthy foods
2	Number of families that reported eating more healthy foods
3	Number of families that reported supplementing their diets with healthy foods that they produced/preserved (utilizing community/backyard gardens, fishing, hunting, etc.)
4	Number of individuals adopting one or more recommended practices to increase access to food or make it more affordable
5	Access to new management strategies for reducing economic impact of endophyte-infected fescue in livestock production
6	Availability of organic production methods for improved disease control

Outcome #1

1. Outcome Measures

Number of families who gained knowledge about eating healthy foods

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	177041

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The obesity epidemic threatens the quality and years of life of Kentuckians. The obesity rate in Kentucky increased 90 percent over the last 15 years. Increased consumption of unhealthy food is one of the factors. Families need healthy options and advice about ways to prepare fruits and vegetables.

What has been done

The Plate It Up! Kentucky Proud program is a joint program with the University of Kentucky Cooperative Extension Service and the Kentucky Department of Agriculture that targets consumers to buy local and increase their fruit and vegetable intake with the goal of creating a healthy lifestyle. Kentucky State University also worked with migrant farmers to educate them on how to grow their own food in the United States.

Results

After participating in the Plate It Up program, participants indicated aspirations to consume healthier foods. Over 8,000 noted plans to consume more fruits and vegetables.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants

212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Number of families that reported eating more healthy foods

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	61304

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The obesity epidemic threatens the quality and years of life of Kentuckians. The obesity rate in Kentucky increased 90 percent over the last 15 years. Increased consumption of unhealthy food is one of the factors. Families need healthy options and advice about ways to prepare fruits and vegetables.

What has been done

The Plate It Up! Kentucky Proud program is a joint program with the University of Kentucky Cooperative Extension Service and the Kentucky Department of Agriculture that targets

consumers to buy local and increase their fruit and vegetable intake with the goal of creating a healthy lifestyle.

Results

As a result of the program, nearly 1000 participants reported increasing their consumption of fruits and vegetables. Over 600 reported consuming 4-6 servings of fruits and 4-6 servings of vegetables after participating in the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
401	Structures, Facilities, and General Purpose Farm Supplies
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

Number of families that reported supplementing their diets with healthy foods that they produced/preserved (utilizing community/backyard gardens, fishing, hunting, etc.)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	28890

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With so many Kentuckians having limited access to fresh healthy food, there has been a movement to educate clientele on ways to grow their own food. There are significant food deserts in the state. Extension is making an effort to assist in this matter.

What has been done

Programs on Gardening in Small Spaces and raised bed gardening has gained popularity in Kentucky. the Master Gardener program remains prominent. KSU worked with USDA Natural Resources and Conservation Service to conduct classes on organic gardening, traditional gardening, high tunnels, and watering for youth and adults in an urban/suburban community.

Results

Multiple counties provide over 1500 hours of volunteer service in the name of UK Extension yearly. According to IndependentSector.org, the cost per hour of volunteer time is \$21.79. This equates to more than \$32,685.00 of value to Extension. KSU in collaboration with UK reintroduced the Master Gardner Program and graduated 33 leaders to support the growing interest in urban gardening and horticulture in the Louisville Metro area. Students in Trigg County promoted the importance of good nutrition by using a breakfast cart that highlighted the importance of eating breakfast. The percentage of students eating breakfast increased from 18% to 57%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
311	Animal Diseases
604	Marketing and Distribution Practices

Outcome #4

1. Outcome Measures

Number of individuals adopting one or more recommended practices to increase access to food or make it more affordable

2. Associated Institution Types

- 1862 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	37264

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With so many Kentuckians having limited access to fresh healthy food, there has been a movement to educate clientele on ways to grow their own food. There are significant food deserts in the state. Extension is making an effort to assist in this matter.

What has been done

Production systems for alternative and organically grown fruit and vegetable crops were developed for small local growers in Kentucky. A 10-county area of the University of Kentucky Cooperative Extension Service, in partnership with Louisville Farm to Table and the Kentucky Department of Agriculture, planned a workshop that allowed buyers and school food services to present their need for large volumes of produce, livestock and specialty grain.

Results

KSU demonstrated the economic potential of growing primocane-fruited blackberries for sale at farmers markets, CSAs, and restaurants over an extended harvest season for limited resource farmers. Small farmers now know which varieties to plant and how to grow them, making locally grown fresh fruit high in antioxidants available to consumers. Findings from the multi county farm to table initiative revealed All school food service directors attending said they were interested in buying local food and 80% made a connection with a local food producer. Approximately 89% of hospitality industry representatives indicated interest in purchasing locally grown products and 86% connected with a buyer.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems
604	Marketing and Distribution Practices

Outcome #5

1. Outcome Measures

Access to new management strategies for reducing economic impact of endophyte-infected fescue in livestock production

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Tall fescue, and its associated endophytic fungi, is a common cool season grass in the eastern

and northwest regions of the United States. Endophyte-infected fescue is the primary forage consumed, either through grazing or incorporation into total mixed rations, by cattle in these regions. The nutritive quality of fescue is relatively high; however, the nutritional benefits are offset by the endophyte-derived alkaloids which severely reduce animal performance and productivity. Although numerous studies have documented the correlation between consumption of endophyte-infected fescue and decreased milk production in various species, including cattle, there is a paucity of research directed at understanding the mechanisms by which ergot alkaloids affect milk production. Understanding of these mechanisms is needed to develop solutions for mitigating the impact of fescue-derived alkaloids on mammary gland development and function in heifers and pre/post-partum dairy cows.

