2009 University of Arkansas Combined Research and Extension Plan of Work

Status: Accepted
Date Accepted: 05/30/08

I. Plan Overview

1. Brief Summary about Plan Of Work

Arkansas is a rich state in terms of natural resources. Agriculture is one of the largest industries having an economic impact of over $13 billion or over one-fifth of the Gross State Product. Agriculture accounts for about one in five jobs and an annual payroll of between $8 and $9 billion. Agriculture consists of agronomic and horticultural crops, animal agriculture and forestry. Over one-half of Arkansas is in forests much of which is owned by private landowners. Food processing adds much value to the commodities grown in the state.

Arkansas is the nation's largest rice producer, one of the top producers of poultry and consistently one of the top producers of cotton and soybeans. The diversity of Arkansas agriculture includes fruits, vegetables, beef and dairy, broilers and eggs, corn, wheat, and many other crops.

The Division of Agriculture develops fundamental and applied research and extension programs to address the production, environmental and economic sustainability of Arkansas agriculture and the farms, farm families, and allied agricultural industries that depend on agriculture production and associated jobs.

Arkansas, though a major agriculture state, has issues similar to that of the remainder of the U.S. Arkansas must address issues such as rapid growth and declining populations, health and nutrition, unemployment, one-parent families, biosecurity, and many other economic and societal challendges facing families and communities. The University of Arkansas Division of Agriculture Plan of Work addresses many of these issues in both research and extension education. The Division's administration and faculty have committed time and resources from federal, state, county, city, and private sources and volunteers to address these many issues. The issues are broad and so are the planned programs. The approach is through careful planning and the involvement of partners, volunteers, constituents, and local, sttate and national leaders. Specific programs include efficient and sustainable agricultural production, protecting the natural resources, providing a safe and secure food supply, developing leaders, sustaining communities, workforce preparation, parenting skills, youth development and many more.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2009	452.8	0.0	121.7	0.0
2010	452.8	0.0	121.7	0.0
2011	452.8	0.0	121.7	0.0
2012	452.8	0.0	121.7	0.0
2013	452.8	0.0	121.7	0.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Expert Peer Review

2. Brief Explanation

Programs go through a three-tiered review process:

1. Stakeholder program identification and review
2. Administrative approval and review
3. External review

Stakeholder Program Identification and Review

Stakeholder input into program identification and review is derived from both formal and informal means for all program areas. Public comment on current and future research programs are obtained from county and community meetings, commodity and community associations, commodity check-off boards, state legislative committees and open public forums concerning specific issues. Open public meetings, field days and county and regional production meetings provide forums for stakeholder input open to under-served or under-represented individuals, groups or organizations. For extension, county councils and advisory groups meet annually at a minimum to provide input, feedback and/or review of program implementation, redirection, or newly identified needs. Members of these groups are invited to participate in programs, field days, special tours, workshops and conferences throughout the year and for the duration of the program. All reviews of research and extension programs include a stakeholder member or members of the community or industry most influenced by the program area. Open public forums are held to address specific issues of importance to the stakeholder community or industry.

Administrative Approval and Review

Identified planned program areas of research or extension activity are administratively reviewed and approved by the Director of the Agricultural Experiment Station or Cooperative Extension Service, as appropriate, within the context of the Division of Agriculture's Strategic Plan and the specific needs identified by stakeholder groups. Smith-Lever, Hatch, McIntire-Stennis, Animal Health and regional research projects are administratively reviewed and approved by the subject matter department head and the director of the Arkansas Agricultural Experiment Station. All research projects are reviewed by three outside scientists prior to submission to the respective subject matter department head and the experiment station.

External Review

Merit review is conducted as part of Division of Agriculture's on-going program review process. The reviews may be departmental or programmatic and cut across departments. Reviews are scheduled on a five to seven year cycle and conducted concurrently for research, extension and instruction. All reviews are conducted by a team of recognized outside research, extension and teaching professionals balanced to reflect the programmatic needs and diversity. All reviews include one or more stakeholders. The actual review process involves a period of self study, followed by program assessment and bench marking. The review team evaluates the programs effectiveness relative to the stated mission and goals of the department or program as well as the need of stakeholders. Following the outside review teams written evaluation, the department or program prepares a response to the review. The Division of Agriculture and University administration then meet with the department or program faculty one more time to develop a plan for implementing changes. Thereafter, annual progress is reported to Division and University administration.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

The University of Arkansas Division of Agriculture has utilized both formal and informal mechanisms for ensuring the planned program areas address areas of strategic importance to the state. Each planned program was identified based on the needs identified in a series of regional and statewide listening sessions of current and potential stakeholders representing the diversity of the population in the regions and state. Stakeholders of specific programs such as Community Health, 4-H and Youth, and commodity groups, research and extension faculty and staff also identify needed programs and in some cases provide partial funding to support. Single issue meetings are held as needed to address emerging issues to craft additional program areas if needed to promptly address the problem.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

The Southern Region SARE program is conducted as a comprehensive program incorporated into many of the Extension programs within Arkansas. Some efforts include the SARE Program Resources / Grant Funding Opportunities Training for county agents statewide, training for Small Farm Managers in Vegetable Production and Marketing, and training on Farm Support Program Availability and Access for county agents, small farm program specialists, farmers, and community leaders in South and Central Arkansas. The Meat Goat Industry Tour is planned to educate Extension agents about management information for goat producers with emphasis on forage production and parasite control and management of elite replacement operations. This group represents both majority and minority audiences and addresses a niche market. The growers generally have very small or moderate sized operations. The 13-state Southern Region 4-H programs are participating in a program working with rural audiences building youth adult partnerships to enhance their local communities. A grant helps to support this program.

Arkansas Ag Adventures is a cooperative agricultural awareness program between the Universityof Arkansas at Pine Bluff (the 1890's institution) and the University of Arkansas Division of Agriculture Cooperative Extension Service.Ag Adventures provides hands on lessons in science, math, engineering, and technology to the youth of Arkansas.This program strengthens the STEM knowledge of Arkansas youth and encourages more active participation by under-represented populations in the agricultural industry.

3. How will the planned programs describe the expected outcomes and impacts?

Planned programs have identified specific outputs and short, medium and long-term outcomes for the life of the programs. Program data will be entered by all CES faculty through a web-based data management system, and aggregated to identify the outcomes and impacts. Qualitative data and case studies will likewise be entered into the CES web-based system, in order to produce a comprehensive understanding of the program outcomes.

4. How will the planned programs result in improved program effectiveness and/or efficiency?

Planned programs have identified target audiences, program methods, and output and outcome measures prior to program initiation. The use of the planned program (input) elements and the faculty POW process allows faculty to identify which audiences, methods, curriculum, etc. county faculty have identified as the focus of their work each October (at the beginning of each fiscal year). This planning information allows specialists to better focus their program support efforts by understanding the scope of work for each planned program, allowing increased and timely responsiveness to specific county needs. Through the use of output and outcome indicators, uniform data collection methods, and the live web-based data base, process improvement is possible throughout the fiscal year due to the compilation of program specific data. Identification of best practices, innovative approaches, and emerging issues over the life of the program can both inform research and provide guidance for other educational resource investments.