What has been done

Studies were conducted to evaluate the effects of feeding mature dairy cows a diet containing endophyte-infected fescue on milk production during the two months prior to calving and the first week after calving. The impact of fescue-derived alkaloids on mammary development and function was studied by supplying fescue seed as a source of alkaloids to dairy cattle and examining mammary tissue for changes in cellularity and morphology by immunohistochemical analysis. Additionally, expression of genes involved in mammary gland proliferation and differentiation were measured. Differential expression of candidate genes were identified with a bovine mammary gland microarray and quantified by quantitative real-time PCR (qRT-PCR).

Results

Results of the lactating cow project demonstrate that endophyte-infected fescue consumption decreases milk production through mechanisms that are independent of mammary development and that following cessation of alkaloid consumption milk production is enhanced above that of cows consuming endophyte-free fescue. Analysis of epithelial cell proliferation and novel mammary stem cell markers, support the observation that fescue toxicosis does not significantly impact mammary growth and development at the times evaluated. The deleterious effect of endophyte-infected fescue on milk production is not mediated through retardation of mammary tissue development. This information has immediate impact in terms of providing producers with a management tool for determining critical times when exposure of cows to endophyte-infected fescue must be limited in order to avoid or minimize the deleterious effects of endophyte-derived alkaloids on milk production. Moreover, results indicate that controlled administration of ergot alkaloids may be useful as a management tool for increasing milk production. By incorporating this new information into dairy herd management programs, farmers can help off-set the \$600 million in estimated annual losses in livestock production caused by endophyte-infected fescue consumption.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Availability of organic production methods for improved disease control

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Cucurbits have developed into a good cash crop for many Kentucky conventional vegetable growers with about 2,773 acres planted in the state in 2007. Cucurbits such as muskmelon, seedless watermelons, and slicing cucumbers offer high net returns per acre, and have high consumer demand. Based on several years of failed production efforts on our research farm due to bacterial wilt, and through discussions with Kentucky organic growers, it is clear that cucurbits are one of the most - if not the most - difficult crops to grow organically in the state. Considering that cucurbits are a critical crop for many of the direct marketing outlets typically used by organic growers (community supported agriculture programs (CSAs), farmers markets, restaurants), developing a production system that will provide efficacious control of cucumber beetles is essential.

What has been done

Four experimental treatments comparing the use of extended duration rowcovers with alternative pollinators (bumble bees) were evaluated. The focus was on developing a system that can exclude cucumber beetles but still have effective pollination. All treatments utilized a raised-bed plasticulture system and drip irrigation. Research was conducted on muskmelon, but since pollination in cucurbits is completely insect-dependent, results from this study should be applicable to other cucurbit species. All production system inputs were uniformly applied to all treatments in accordance with organic certification guidelines. Melons were harvested and assessed for appearance and visible defects, and graded according to current USDA commercial standards. Striped and spotted cucumber beetle populations were closely monitored using yellow sticky traps in conjunction with pheromone attractant pouches. Bacterial wilt was positively identified using current molecular techniques such as real-time PCR confirmation. All yields were multiplied by current average wholesale market prices to determine gross returns from each system. Input and production practice costs were recorded for a partial budget analysis

comparing each production system.

Results

During this project an organic production system was developed capable of reducing the incidence of bacterial wilt in cucurbits, which is a major impediment to organic production in the eastern United States. This system utilizes spun-bonded row covers placed over the crop to exclude the insect vectors of the disease that feed on the crop and transmit the bacteria into the plants. The system that was demonstrated to have good potential for farmers was the use of row covers for the entire growing season, with a two-week window where they were removed to allow pollination. Organic insecticides are needed during the two-week window, but the use of the extended duration row cover allows the insecticide sprays to be eliminated for the remaining part of the season. This technique allowed for a positive economic return on the melons produced during the project. This system is scalable and can be used throughout the growing season. Considering the difficulty that bacterial wilt poses for organic growers, the adoption of this technique will greatly improve the economic feasibility of organic cucurbit crop production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

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
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See outcomes/results

Key Items of Evaluation

Surveys, follow up interviews, observations

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Agricultural and Environmental Quality