IV. Stakeholder Input

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

- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of selected individuals from the general public
- Targeted invitation to traditional stakeholder groups
- Survey specifically with non-traditional individuals
- Targeted invitation to selected individuals from general public
- Survey specifically with non-traditional groups
- Use of media to announce public meetings and listening sessions
- Targeted invitation to non-traditional stakeholder groups
- Survey of the general public
- Other (County Council planning meetings.)

Brief explanation.

Stakeholder input into program identification and review is derived from both formal and informal means for all program

areas. Public comment on current and future research programs is obtained from county and community meetings, commodity and community associations, commodity check-off boards, state legislative committees and open public forums concerning specific issues. Open public meetings, field days and county and regional production meetings provide forums for stakeholder input open to under-served or under-represented individuals, groups or organizations. For extension, county councils and advisory groups meet annually at a minimum to provide input, feedback and/or review of program implementation, redirection, or newly identified needs. Members of these groups are invited to participate in programs, field days, special tours, workshops and conferences throughout the year and for the duration of the program. All reviews of research and extension programs include a stakeholder member or members of the community or industry most influenced by the program area. Open public forums are held to address specific issues of importance to the stakeholder community or industry.

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

1. Method to identify individuals and groups

- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Use Advisory Committees
- Use External Focus Groups
- Use Internal Focus Groups

Brief explanation.

Participants in the University of Arkansas Division of Agriculture stakeholder sessions were identified by Arkansas Experiment Station faculty and administrators and by asking county Extension staffs to identify individuals in their local communities who were representative of one or more of the following fifteen stakeholder categories: county services (e.g., DHS, Food Bank or Pantry); financial sector (e.g., banks, agricultural lending, investments); faith-based sector (e.g., church, youth minister); education (public, private, vocational); commercial sector (e.g., chambers of commerce, industry); health (e.g., hospital, public health, doctor); agricultural production; agricultural businesses; county Extension council; 4-H program (e.g., leader, teen, alumni, foundation); government official (e.g., county, city); Extension homemaker; natural resources (e.g., wildlife, forestry, conservation); media (e.g., radio, newspaper, television); and youth services (e.g., community center, youth organizations). In addition to these criteria, Extension staffs were also asked to identify individuals within the fifteen categories who were representative of the racial make-up of the counties, to include individuals of both genders, and to identify potential participants by their level of involvement in Division of Agriculture Extension programs in the county (i.e., low, moderate, high).

2(B). A brief statement of the process that will be 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 individuals
- Survey of the general public
- Other (Meeting with regulatory groups, state agencies, & commodity prom)
- Meeting specifically with non-traditional groups
- Meeting with traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of traditional Stakeholder groups
- Survey of selected individuals from the general public

Brief explanation

Strategic Planning

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Extension Programs
- To Set Priorities
- Other (Strategic Planning)

Brief explanation.

Division of Agriculture state specialists and research faculty members serve on advisory committees and work regularly with diverse stakeholder groups, including Farm Bureau, commodity promotion boards, state agency and regulatory groups, and program specific advisory groups to assist in the evaluation of current efforts and to provide feedback related to Arkansas' changing needs. Meetings are likewise conducted with internal stakeholders including county faculty, district administrators, and experiment station scientists to identify stakeholders and facilitate linkages between local needs and research priorities.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program #1

1. Name of the Planned Program

Families, Youth, & Communities

2. Brief summary about Planned Program

The Division of Agriculture addresses a wide variety of specific research topics dealing with quality of life and community development, including work on rural and child health care and health care in the Delta, on human migration and human capital movements in the Delta; retirement in-migration and its effects upon receiving communities; issues of aging; and recently on the human dimension of environment, natural resources, and public lands management issues. Extensive contributions have been made in the area of child care and youth development. Most of these research efforts have addressed specific quality of life or community needs.

The Arkansas 4-H program is dedicated to youth development; creating opportunities for youth that broadens skills and aspirations, nurturing the full potential of youth.

The Couple and Marriage Relationships program is an effort to provide quality, research-based education and training about dating and marriage relationships to county Extension agents who work with married couples, or those considering marriage, in their respective communities. The parenting and family relationship program has two parts: preparing adolescents and adults for parenting and providing knowledge, attitudes, and skills for those who are parents. The individual development program focuses on helping teens and adults develop the skills, attitudes, and practices for personal well-being.

Arkansas Extension offers child care providers professional development training and education. Extension addresses provider needs for continuing education through a variety of formats to meet individual needs. There are three components. The Best Care program provides ten hours of child care provider training addressing resource management, nutrition, health and safety, and child development. The second component is a child care provider training program called Best Care Connected. Best Care Connected is a five-hour child care training program offered on-line via the Internet. The last component is a child care provider training program called Guiding Children Successfully (GCS). GCS is a 20-hour self-study series that offers sensible advice and techniques for working with children.

Arkansas Extension addresses the professional development needs of school age care providers through the Arkansas 4-H Afterschool training program.

The University of Arkansas Cooperative Extension Service has defined community and economic development program efforts as "People working together to create or preserve their desired community." It is the objective of this planned program to improve the social and economic well-being of Arkansas communities through research-based educational programming that increases the knowledge, skills and participation of citizens in creating their desired future." To accomplish this objective the Cooperative Extension Service Community and Economic Development Program will be a leading, unbiased source of expertise in community and economic development." This program will include research and extension programs in economic development, small business assistance, leadership development, and public issues education.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	40%		40%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	5%		5%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%		5%	
806	Youth Development	50%		50%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

There are 680,369 youth under age 18 living in 371,331 households. Over 20 percent of Arkansas' young people are living in poverty. Currently, 167,902 children live in a single-parent family and 62,167 children live in a household with other relatives. There are 273,182 children with both parents in the workforce, 150,000 children with one parent in the workforce and 20,075 children with neither parent in the household. Many children have very little nurturing or mentoring from committed adults. The societal challenges combine with limited parenting and relationship skills and poorer social support networks overwhelm many Arkansans. Arkansas is also experiencing a significant increase in the Hispanic youth population, now totaling 32,016 children under age 18. Ethnic diversity is an increasing important factor in programming decisions. With new and growing challenges, effective youth development is more important than ever.

Divorce costs the United States an estimated $33.3 billion annually; or $312 per household. Twenty-eight percent of Arkansas families are headed by a single parent; 65% of mothers with children under the age of five are in the workforce; 72% of children under the age of six live in families with both parents working; over 70% of children three-six years of age spend substantial amounts of time in non-parental care; 52% of children under three are in non-parental care. In 2005, 553 of Arkansas' 2,851 licensed child care facilities have achieved quality approval status. Training available at times, locations and formats convenient to child care providers is essential to improving the quality of Arkansas child care.