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
101	Appraisal of Soil Resources	0%	0%	17%	0%
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	26%	0%
104	Protect Soil from Harmful Effects of Natural Elements	0%	0%	2%	0%
112	Watershed Protection and Management	2%	100%	13%	10%
123	Management and Sustainability of Forest Resources	22%	0%	0%	10%
131	Alternative Uses of Land	0%	0%	2%	10%
133	Pollution Prevention and Mitigation	0%	0%	11%	35%
205	Plant Management Systems	20%	0%	12%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	0%	10%
213	Weeds Affecting Plants	0%	0%	7%	0%
215	Biological Control of Pests Affecting Plants	0%	0%	0%	25%
302	Nutrient Utilization in Animals	0%	0%	3%	0%
403	Waste Disposal, Recycling, and Reuse	5%	0%	7%	0%
605	Natural Resource and Environmental Economics	51%	0%	0%	0%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	35.0	1.0	10.0	8.5
Actual Paid Professional	27.0	2.0	32.5	8.0
Actual Volunteer	35771.0	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
449717	46627	607546	297436
1862 Matching	1890 Matching	1862 Matching	1890 Matching
423455	81303	3559213	70070
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	2015262	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The University of Kentucky and Kentucky State University are engaged in a wide range of programs geared towards achieving greater harmony between agriculture, people, and the environment. All components of the research and extension focus on the broader goal of practicing agricultural and related disciplines in a manner consistent with improving sustainability of resources and protecting ecosystem integrity. Program examples include:

- Master Gardener Program consisting of 12-15 three-hour sessions related to gardening, resource management, botany, soils, pesticides and pesticide safety
- Master Logger program consisting of three one-day sessions focusing on best management practices, safety, laws and regulations
- Integrated Pest Management programs including programs aimed at homeowner application of pesticides and fertilizers.
- Woodlot owner education program focusing on best management practices, harvesting, contracts, wood products and alternative forest products.
- Water quality, Water Pioneer, daycamps, and forestry camp programs aimed at developing a better understanding of stewardship between youth and the environment.
- Gardendata.org
- Organic Agricultural Programs

Agricultural and environmental research at UK included:

- riparian management techniques for improving water quality in karst dominated landscapes
- new production systems to improve animal agriculture sustainability
- fundamental investigations of biodiversity and community structure in agricultural and forest ecosystems
- methods for dealing with insect pests of urban landscapes
- assessing the environmental benefits of organic farming
- investigation of physical and chemical processes in soils that impact productivity and soil quality

KSU Extension Programs will continue to support efforts related to policies to improve environmental quality. KSU research projects focusing on improving environmental quality include: soil conditioners and constructed wetlands for water quality improvement, examining biological control methods for pest control in blackberries, and weed control options in organic sweet corn and potato production are being examined.

2. Brief description of the target audience

- General public
- Community volunteers advanced in horticulture instruction and willing to give back to the community
- Individual commercial loggers in Kentucky and those out of state wishing to do business in Kentucky
- Woodlot owners
- Farm owners and operators
- Homeowners

3. How was eXtension used?

Faculty and staff participating in webinars, accessing publications, involved in communities of practice

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	260338	500282	111904	214407

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	1	12	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Graduate student research assistants
 Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Published research journal articles

Year	Actual
2013	16

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers adopting resource management technologies (IRM, IPM, soil testing, soil fertility management) as a result of Extension programs
2	Number of individuals adopting practices (recommended by Extension) that ensure safe water
3	Number of individuals utilizing forest management practices recommended by Extension
4	Number of individuals who made a lifestyle change for the purpose of improving water and/or natural resources (due to recommendations from Extension)

Outcome #1

1. Outcome Measures

Number of producers adopting resource management technologies (IRM, IPM, soil testing, soil fertility management) as a result of Extension programs

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	21418

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With the state of the economy, many of Extension's clientele are looking for ways to increase income. Kentucky Extension has implemented programs aimed to encourage producers and local businesses to adopt positive practices that will hopefully increase financial stability.

What has been done

KSU worked with both Eastern Kentucky University and Alltech Biotechnology Center (a private company) to produce algae (*Chlorella* sp) and extract the lipids to formulate new diets for channel catfish. KSU determined the proper stocking rate, browse utilization, and change in browse over time in a fescue pasture with goats. The UK Dept of Forestry provides a technology for the secondary wood industry to create templates for designs and are involved early in the product design tooling development process in a way that will significantly reduce error, waste, and set-up time, thus providing a huge advantage for our Kentucky manufacturers. Some Kentucky counties have seen increase usage of the soil testing program.

Results

Preliminary results from KSU's project indicated that algae meal was readily accepted by channel catfish, performed efficiently, and will likely be cost effective when produced at commercial scales. Recommended stocking rates and information on how goats can be used to control browse plants in pastures were provided to producers. The UK templates that are provided for the Secondary Wood Manufacturers in Kentucky represents 17 different products and an estimated \$65,000 earned or saved. Soil testing has doubled in Russell County, from 400-500 to over 800 samples, thus increasing crop yields and saving money on fertilizer and lime.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation

Outcome #2

1. Outcome Measures

Number of individuals adopting practices (recommended by Extension) that ensure safe water

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	15534

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Several rural and urban Kentucky communities are facing issues related to water quantity, conservation, and quality. Across the state, there are existing challenges of protecting valuable natural resources from growth and pollution. Now more than ever, there is a great need for public education involving water education, adequate food production systems, and community resources.