2. Scope of the Program

- Integrated Research and Extension
- In-State Extension
- Multistate Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Programs addressing quality of life and leadership development issues focus on addressing specific needs of youth and families in close collaboration with state and federal agencies and policymakers. Close coordination is required between the experiment station and cooperative extension to ensure that research studies are conducted that meet specific needs of importance and that needed information is utilized in a public outreach program or to provide needed information for policymakers.

The Arkansas 4-H Program focuses its work on teaching youth and adults the life skills necessary to become capable, competent and caring citizens. The theory of Positive Youth Development guides program development for the Arkansas 4-H Program. The research based Targeting Life Skills Model is the foundation for measuring life skill development. Eight life skills

have been selected to measure on a statewide basis.

The life skills are:
Decision Making
Wise Use of Resources
Communication
Accepting Differences
Leadership
Useful/Marketable Skills
Healthy Lifestyle Choices
Self-Responsibility

Childcare training will continue to be a need because of state mandated licensing requirements. Funding will remain stable or increase during the next seven years. Knowledge can lead to attitude and behavior change. Child care providers will be motivated to learn and adopt recommended practices. Targeted audiences are willing and able to participate in child care training programs.

2. Ultimate goal(s) of this Program

- To strengthen and increase the quality of marriage and couple relationships
- Quality parenting that leads to socially competent children
- Individuals (teens and adults) achieve personal well-being through skill development, attitude change, and the adoption of effective practices
- The mission of 4-H is to provide opportunities for youth to acquire knowledge, develop life skills, form attitudes, and practice behavior that will enable them to become self directing, productive, and contributing members of society
- To improve the quality of care for the children in Arkansas

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	185.3	0.0	3.6	0.0
2010	185.3	0.0	3.6	0.0
2011	185.3	0.0	3.6	0.0
2012	185.3	0.0	3.6	0.0
2013	185.3	0.0	3.6	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Division of Agriculture research programs address family relationship and youth development issues in close collaboration with state and federal agencies and policy makers.

Family, Youth, & Communities educational programs within the University of Arkansas - Divisions of Agriculture include events and activities in the areas of Family & Consumer Science and4-H Youth Development.

Family & Consumer Science programs provide educational topics that help Arkansans get the most for their money; eat well and stay healthy; raise caring, responsible children; and have strong families and strong relationships.

4-H Youth Development programs provide opportunities for youth to acquire knowledge, develop life skills, form attitudes, and practice behavior that will enable them to become self directing, productive, and contributing members of society.Arkansas Extension addresses the professional development needs of school age care providers through the Arkansas 4-H Afterschool training program. School-age providers receive five hours of training in the areas of experiential learning, staff management, 4-H

youth development, guidance and discipline, environmental stewardship, and service learning. The training materials are selected from existing 4-H curriculum and are adapted to fit the needs of providers working in after school settings.

Methods for providing programs entail:
Workshops
Training Sessions
One-to-one counseling
Develop curriculum
Presentations
School enrichment programs
Organize 4-H clubs
Train-the-Trainer
Committee Meetings
Hard-copy fact sheets
Newsletters
Video and compressed video
Radio, television and print media

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Group Discussion • Demonstrations • Workshop • Education Class	• Newsletters • Billboards • Public Service Announcement • Web sites • TV Media Programs

3. Description of targeted audience

Adolescents and adults
Adolescents and adults who expect to become parents
Parents
Grandparents
Caring for the elderly
Step parents
Foster parents
4-H members
4-H youth participants
4-H volunteers
4-H parents
Non-4-H adults
School teachers
County Extension faculty
County FCS Agents
Extension Homemakers Council members and trainers
All married couples or those couples considering marriage
Child care providers
Local, state, and community leaders
Elected officials
Entrepreneurs

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	174550	147000	285150	51325
2010	175900	148750	285700	51450
2011	176600	150500	285850	51625
2012	177300	152250	28600	51800
2013	178000	154000	28750	51975

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

Expected Patent Applications

2009 :0 **2010 :**0 **2011 :** 0 **2012 :** 0 **2013 :** 0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0

V(H). State Defined Outputs

1. Output Target

- Number of Parenting Journey maps circulated

  2009 :36000 **2010 :**35000 **2011 :**32000 **2012 :**28000 **2013 :**22000

- Number of parenting education programs/trainings held for end users

  2009 :45 **2010 :**55 **2011 :**70 **2012 :**70 **2013 :**70

- Number of participants in parenting programs/training

  2009 :2600 **2010 :**4000 **2011 :**4000 **2012 :**4000 **2013 :**4000

- Number of hours of parenting program self-study training provided

  2009 :500 **2010 :**500 **2011 :**520 **2012 :**530 **2013 :**560

- Number of hits on www.arfamilies.org

  2009 :90000 **2010 :**90000 **2011 :**90000 **2012 :**90000 **2013 :**95000

- Number of marriage resources available in print or on www.arfamilies.org website

  2009 :36 **2010 :**38 **2011 :**38 **2012 :**40 **2013 :**42

- Number of hits on marriage resources on www.arfamilies.org website

2009 :2000 **2010** :3000 **2011** :4000 **2012** :5000 **2013** :10000

- Number of marriage education programs/trainings held for end user

2009 :7 **2010** :10 **2011** :12 **2012** :12 **2013** :12

- Number of participants in marriage programs/trainings

2009 :500 **2010** :500 **2011** :550 **2012** :550 **2013** :550

- Number of organized 4-H Clubs

2009 :865 **2010** :875 **2011** :885 **2012** :895 **2013** :905

- Number non-duplicated 4-H Youth Development Healthy Lifestyles programs delivered

2009 :750 **2010** :750 **2011** :750 **2012** :750 **2013** :750

- Number non-duplicated participants in 4-H Youth Development Healthy Lifestyles programs

2009 :11000 **2010** :11000 **2011** :11200 **2012** :11200 **2013** :11300

- Number non-duplicated programs delivered in 4-H Youth Development Citizenship/Leadership

2009 :360 **2010** :365 **2011** :365 **2012** :370 **2013** :370

- Number non-duplicated 4-H science, technology, engineering & math programs delivered

2009 :550 **2010** :575 **2011** :575 **2012** :600 **2013** :600

- Number non-duplicated participants in science, technology, engineering & math programs

2009 :1200 **2010** :1600 **2011** :2000 **2012** :2200 **2013** :2600

- Number of Child Care educational trainings held

2009 :110 **2010** :115 **2011** :115 **2012** :115 **2013** :120

- Number of Child Care online courses offered

2009 :2 **2010** :2 **2011** :2 **2012** :2 **2013** :2

- Number of hours of Child Care in-service training offered

2009 :15 **2010** :15 **2011** :15 **2012** :15 **2013** :15

- Number of hours of Child Care self-study training provided

2009 :1500 **2010** :1500 **2011** :1500 **2012** :1500 **2013** :1500

- Number of federal grants and contracts

2009 :5 **2010** :5 **2011** :5 **2012** :5 **2013** :5

- Number of Families, Youth & Communities clientele contacts from education classes, workshops, group discussions,

one-on-one interventions, demonstrations, and other educational methods

2009 : 174550 **2010 :** 175900 **2011 :** 176600 **2012 :** 176600 **2013 :** 178800