What has been done

Through collaboration between the Plant and Soil Sciences Department at the University of Kentucky and the Kentucky Geological Survey, a unique Well Education webpage that features down-well camera videos of drinking water was developed. Workshops on waste water treatment systems and storm water education were offered. Specialists from the University of Kentucky's departments of Biosystems and Agricultural Engineering and Agriculture Extension Programs developed a tool for landowners to use to develop their own nutrient management plans.

Results

Thirty-one workshops have been held in 29 counties to over 250 participants. Of the surveyed participants, 97% indicated they would conserve water use, 93% indicated they would adopt landscaping best management practices, 96% indicated they would educate others about

stormwater issues, and 91% indicated they would install a rain garden. The tool developed by Ag engineering specialist resulted in a document that was presented to the Kentucky Agriculture Water Quality Authority and was adopted as law as part of the Kentucky Agriculture Water Quality Plan. Kentucky farmers can now utilize this document to develop their own nutrient management plan at no cost.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation

Outcome #3

1. Outcome Measures

Number of individuals utilizing forest management practices recommended by Extension

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2511

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The public visibility of the forestry and forest products industries is low in Kentucky, even though one out of every nine manufacturing workers is employed by a forest products company. The total economic impact of the Kentucky Forestry Sector is documented to be over \$9 billion and supplies a total of more than 50,000 jobs. There continues to be a need to educate the public on the value of forestry in the state and proper methods to sustain these resources. In addition woodland owners own 75% of the state's forestland.

What has been done

Literature is provided via the Kentucky Woodlands Magazine and the Kentucky Woodlands E-

News electronic newsletter. Educational programs, such as "Win with Wood" helps to acquaint/familiarize Kentucky youth with forestry/natural resources industries and potential career opportunities. Videos have been created and a sawmill organization was formed.

Results

Participating youth at the Win with Wood event demonstrated through that they had acquired forestry and wood industries skills, positive natural resource awareness as well as becoming aware of career opportunities. One member of the sawmill organization has grown from one portable bandmill to an established business with two additional employees and two dehumidification dry kilns. He advertises on the internet as well as in local publications and is open for retail sales seven days a week. Some weekends he sells as much as \$10,000 worth of kiln-dried lumber to homeowners and wood craftsmen.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land

Outcome #4

1. Outcome Measures

Number of individuals who made a lifestyle change for the purpose of improving water and/or natural resources (due to recommendations from Extension)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	5259

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Environmental stewardship and natural resource conservation are important to the overall well-being of individuals, families and communities. However, education in this area is a challenge due

to the complexity of the issues and the lack of awareness about how even small individual behaviors impact the environment.

What has been done

KSU assessed water quality and disease problems at a commercial catfish farm. KSU also implemented biofilters to reduce the impact of pesticides and heavy metals and provided farmers with several soil management techniques for increasing farm productivity and profitability. Oldham County Extension partnered with the Watershed Coordinator to present two educational programs to Oldham County Extension Master Gardeners and 4-H Bud Club (Natural Resources) members.

Results

Results from the biofilter study for farmers showed that soil practices successfully reduced runoff water, sediment loss, and pesticide mobility at the edge of the field and provided acceptable yield. Following the educational programs in Oldham County, 13 Master Gardeners, 30 4-H youth and eight adult volunteers planted native trees, shrubs, grasses and flowers at two impaired sites along Curry's Fork.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Change in knowledge, skills and aspirations; change in practices

Key Items of Evaluation

Pre-post surveys, followup interviews, secondary data sources

V(A). Planned Program (Summary)

Program # 7

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	9%	0%	48%	0%
703	Nutrition Education and Behavior	78%	6%	0%	10%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	94%	0%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	13%	0%	52%	90%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.5	2.0	1.0
Actual Paid Professional	12.0	0.5	5.5	4.0
Actual Volunteer	5054.0	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
269830	10902	361429	142837
1862 Matching	1890 Matching	1862 Matching	1890 Matching
254073	9750	1020617	56761
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1495824	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Training and certification workshops will be conducted for home-based microprocessors
- Research was conducted on the identification of best practices to reduce contamination of food pathogens and toxins in pre- and post- harvest environments
- Research programs also included better detection methods for monitoring food risks and analysis of the impacts of food safety incidences on the food supply chain
- Educational programs will be targeted toward parents and others who prepare food in the home
- Educational programs will be directed toward young children and teens on basic cleanliness such as hand washing