- Number of Families, Youth & Communities education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational events conducted

2009 : 892 **2010 :** 980 **2011 :** 997 **2012 :** 997 **2013 :** 1000

- Number of non-duplicated participants in parenting program self-study training

2009 : 30 **2010 :** 35 **2011 :** 40 **2012 :** 45 **2013 :** 50

- Number of train-the-trainer programs delivered in marriage programs

2009 : 50 **2010 :** 50 **2011 :** 50 **2012 :** 50 **2013 :** 50

- Number of non-duplicated participants in Child Care self-study training

2009 : 450 **2010 :** 465 **2011 :** 475 **2012 :** 486 **2013 :** 500

- Number of participants attending a babysitting course

2009 : 100 **2010 :** 100 **2011 :** 150 **2012 :** 150 **2013 :** 200

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of 4-H participants who learned accepting differences life skill
2	Number of 4-H participants who learned healthy lifestyles choices life skill
3	Number of 4-H participants who learned self-responsibility life skill
4	Number of 4-H participants who learned leadership life skill
5	Number of 4-H participants who learned marketable skills life skill
6	Number of 4-H participants who learned wise use of resources life skill
7	Number of child care providers who report an increase in knowledge related to specific child care issues after participating in an Extension program
8	Number of participants that increased knowledge of leadership development issues
9	Number of participants adopting an effective parenting behavior/practice
10	Number of participants adopting a targeted relationship-enhancing behavior
11	Number of participants adopting a targeted personal development behavior
12	Number of 4-H Journals completed in 4-H Youth Development Healthy Lifestyles areas
13	Number of projects completed in 4-H Youth Development Healthy Lifestyles areas
14	Number of 4-H Journals completed in 4-H Youth Development Citizenship/Leadership areas
15	Number of projects completed in 4-H Youth Development Citizenship/Leadership areas
16	Number of 4-H Journals completed in 4-H Youth Development science, technology, engineering & math areas
17	Number of projects completed in 4-H Youth Development science, technology, engineering & math
18	Number of child care providers adopting a recommended practice after participating in an Extension program
19	Number of participants who report an improved relationship with a child as a result of using a targeted parenting behavior
20	Number of participants who report an improved relationship with a partner as a result of using a targeted parenting behavior
21	Number of participants who report an improved quality of life as a result of using a targeted personal development behavior
22	Number of 4-H members receiving scholarships and grants for post secondary education
23	Number of volunteer hours contributed through the 4-H program by youth and adults who practice good citizenship and provide community-based leadership
24	Number of youth conducting community service projects as a result of leadership development educational efforts
25	Number of Refereed Journal Publications
26	Number of participants who indicate that they have gained knowledge on a targeted parenting behavior
27	Number of participants who indicate that they have gained knowledge on a targeted relationship-enhancing behavior
28	Number of participants who indicate that they have gained knowledge on a targeted personal development behavior
29	Number of 4-H participants who learned decision making life skill
30	Number of 4-H participants who learned communications life skill
31	Number of child care providers who indicate that they have gained knowledge on a targeted child care-giving behaviour
32	Number of participants who increased understanding of health and safety as a result of participating in the babysitting program

Outcome #1

1. Outcome Target

Number of 4-H participants who learned accepting differences life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1200	1250	1300	1350	1400

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #2

1. Outcome Target

Number of 4-H participants who learned healthy lifestyles choices life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
13000	13500	13590	14000	14000

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #3

1. Outcome Target

Number of 4-H participants who learned self-responsibility life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
4000	4000	4100	4100	4200

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #4

1. Outcome Target

Number of 4-H participants who learned leadership life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
2500	2700	3000	3000	3300

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #5

1. Outcome Target

Number of 4-H participants who learned marketable skills life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 2000	**2010 :** 2500	**2011 :** 2575	**2012** 2600	**2013 :** 2625

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #6

1. Outcome Target

Number of 4-H participants who learned wise use of resources life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 4000	**2010 :** 4200	**2011 :** 4400	**2012** 4600	**2013 :** 4800

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #7

1. Outcome Target

Number of child care providers who report an increase in knowledge related to specific child care issues after participating in an Extension program

2. Outcome Type : Change in Knowledge Outcome Measure

2009 300	**2010 :** 320	**2011 :** 340	**2012** 360	**2013 :** 380

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #8

1. Outcome Target

Number of participants that increased knowledge of leadership development issues

2. Outcome Type : Change in Knowledge Outcome Measure

2009 3000	**2010 :** 3500	**2011 :** 4000	**2012** 4500	**2013 :** 4550

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #9

1. Outcome Target

Number of participants adopting an effective parenting behavior/practice

2. Outcome Type : Change in Action Outcome Measure

2009 : 1000	**2010 :** 1500	**2011 :** 1600	**2012 :** 1800	**2013 :** 2000

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #10

1. Outcome Target

Number of participants adopting a targeted relationship-enhancing behavior

2. Outcome Type : Change in Action Outcome Measure

2009 : 110	**2010 :** 155	**2011 :** 200	**2012 :** 270	**2013 :** 300

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #11

1. Outcome Target

Number of participants adopting a targeted personal development behavior

2. Outcome Type : Change in Action Outcome Measure

2009 : 200	**2010 :** 225	**2011 :** 350	**2012 :** 400	**2013 :** 450

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #12

1. Outcome Target

Number of 4-H Journals completed in 4-H Youth Development Healthy Lifestyles areas

2. Outcome Type : Change in Action Outcome Measure

2009 : 200	**2010 :** 215	**2011 :** 215	**2012 :** 220	**2013 :** 220

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #13

1. Outcome Target

Number of projects completed in 4-H Youth Development Healthy Lifestyles areas

2. Outcome Type : Change in Action Outcome Measure

2009 : 450	**2010 :** 465	**2011 :** 480	**2012 :** 500	**2013 :** 500

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #14

1. Outcome Target

Number of 4-H Journals completed in 4-H Youth Development Citizenship/Leadership areas

2. Outcome Type : Change in Action Outcome Measure

2009 : 50	**2010 :** 55	**2011 :** 55	**2012 :** 55	**2013 :** 60

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #15

1. Outcome Target

Number of projects completed in 4-H Youth Development Citizenship/Leadership areas

2. Outcome Type : Change in Action Outcome Measure

2009 : 350	**2010 :** 400	**2011 :** 425	**2012 :** 425	**2013 :** 450

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #16

1. Outcome Target

Number of 4-H Journals completed in 4-H Youth Development science, technology, engineering & math areas

2. Outcome Type : Change in Action Outcome Measure

2009 : 50	**2010 :** 65	**2011 :** 90	**2012 :** 120	**2013 :** 150

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #17

1. Outcome Target

Number of projects completed in 4-H Youth Development science, technology, engineering & math

2. Outcome Type : Change in Action Outcome Measure

2009 : 400	**2010 :** 450	**2011 :** 475	**2012 :** 500	**2013 :** 525

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #18

1. Outcome Target

Number of child care providers adopting a recommended practice after participating in an Extension program

2. Outcome Type : Change in Action Outcome Measure

2009 : 150	**2010 :** 200	**2011 :** 250	**2012 :** 300	**2013 :** 400

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #19

1. Outcome Target

Number of participants who report an improved relationship with a child as a result of using a targeted parenting behavior

2. Outcome Type : Change in Condition Outcome Measure

2009 : 2500	**2010 :** 2400	**2011 :** 2600	**2012 :** 2500	**2013 :** 2700

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #20

1. Outcome Target

Number of participants who report an improved relationship with a partner as a result of using a targeted parenting behavior

2. Outcome Type : Change in Condition Outcome Measure

2009 : 100	**2010 :** 150	**2011 :** 200	**2012 :** 250	**2013 :** 300

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #21

1. Outcome Target

Number of participants who report an improved quality of life as a result of using a targeted personal development behavior

2. Outcome Type : Change in Condition Outcome Measure

2009 :200	**2010 :** 250	**2011 :** 300	**2012** :350	**2013 :**400

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #22

1. Outcome Target

Number of 4-H members receiving scholarships and grants for post secondary education

2. Outcome Type : Change in Condition Outcome Measure

2009 :60	**2010 :** 60	**2011 :** 70	**2012** :70	**2013 :**75

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #23

1. Outcome Target

Number of volunteer hours contributed through the 4-H program by youth and adults who practice good citizenship and provide community-based leadership

2. Outcome Type : Change in Action Outcome Measure

2009 :40000	**2010 :** 40000	**2011 :** 40000	**2012** :40000	**2013 :**40000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #24

1. Outcome Target

Number of youth conducting community service projects as a result of leadership development educational efforts

2. Outcome Type : Change in Action Outcome Measure

2009 :500	**2010 :** 600	**2011 :** 700	**2012** :800	**2013 :**900

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #25

1. Outcome Target

Number of Refereed Journal Publications

2. Outcome Type : Change in Knowledge Outcome Measure

2009	2010	2011	2012	2013
15	15	15	15	15

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 806 - Youth Development

Outcome #26

1. Outcome Target

Number of participants who indicate that they have gained knowledge on a targeted parenting behavior

2. Outcome Type : Change in Knowledge Outcome Measure

2009	2010	2011	2012	2013
4000	4250	4500	5000	5500

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #27

1. Outcome Target

Number of participants who indicate that they have gained knowledge on a targeted relationship-enhancing behavior

2. Outcome Type : Change in Knowledge Outcome Measure

2009	2010	2011	2012	2013
170	220	280	325	350

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #28

1. Outcome Target

Number of participants who indicate that they have gained knowledge on a targeted personal development behavior

2. Outcome Type : Change in Knowledge Outcome Measure

2009	2010	2011	2012	2013
425	500	575	650	725

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #29

1. Outcome Target

Number of 4-H participants who learned decision making life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 700	**2010 :** 800	**2011 :** 800	**2012 :** 900	**2013 :** 900

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #30

1. Outcome Target

Number of 4-H participants who learned communications life skill

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 2500	**2010 :** 2750	**2011 :** 3000	**2012 :** 3250	**2013 :** 3500

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 806 - Youth Development

Outcome #31

1. Outcome Target

Number of child care providers who indicate that they have gained knowledge on a targeted child care-giving behaviour

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 450	**2010 :** 465	**2011 :** 475	**2012 :** 485	**2013 :** 500

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

Outcome #32

1. Outcome Target

Number of participants who increased understanding of health and safety as a result of participating in the babysitting program

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 100	**2010 :** 100	**2011 :** 100	**2012 :** 100	**2013 :** 100

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Public priorities
- Appropriations changes
- Other (Fuel prices & loss of personel)
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Economy
- Competing Programmatic Challenges
- Government Regulations

Description

The University of Arkansas Division of Agriculture is positioned to respond proactively through educational activities and demographic changes that affect the quality of life for Arkansans and assist families and youth to improve their lives.

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

1. Evaluation Studies Planned

- During (during program)
- After Only (post program)
- Before-After (before and after program)
- Retrospective (post program)

Description

The Arkansas 4-H Program is developing a on-line life skill evaluation database system to measure life skills learned during 4-H programming. The agents can chose indicators from 8 targeted life skills. The program will produce retrospective evaluations for use at the end of educational programming. The agents will then input the answers into the database for result compilation.

2. Data Collection Methods

- Sampling
- On-Site

Description

The evaluation plan will be implemented during the five-year plan of work.

V(A). Planned Program (Summary)

Program #2

1. Name of the Planned Program

Agricultural & Food Biosecurity

2. Brief summary about Planned Program

The University of Arkansas Division of Agriculture provides unbiased research-based information and technical assistance on topics related to biosecurity and bioterrorism. Information is disseminated focusing on the needs of consumers, the general public and livestock and row crop producers. In response to potential attacks on the safety of the nation's food supply, the UA Division of Agriculture extension and research faculty work collaboratively with industry leaders involved in animal agriculture, to assume a leading role in raising biosecurity awareness. Grain, processed ingredients, animal feed, pet food and their delivery vehicles all serve as potential vectors for intentional contamination, resulting in injury to humans and animals.

Animal biosecurity programming efforts are focused on reducing the disease threat in poultry and livestock operations. Producer/Grower education is provided by faculty to improve biosecurity through proper methods of sanitation, disease prevention, recognition and control in animal production facilities. Disease detection education and consultation is also provided to livestock inspectors, state disease regulatory personnel, state/federal veterinarians, veterinarians in private practice, and poultry company personnel. Monitoring of flock and herd health status is facilitated through diagnostic medicine, surveys and testing through the diagnostic lab.

The Arkansas Soybean Rust Program was initiated in November 2004, in response to the discovery of Asian soybean rust in the state. The program involves soybean agronomists, plant pathologists, county agents, regulatory and industry personnel.

The Cooperative Extension Service administers the Plant Health Clinic (near Lonoke, AR) and the Plant Nematology Diagnostic Clinic (near Hope, AR). The PHC near Lonoke is a triage lab for the state and a member of the Southern Pest Detection Network. The Clinic not only provides routine diagnoses used in crop and plant protection, but serves as an early detection facility for new, exotic or emerging problems. Records are shared with the National Pest Detection Network. Observations are used to support research and education efforts, to guide new research focus areas as need, and to support regulatory entities such as APHIS, FGIS, and the Plant Board.