2. Brief description of the target audience

- extension agents
- food producers
- food processors
- parents
- volunteer leaders
- youth and children
- consumers

3. How was eXtension used?

Webinars attended; publications/literature

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	152405	1001031	32029	205031

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	5	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals who experienced a change in knowledge, opinions, skills or aspirations regarding the safe storage, handling, or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)
2	Number of individuals who implemented recommended practices for the safe storage, handling or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)
3	Total number of individuals reached through Extension programming related to health and safety

Outcome #1

1. Outcome Measures

Number of individuals who experienced a change in knowledge, opinions, skills or aspirations regarding the safe storage, handling, or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	63512

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to the economic downturn, there has been an increase in home gardening, freezing, food preservation and using other methods for long term storage. Due to this there has been a surge in requests for information about home food preservation, home gardening and stretching the family's resources. Unfortunately, some are using unsafe recipes and processes that could endanger the lives of family and friends.

What has been done

To address issues related to home food preservation and how to stretch the food dollar, County Family and Consumer Sciences Extension Agents have conducted Food Preservation workshops. These workshops focused on how to select fresh fruits and vegetables, picking produce at its peak, preserving food at its peak (for best quality and nutrition), cleaning and preparing produce to be preserved, basics of boil water canning, basics of freezing, equipment and methods that are not recommended or safe.

Results

A number of Kentucky counties reported that clientele increased their knowledge about how to preserve food; 100% learned the difference between processing low acid and high acid foods; and 100% learned about using the proper equipment during processing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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

Outcome #2

1. Outcome Measures

Number of individuals who implemented recommended practices for the safe storage, handling or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	42331

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to the economic downturn, there has been an increase in home gardening, freezing, food preservation and using other methods for long term storage. Due to this there has been a surge in requests for information about home food preservation as well as helping small businesses implement practices that would increase profits.

What has been done

KSU facilitated an agreement regarding food handling and licensing requirements between the state health department and a local vegetable shipper. Kentucky's Mobile Processing Unit for small livestock species (MPU) is also a unique undertaking that was created to allow independent Kentucky farmers the opportunity to raise, process and market several types of animals for human consumption.

Results

KSU's recommendations saved local vegetable shipping company approximately \$80,000 and avoided cost-prohibitive upgrades of equipment and handling costs. Also, The most recent annual processing data from the mobile processing unit indicates that six hundred pounds of shrimp and 1750 animals were processed through the MPU. Processing cost to the farmers using the MPU are approximately 80% less than at the two USDA plants in the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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

Outcome #3

1. Outcome Measures

Total number of individuals reached through Extension programming related to health and safety

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	186511

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With Kentuckians getting sick from food poisoning each year, there is a need to educate the public on the proper handling of foods. Teaching citizens the basics of food safety could help prevent some illness and health issues.

What has been done

Seminars on growing and preserving foods have been conducted throughout the state. Champion Food Volunteer program materials were developed.

Results

Of the more than 186,000 individuals reached through Extension programs, 72% reported gaining knowledge of eating more healthy foods. Over 30% reported eating healthier foods.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Increase in knowledge of preparing and storing healthy foods

Key Items of Evaluation

Surveys, interviews, secondary data

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Climate Change

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
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	33%	0%
123	Management and Sustainability of Forest Resources	0%	0%	33%	100%
141	Air Resource Protection and Management	0%	0%	10%	0%
403	Waste Disposal, Recycling, and Reuse	0%	0%	17%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	7%	0%
604	Marketing and Distribution Practices	100%	0%	0%	0%
	Total	100%	0%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.0	1.0
Actual Paid Professional	1.0	0.0	3.2	0.5
Actual Volunteer	55.0	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
0	0	131146	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	385387	22738
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	73110	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Emergency preparedness plans will be implemented with be prepared for all Extension offices
- The Agricultural Weather Center will supply information on temperature and moisture conditions to guide agricultural operations
- Economists will conduct educational programs for Extension agents and agricultural producers on ways to reduce risks
- Research on the impact of climate change on the ecology of plant pests and diseases was conducted
- Creation of new technologies and best management practices for mitigating greenhouse gas emissions was explored
- KSU will offer a floating science lab to show students the impact of climate and human use on aquatic systems.

2. Brief description of the target audience

- extension agents
- extension office staff
- agricultural producers
- community leaders
- general public

3. How was eXtension used?

Webinars, available literature

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	341	3258	232	2172

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

Patent Applications Submitted

Year: 2013
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	10	10

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles.

Year	Actual
2013	9

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to the impact of public policies on agriculture and the environment
2	Number of individuals reporting an increase in knowledge, opinions, skills or aspirations related to climate change

Outcome #1

1. Outcome Measures

Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to the impact of public policies on agriculture and the environment

2. Associated Institution Types

- 1862 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	15372

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With the recent changes, many Kentucky residents are not aware of the current ag and environmental policies that could impact their farming operations. Extension must meet the challenge of providing relevant and timely information.