Technical and educational resources are provided for communities, groups and/or individuals who have become victims or need resources to minimize the impact of terrorism or natural disasters. Multi-disciplinary training and technical assistance is available through extension faculty related to source water contamination, grain handling and storage security, agriculture aviation security, farm security planning, disease prevention, food safety, emergency preparedness and disaster response practices.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	15%		15%	
213	Weeds Affecting Plants	10%		10%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		5%	
311	Animal Diseases	20%		20%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.	5%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%		20%	
722	Zoonotic Diseases and Parasites Affecting Humans	15%		15%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Biosecurity research and educational outreach is critical to the sustainability of Arkansas agriculture, the public health, and our state economy. Biosecurity research and educational programming requires an integrated approach, working with state and federal agencies, regulatory officials and policy makers in a partnership to analyze and manage risks in the sectors of food safety, animal life and health, plant life and public health. Through research and educational outreach, Division of Agriculture faculty work with the general public, state/federal agency personnel, consumers, growers/producers and allied industry personnel to promote biosecurity risk management planning and prevention practices designed to reduce/prevent the spread and movement of infectious diseases.

Accurate and timely diagnosis is fundamental to animal and plant protection and crop biosecurity. Infectious diseases introduced onto a farm operation can have a devastating effect on cash flow and equity. Diseases cost the Arkansas poultry industry an estimated 10% of the total bird value each year. In Arkansas this means that diseases may cost the industry as much as $230 million a year. Severe disease outbreaks such as the 2002-2003 in Califorina resulted in the eradication of over 5 million birds, at a cost of over $65 million dollars to that state.A diagnosis of an exotic animal disease outbreak would devastate the poultry industry and the economy of Arkansas.

Asian soybean rust (ASBR) entered the United States, including Arkansas, in late 2004 and has successfully wintered in Gulf Coast region. Dry years since have prevented damage to state crops, but monitoring programs successfully detected entrance of soybean rust into the state during September, 2006 and 2007. In a two week period, spores of the fungus reached the upper midwest illustrating the speed of this airborne plant pathogen. With the return of normal spring and summer weather, and the early planted soybean production system in the South now, this disease remains a major threat. Other exotic diseases, including bakanae in rice and sudden oak death of ornamentals continue to be a concern for the state as do numerous exotic

insects (soybean aphid); weeds (tropical soda apple); mollusks (golden apple snail); nematodes (Ditylenchus) and other pests. With the global economy of plant agriculture, ease and speed of intercontinental travel, changing climate, and the threat of global agro-terrorism - vigilance to protect domestic agricultural production and U.S. consumers is a high priority.

2. Scope of the Program

- In-State Research
- In-State Extension
- Multistate Integrated Research and Extension
- Multistate Extension
- Integrated Research and Extension
- Multistate Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Biosecurity policy, protocols, and practices are critical to the health of Arkansas' citizens and the state economy. Biosecurity can be difficult to maintain because of the very complex interrelationship between pathogens, management and biosecurity. While developing and implementing biosecurity is difficult, it is the cheapest, most effective method of disease control available, and no disease prevention program will work without it. Everyone is at risk for food-borne illnesses-diseases caused by pathogens or toxins ingested with food. Contamination of our food supply, both domestic and imported is a growing concern. Increased collaboration with regulatory officials, state health officials, policy-makers, growers/producers, and the general public is a key strategy for maximizing key resources for an effective biosecurity strategy and plan. Research, education and outreach must be integrated for effective public policy development, implementation planning, and impact assessment.

The Univeristy of Arkansas Division of Agricutlure manages an animal-testing laboratory. This laboratory tests for diseases that affects the poulty and other livestock industries. This recently aquired facility will play an important role in terms of monitoring animal diseases.

Biosecurity risk assessment, animal and plant diagnostics, and improved surveillance are key technologies in biosecurity.

2. Ultimate goal(s) of this Program

To improve animal biosecurity and reduce the risk of a disease threat in poultry and livestock operations

To improve the security of plant health through early identification and management of invasive plant pests.

To improve consumer/general public biosecurity through education for the prevention of foodborne illness from infectious diseases and harmful chemicals as a result of natural disaster or terrorism.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	2.6	0.0	3.2	0.0
2010	2.6	0.0	3.2	0.0
2011	2.6	0.0	3.2	0.0
2012	2.6	0.0	3.2	0.0
2013	2.6	0.0	3.2	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Individual consultations and interviews
Workshops/Conferences/Trainings

Farm visits
Field Days
Surveillance and Monitoring
Education materials
Mass Media (print, radio, TV)
Newsletters & Direct Mailing
Collaboration with state/federal agencies and regulatory officials

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Group Discussion • One-on-One Intervention • Other 1 (Surveillance and Monitoring) • Workshop • Demonstrations • Education Class	• Web sites • Other 1 (Mass Media) • TV Media Programs • Public Service Announcement • Newsletters

3. Description of targeted audience

Row crop producers
Crop consultants
Dealer personnel
Pesticide applicators
Poultry Company Personnel
Livestock and Poultry Producers
Local/State/Federal Personnel
First Responders
Food Processing Personnel
Agribusiness
Home Owners/Consumers
Division of Agriculture personnel

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	10000	20000	120	0
2010	10500	20500	120	0
2011	11000	21000	120	0
2012	11500	21500	120	0
2013	12000	22000	120	0

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

Expected Patent Applications

2009 :3 **2010 :**3 **2011 :** 3 **2012 :**3 **2013 :**3

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	20	20	40
2010	20	20	40
2011	20	20	40
2012	20	20	40
2013	20	20	40

V(H). State Defined Outputs

1. Output Target

- # of clientele trained on Agricultural and Food Biosecurity

  2009 :10000 **2010 :**10500 **2011 :**11000 **2012 :**11500 **2013 :**12000

- # of educational materials developed on Agricultural and Food Biosecurity

  2009 :10 **2010 :**5 **2011 :**5 **2012 :**5 **2013 :**5

- # of newsletters & fact sheets disseminated to clientele regarding Agricultural and Food Biosecurity

  2009 :10000 **2010 :**10000 **2011 :**10000 **2012 :**10000 **2013 :**10000

- # of clientele interviewed/surveyed on Agricultural and Food Biosecurity

  2009 :100 **2010 :**100 **2011 :**100 **2012 :**150 **2013 :**200

- # of requested consultations related to exotic animal disease concerns

  2009 :250 **2010 :**250 **2011 :**250 **2012 :**250 **2013 :**250

- # of hits to CES website regarding avian biosecurity

  2009 :4400 **2010 :**4500 **2011 :**4600 **2012 :**4600 **2013 :**4600

- # of hits to CES website regarding livestock biosecurity

  2009 :14000 **2010 :**14250 **2011 :**14250 **2012 :**14250 **2013 :**14250

- # of plant sites surveyed monitored

  2009 :30 **2010 :**35 **2011 :**35 **2012 :**35 **2013 :**35

V(I). State Defined Outcome

O. No	Outcome Name
1	# of growers/producers reporting knowledge gained or increased awareness of need for biosecurity
2	# of growers/producers reporting intent to adopt new biosecurity practices for animal production facilities
3	# of growers/producers adopting new practices outlined in educational programs to improve biosecurity through proper methods of sanitation, disease prevention, recognition, and control
4	# of diagnostic invasive plant pest samples
5	# of diagnostic invasive nematode samples
6	# of avian samples submitted to diagnostic labs for exotic animal disease testing
7	# of Asian Soybean Rust positive samples
8	# of SOD positive samples
9	# of plant pests (other) positive samples