What has been done

UK department of Agricultural Economics has provided training for agricultural lenders across the state. UK Income Tax Seminars were offered at seventeen locations and were attended by 1,821 participants. The Kentucky FarmStart program provides information that can impact beginning farmers.

Results

Producers attending the meetings hosted by Ag Economics specialists indicated that they have a better understanding of how crop insurance interacts with marketing. They have also indicated that they feel more comfortable selling crops during the growing season than before. They also feel they are making better tax decisions. For the Kentucky Farm Start program, 85% of survey respondents reported confidence in their ability to manage their farm business as a result of participation in the course. Statistically significant knowledge increases were reported in all 12 knowledge areas accessed, including: business goals and missions, legal considerations, financial documents, farm business plans, crop production, livestock production, government programs, soils marketing, selecting a new farm enterprise, resource evaluation, and leadership development.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
141	Air Resource Protection and Management
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Number of individuals reporting an increase in knowledge, opinions, skills or aspirations related to climate change

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	7770

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Climate change continues to spark much debate. It is important that we understand the cause and potential effects on our environment and agriculture so that we can prepare and adjust for these changes.

What has been done

An online survey was created to assess perceptions of climate change.

Results

A total of 98% were in agreement that climate change is real, it is serious and it is a result of human activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
141	Air Resource Protection and Management
604	Marketing and Distribution Practices

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Increase in knowledge & awareness

Key Items of Evaluation

survey

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Sustainable Energy

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
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	13%	0%
204	Plant Product Quality and Utility (Preharvest)	15%	0%	13%	100%
205	Plant Management Systems	0%	0%	17%	0%
206	Basic Plant Biology	0%	0%	22%	0%
402	Engineering Systems and Equipment	85%	0%	0%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	28%	0%
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%	0%	7%	0%
	Total	100%	0%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	5.4	0.0	5.0	1.0
Actual Paid Professional	1.0	0.0	15.7	1.0
Actual Volunteer	475.0	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
89943	0	435126	32640
1862 Matching	1890 Matching	1862 Matching	1890 Matching
84691	0	2110913	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1069739	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Sustainable energy research continues to be an important component of plant science and biosystems engineering research programs at the University of Kentucky. Research in energy science included both basic studies in plant biology for developing improved feedstocks and applied, pilot-scale demonstrations of bio-based production processes. The production and utilization of switchgrass as a feedstock continues to be an area of emphasis for our research and extension programs. Another important area of research for UK's programs is the improvement of oilseeds for energy applications and other bio-based chemical development.

2. Brief description of the target audience

- producers
- extension agents
- electric company representatives
- other researchers and extension specialists

3. How was eXtension used?

Webinars, participation in communities of practice, online resources

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4510	3274	10005	7289

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	4	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2013	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals who reported an increase in knowledge of sustainable energy as a result of Extension related programming
2	Number of individuals who incorporated practices suggested by Extension that promote sustainable energy (i.e., applied water conservation policies, participating in energy audits, installed energy efficient equipment, etc.)
3	Number of producers who reported an increase in their production of bioenergy crops (corn, soybeans, switchgrass, etc.)
4	Number of youth reporting an increase in knowledge of energy conservation practices
5	Availability of systems for sustainable biomass feedstock production

Outcome #1

1. Outcome Measures

Number of individuals who reported an increase in knowledge of sustainable energy as a result of Extension related programming

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	3569

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Energy costs and conservation issues are of major importance to agriculture producers. With the increased input costs, there has been increased interest in ways to obtain and utilize alternative fuel and renewable sources. However, the general public has limited knowledge of how to learn more about the existing opportunities.

What has been done

Extension is providing seminars to educate the public on sustainable energy. The UK Ag & Biosystems Engineering department has conducted energy audits for producers.

Results

Extension has assisted producers in securing grant funds from USDA and state and local ag development funds to implement a bio-mass boiler projects that would heat greenhouses and packing sheds. The UK Biosystems and Agricultural Engineering Department was asked to help by completing an energy audit. Farmers are proposing several potential energy efficiency improvements. Four farms proposed solar or other renewable energy projects. Adding insulation, changing from incandescent to fluorescent lighting, heat recovery systems, and using preheated ventilation air from the attic were improvements that farmers have become more knowledgeable and are taking into consideration.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #2

1. Outcome Measures

Number of individuals who incorporated practices suggested by Extension that promote sustainable energy (i.e., applied water conservation policies, participating in energy audits, installed energy efficient equipment, etc.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2561

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Energy costs and conservation issues are of major importance to agriculture producers. With the increased input costs, there has been increased interest in ways to obtain and utilize alternative fuel and renewable sources. However, the general public has limited knowledge of how to learn more about the existing opportunities.

What has been done

Kentucky grain and livestock producers use considerable amounts of electrical energy to operate lights, ventilation fans, grain or feed conveyors, grain dryers, and feed preparation equipment. Electrical energy consumption for large farms can amount to several thousand dollars in utility bills each month. Renewable energy systems have been installed to produce "green power" that can be used for these farming operations.

Results

Producers used the energy assessments to apply for cost share funds to install renewable energy systems on their farms. The annual value of energy generated on the farms was \$116,560 per year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #3

1. Outcome Measures

Number of producers who reported an increase in their production of bioenergy crops (corn, soybeans, switchgrass, etc.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2072

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The production and utilization of biomass energy, such as through switchgrass, continues to be explored due to a need to acquire additional sources of energy.

What has been done

KSU began gasifying farm residues such as sweet sorghum bagasse, pawpaw and blackberry prunings, and dried sunflower stalks, to generate electricity. The process could allow small farmers to use agricultural waste products to make their own electricity, promoting farm resilience and energy independence. Faculty and students in the Chemical and Materials Engineering program worked with a UK 4-H Agent for SET to establish a hands-on bio-fuel research opportunity for local high school students. A survey was conducted by the Bracken Ag Advancement Council and the Extension Service to determine the level of producer interest in a facility to further explore the use of plant materials as a source of energy.

Results

The process could allow small farmers to use agricultural waste products to make their own electricity, promoting farm resilience and energy independence. In Bracken County, indications from the survey show a very positive interest in utilizing marginal land and supplying a domestically produced renewable fuel. A steering committee with members from 5 counties is now determining the next step in continuing the study to further evaluate the science, engineering, and financial specifics of the project. Hopkins County is also exploring opportunities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #4

1. Outcome Measures

Number of youth reporting an increase in knowledge of energy conservation practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	14428

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth often lack exposure to nature and their role in promoting a sustainable environment. Non-formal programs provide children with a unique opportunity to experience substantial outdoor immersion and often influence affective development. These benefits suggest that an expansion of the depth and scope of non-formal outdoor programs is necessary to achieve the long-term goal of an environmentally literate population.

What has been done

Faculty and students in the Chemical and Materials Engineering program worked with a UK 4-H Agent for SET to establish a hands-on bio-fuel research opportunity for local high school students. In a joint effort to spark interest and increase science proficiency the Bracken County 4-H program and Bracken County Middle School conducted an intensive week long program called "The Power of Wind" utilizing the National Science Day and National 4-H Council Wind Energy Curricula.

Results

Throughout the program in Bracken County, over 100 students learned through hands on experiments how wind energy can be harvested to create electricity. Students then applied what they had learned by working in teams to build a wind turbine that would produce as much power as possible. Each team was allowed to test the electrical output, and then redesign their turbine to increase the amount of electricity they created. Almost every team increased their electrical output during their second test by utilizing the skills and knowledge they had learned from the lessons and their first wind test. After the culminating event, students wrote an essay about what they learned in the program. In Laurel County, pre and posttest evaluations from students, teachers and volunteers demonstrated that 90% of the students attending an environmental day camp reported an increase in knowledge of environmental awareness, 60% of students reported an increase in the practice of environmentally conscious procedures when evaluated one month

later.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #5

1. Outcome Measures

Availability of systems for sustainable biomass feedstock production

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In recent years, production of perennial biomass crops has been proposed as an economic opportunity for the use of lands that are only marginally acceptable for other agricultural uses. Coupling available biomass markets with crops that require few inputs is a key component to developing a sustainable bioenergy feedstock system. Warm-season forages, such as switchgrass, have been proposed for biomass production due to their potential to serve as both a forage crop and biomass feedstock. Once established, switchgrass grows well on marginal land, but it takes several years to produce a significant crop. Further evaluation is needed on the potential for production on marginal land as well as its utility in biomass energy production.

What has been done

A five-year pilot study on the biomass potential of switchgrass in Kentucky was conducted with 20 farmers in cooperation with the East Kentucky Power Cooperative . Investigators tested a variety of methods for establishing switchgrass crops, evaluated the environmental benefits of the crop, and the timing of harvesting for maximum yield and utility.

Results

While a number of factors limit the biomass market, the project successfully demonstrated the utility of switchgrass as a dual-use crop on lands that are not optimal for traditional crop

production or grazing. Researchers found that switchgrass seeds soaked in water for 6 days prior to planting had substantially greater germination and establishment rates than non-treated seeds. This is significant because it is easy for farmers to implement with little or no capital investment, overcoming one of the primary production barriers to switchgrass adoption. Early cutting of switchgrass for hay production was shown to not cause a significant yield loss when harvested again in late fall for biomass. Furthermore, inputs have been shown to be minimal, with established stands producing good quality forage even during the 2012 drought. A decision support tool for farmers weighing the economic costs and benefits of establishing switchgrass was developed in conjunction with the pilot project. Of the farmers who took part in the pilot testing, half have maintained their switchgrass stands for continued use as hay or for grazing and are poised to take advantage of biomass energy opportunities should a market develop.