Outcome #1

1. Outcome Target

# of growers/producers reporting knowledge gained or increased awareness of need for biosecurity

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
150	150	150	150	150

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 311 - Animal Diseases
- 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
- 722 - Zoonotic Diseases and Parasites Affecting Humans

Outcome #2

1. Outcome Target

# of growers/producers reporting intent to adopt new biosecurity practices for animal production facilities

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
150	150	150	150	150

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 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
- 722 - Zoonotic Diseases and Parasites Affecting Humans

Outcome #3

1. Outcome Target

# of growers/producers adopting new practices outlined in educational programs to improve biosecurity through proper methods of sanitation, disease prevention, recognition, and control

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
100	100	100	100	100

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 311 - Animal Diseases
- 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
- 722 - Zoonotic Diseases and Parasites Affecting Humans

Outcome #4

1. Outcome Target

# of diagnostic invasive plant pest samples

2. Outcome Type : Change in Condition Outcome Measure

2009 : 2000 **2010 :** 2000 **2011 :** 2000 **2012 :** 2000 **2013 :** 2000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 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 #5

1. Outcome Target

# of diagnostic invasive nematode samples

2. Outcome Type : Change in Condition Outcome Measure

2009 : 5000 **2010 :** 5000 **2011 :** 5000 **2012 :** 5000 **2013 :** 5000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

Outcome #6

1. Outcome Target

# of avian samples submitted to diagnostic labs for exotic animal disease testing

2. Outcome Type : Change in Action Outcome Measure

2009	2010	2011	2012	2013
17000	18000	19000	20000	20000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 722 - Zoonotic Diseases and Parasites Affecting Humans

Outcome #7

1. Outcome Target

# of Asian Soybean Rust positive samples

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
1000	1000	1000	1000	1000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

Outcome #8

1. Outcome Target

# of SOD positive samples

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
5	5	5	5	5

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

Outcome #9

1. Outcome Target

# of plant pests (other) positive samples

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
20	20	20	20	20

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Other (See explanation)
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)
- Natural Disasters (drought,weather extremes,etc.)
- Competing Public priorities
- Economy
- Public Policy changes
- Competing Programmatic Challenges
- Government Regulations

Description

The contribution of the agricultural sector as a percentage of the Gross State Product in Arkansas is greater than in any contiguous state as well as the averages for the Southeast region and the United States. Arkansas agriculture provides 286,940 jobs, which is nearly one in every five and $8.94 billion in labor income, or 19% of the state's total labor income. Therefore any changes in any of the external factors could cause devastating affects throughout Arkansas' economy. These changes could include but notbe limited to natural disasters, overall economy, changes in public policy and regulations, diseases affecting plants or animals and bioterrorism/agroterrorism.Other external factors include animal disease outbreaks and human epidemics.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study
- After Only (post program)
- Other (Use of Secondary Data)
- Retrospective (post program)
- During (during program)

Description

Evaluation data will be collected from a sample of program participants to determine program impact or management practices implemented or changed to strengthen agriculture and food biosecurity.

2. Data Collection Methods

- Sampling
- Structured
- Unstructured
- Case Study
- Tests
- On-Site
- Other (Self reported data)
- Observation

Description

Data will be collected using various methods appropriate for the target audience. This data will be used to evaluate the current studies and planned studies.

V(A). Planned Program (Summary)

Program #3

1. Name of the Planned Program

Agricultural Systems

2. Brief summary about Planned Program

Extension education in Agricultural Systems occurs in other program areas within UA Extension.For example, in the areas of livestock and horticultural production, program components deal with production, economics, and environmental issues.Yet these same educational needs occur in smaller scale production units that may be described as alternative, niche, organic, locally-grown, or sustainable agriculture.This program documents and supports educational efforts focusing on smaller scale production.

The Alternative Agricultural System program educates producers about non-traditional practices with the potential for providing supplemental income to their farming operation. Sometimes alternative enterprises become the primary family income once an understanding of business management and profitability is achieved. This program promotes sustainable management practices for alternative enterprises. It requires input and collaboration from experts in diverse fields such as animal and plant sciences, forestry, natural resources, agriculture policy and law, and agricultural economics and marketing. Examples of alternative enterprises are organic vegetable and fruit production, bees, tomatoes, grass-fed beef, pen-raised game birds, pine straw, shiitake mushrooms, herb production, small livestock (e.g., goats, rabbits, backyard poultry), and wildlife-recreation/fee fishing enterprises. Landowners are provided information about alternative agricultural practices and are encouraged to design a business plan as a decision-making tool for determining whether to invest in its establishment.

Research indicates only 1% to 5% of those who attend workshops about establishing alternative enterprises actually establish one. The decision not to pursue an alternative agricultural enterprise is as meaningful as deciding to establish one. Potential losses of time and financial resources are averted. Educated participants are expected to make informed decisions about whether to start an alternative agricultural enterprise. Therefore long-term outcomes indicating only the number who successfully establish an enterprise do not accurately reflect program success.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	10%		10%	
112	Watershed Protection and Management	5%		5%	
131	Alternative Uses of Land	5%		5%	
133	Pollution Prevention and Mitigation	5%		5%	
134	Outdoor Recreation	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	5%		5%	
205	Plant Management Systems	5%		5%	
216	Integrated Pest Management Systems	10%		10%	
307	Animal Production Management Systems	5%		5%	
401	Structures, Facilities, and General Purpose Farm Supplies	5%		5%	
403	Waste Disposal, Recycling, and Reuse	5%		5%	
601	Economics of Agricultural Production and Farm Management	5%		5%	
602	Business Management, Finance, and Taxation	5%		5%	
604	Marketing and Distribution Practices	10%		10%	
605	Natural Resource and Environmental Economics	5%		5%	

711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Many agricultural producers and private landowners seek ways to generate income from their land.Producers are diversifying their operations and marketing strategies to increase profitability and sustain farms.There is a trend of increasing sales directed to the public and substantial emergence of the organic and farmer markets.Almost fifteen hundred Arkansas farms provided direct sales to the public with total sales of $5.7 million according to the 2002 USDA Census of Agriculture.Growth in the organic market ranges from 15% to 20% annually since 1997.Total food sales for organic products have grown from 0.81% to 2.48% from 1997 to 2005.Other alternative agricultural segments are also experiencing growth.For example, goats have been the fastest growing livestock enterprise over the last 5 years. In Arkansas, The Natural State, outdoor recreation and agritourism are important industries in rural communities.It is not unreasonable for a landowner to lease a duck blind for $2000 during the waterfowl season. The Arkansas recreational fishing industry has an economic impact of over $440 million per year.