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
511	New and Improved Non-Food Products and Processes
512	Quality Maintenance in Storing and Marketing Non-Food Products

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Gain in knowledge, awareness increased

Key Items of Evaluation

Pre-post surveys, follow interviews, informal discussions, secondary data sources

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Childhood Obesity

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
703	Nutrition Education and Behavior	32%	50%	50%	0%
724	Healthy Lifestyle	68%	50%	50%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	30.0	1.0	0.5	0.5
Actual Paid Professional	17.0	1.0	1.1	0.0
Actual Volunteer	13535.0	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
269830	27291	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
254073	50895	87308	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

- conducting educational programs for children
- training extension agents

- developing educational materials
- conducting programs with parents
- evaluating the impact of the Expanded Food and Nutrition Education Program

2. Brief description of the target audience

- children
- youth
- extension agents
- teachers
- parents

3. How was eXtension used?

Webinars, publications, communities of practice

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	174359	530657	169785	509847

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles.

2013 Kentucky State University and University of Kentucky Combined Research and Extension Annual Report of Accomplishments and Results

Year	Actual
2013	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Total number of children and youth reached through Extension programming related to eating healthy foods
2	Total number of children and youth who gained knowledge about eating more healthy foods
3	Total number of children and youth who reported eating more healthy foods
4	Number of environmental changes implemented to support physical activity (e.g., walking trails opened, bike paths built)

Outcome #1

1. Outcome Measures

Total number of children and youth reached through Extension programming related to eating healthy foods

2. Associated Institution Types

- 1862 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	186511

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Nutrition, health, and food safety are important aspects to everyday lives of all age groups. The earlier nutrition habits are established, the longer they will stay with an individual. Several Extension Nutrition programs were offered this past year to youth across the state.

What has been done

Nutrition and food preparation workshops were conducted. Physical Activity School Club lesson plans were presented to 4-H school club members. Extension worked with Health Departments, Family Resource Centers, and the Medical Centers to provide youth health fairs.

Results

Over 6,000 youth gained access to Extension programs related to healthy eating, exercise, and well-being

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Total number of children and youth who gained knowledge about eating more healthy foods

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	135044

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the Centers for Disease Control (CDC), 33% of adolescents in Kentucky are overweight or obese. Not surprisingly, 79% of Kentucky's young people do not meet the recommended guidelines for physical activity.

What has been done

KSU EFNEP effectively reached over 1,900 children and adults. KSU studied 376 first-year students attending college to assess metabolic syndrome (MetS) factors.

Results

Participants of the KSU EFNEP program increased their intake of healthy grains, fruits, and vegetables and saw a reduction in their use of unhealthy oils. Findings from the MetS study revealed the need for additional screening of college students so that interventions can be targeted to decrease the risk of MetS and an early onset of coronary heart disease. In various UK and KSU programs, youth learned proper hand washing, food and kitchen safety, and accurate measuring skills as well as freezing and canning skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Total number of children and youth who reported eating more healthy foods

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	69784

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A significant number of youth in Kentucky are overweight. A primary factor is due to an excessive intake of processed foods, low physical activity and an inadequate amount of healthy foods.

What has been done

KSU EFNEP programs effectively reached over 1,900 children and adults. University of Kentucky agents administered the "Professor Popcorn" nutrition education program. The Small Steps to Health and Wealth Online Challenge was implemented to encourage healthy eating.

Results

Participants in the EFNEP program increased their intake of healthy grains, fruits, and vegetables and saw a reduction in their use of unhealthy oils. Over 6,000 youth involved in the "Professor Popcorn" program indicated eating a larger variety of fruits and vegetables. Over 840 youth created a plan for healthy eating and physical activity. A total 245 Kentuckians have participated in the Small Steps to Health online program. Participants have reported consuming over 5,000 cups of fruits and vegetables during the challenge and exercised a minimum of 31,230 minutes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

Number of environmental changes implemented to support physical activity (e.g., walking trails opened, bike paths built)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	551

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the Centers for Disease Control (CDC), 33% of adolescents in Kentucky are overweight or obese. Not surprisingly, 79% of Kentucky's young people do not meet the recommended guidelines for physical activity. Physical activity was identified as a priority by the Kentucky 4-H Program. Having flexible muscles is important to prevent injury to the body during physical activity.

What has been done

Physical activity programs have been implemented. Building a positive body-image is another focus of several programs targeting youth and their families. The Get Moving Kentucky initiative remains a viable component to motivating residents to focus on their health.

Results

A total of 397 people who took part in physical activity for 30 or more minutes on five or more days of the week. Over 1000 youth reported playing for at least 60 minutes each day for four days per week. A total of 1892 youth increased their physical activity even outside of the Extension programs that helped them to take exercise seriously. Hart county youth logged over 9000 miles walking.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Knowledge gained, practice/behavior change

Key Items of Evaluation

Surveys, pre-post assessment, follow-up interviews