Educational efforts help landowners decide whether to invest in alternative agricultural enterprises through designing enterprise management plans and marketing strategies.Experts in the University of Arkansas System are available to provide basic information about content areas to help the landowner get started in his or her interest in alternative agricultural enterprises.

2. Scope of the Program

- Multistate Integrated Research and Extension
- Integrated Research and Extension
- In-State Extension
- Multistate Research
- Multistate Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Current trends indicate declining numbers of full-time farms but an increase in part-time and alternative farms.These part-time and alternative agricultural producers continually seek new and innovative ways to generate farm income. Identifying niche markets and capitalizing on specialized agricultural opportunities is a matter of economic sustainability and cultural survival for many agricultural producers.

Extension is strategically placed for agricultural education through access to experts and researchers in diverse fields throughout the University of Arkansas System, including research facilities specifically aimed at small and alternative production systems.Educational programs addressing community perceptions and concerns, in concert with the transfer of agricultural system information and technology, are critical in order to support landowner planning and implementation of alternative production systems that enhance the economic viability of the community.Those who are just getting started are actively seeking information and oftentimes represent a new audience of Extension clientele.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to enhance economic opportunities for landowners and tenants using sustainable land management practices to improve rural economies in Arkansas.This is accomplished by educating producers, which enable them to make informed decisions about whether to establish an alternative agricultural enterprise.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	6.0	0.0	1.8	0.0
2010	6.0	0.0	1.8	0.0
2011	6.0	0.0	1.8	0.0
2012	6.0	0.0	1.8	0.0
2013	6.0	0.0	1.8	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

A broad range of direct and indirect methods will be used to provide information to both groups and individuals:
Educational meetings
Tours
Field days
Workshops
One-on-one consultations including farm visits and telephone responses
Articles, newsletters and media interviews in publications targeting agricultural producers and private landowners
Demonstrations
Web-based information
Publications/fact sheet

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Demonstrations • Group Discussion • Workshop • Education Class • One-on-One Intervention	• Newsletters • Other 1 (Publications/Fact Sheets) • Web sites

3. Description of targeted audience

Agricultural producers
Consultants/certifiers
Non-farm private landowners
Governmental Agency Personnel
Sales & service providers
General public

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	15000	7000	1000	300
2010	15250	7100	1000	300
2011	15500	7200	1000	325
2012	15750	7300	1000	325
2013	16000	7400	1000	325

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

Expected Patent Applications

2009 :0 **2010 :**0 **2011 :** 0 **2012 :** 0 **2013 :** 0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	1	2	3
2010	1	2	3
2011	2	2	4
2012	2	2	4
2013	2	2	4

V(H). State Defined Outputs

1. Output Target

- # attending Agricultural Systems education classes, workshops, group discussions, one-on-one interventions, and other educational methods

  2009 :7000 **2010 :**7100 **2011 :**7200 **2012 :**7300 **2013 :**7400

- # Of Agricultural Systems education classes, workshops, group discussions, and other educational events

  2009 :65 **2010 :**65 **2011 :**65 **2012 :**65 **2013 :**65

- Number of demonstrations for example demonstration study farm, food plots, etc.

  2009 :2 **2010 :**2 **2011 :**3 **2012 :**3 **2013 :**3

V(I). State Defined Outcome

O. No	Outcome Name
1	# of clientele who reported knowledge gained
2	Value of alternative agricultural products sold ($1000)
3	Acres of alternative crops planted.
4	# of clientele who initiated an alternative enterprise, as self reported
5	# of farms selling alternative agricultural products or services, such as farmer markets and wildlife enterprises

Outcome #1

1. Outcome Target

# of clientele who reported knowledge gained

2. Outcome Type : Change in Knowledge Outcome Measure

2009 250	**2010 :** 250	**2011 :** 250	**2012** 250	**2013 :** 250

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 134 - Outdoor Recreation
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 307 - Animal Production Management Systems
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.

Outcome #2

1. Outcome Target

Value of alternative agricultural products sold ($1000)

2. Outcome Type : Change in Condition Outcome Measure

2009 20000	**2010 :** 20000	**2011 :** 20000	**2012** 20000	**2013 :** 20000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

Outcome #3

1. Outcome Target

Acres of alternative crops planted.

2. Outcome Type : Change in Action Outcome Measure

2009 : 6000 **2010 :** 6000 **2011 :** 6000 **2012 :** 6000 **2013 :** 6000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 134 - Outdoor Recreation
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 307 - Animal Production Management Systems
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

Outcome #4

1. Outcome Target

# of clientele who initiated an alternative enterprise, as self reported

2. Outcome Type : Change in Action Outcome Measure

2009 : 25 **2010 :** 25 **2011 :** 25 **2012 :** 25 **2013 :** 25

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 134 - Outdoor Recreation
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems

- 216 - Integrated Pest Management Systems
- 307 - Animal Production Management Systems
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.

Outcome #5

1. Outcome Target

# of farms selling alternative agricultural products or services, such as farmer markets and wildlife enterprises

2. Outcome Type : Change in Condition Outcome Measure

2009 :250 **2010 :** 250 **2011 :** 250 **2012** :250 **2013 :**250

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Programmatic Challenges
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Competing Public priorities
- Economy
- Natural Disasters (drought,weather extremes,etc.)
- Appropriations changes

Description

External factors such as natural disasters, economy, appropriations changes, public policy changes, government regulations, competing public priorities, competing programmatic challenges, and population changes affect market prices which in turn affect investments in and profits from alternative agricultural enterprises.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Case Study
- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

Description

Evaluation studies are conducted with a broad audience in which information is transferred to a group during a workshop or field tour.Another audience is a one-on-one contact conducted as a response to a request on an "as needed" basis.

2. Data Collection Methods

- Tests
- Other (Web-based surveying)
- Sampling
- Telephone
- Structured
- Whole population
- Observation
- Case Study
- Mail
- Unstructured
- On-Site

Description

Effective and appropriate methods will be used.Some audiences are small enough that whole populations will be evaluated.Others will be evaluated using on-site post-event surveys.A few case studies will be conducted using unstructured interviews.Observation will be used in conjunction with the other methods.

V(A). Planned Program (Summary)

Program #4

1. Name of the Planned Program

Animals & Animal Products

2. Brief summary about Planned Program

The University of Arkansas Division of Agriculture provides unbiased research-based information and technical assistance on topics related to animals and animal products. Information is disseminated focusing on the needs of consumers, the general public and livestock and row crop producers. The UA Division of Agriculture faculty work together to understand related the issues of livestock production, products and processing, and aquaculture. Aquaculture programs are conducted through collaborative efforts between UA educators and aquaculture faculty of the 1890 land grant institution, University of AR Pine Bluff. These activities also expand our knowledge of the impact of the human/animal interaction on environmental and economic sustainability and the well-being of animals and humans alike. The goal of the research program is to provide pertinent basic and practical information on animal and poultry physiology, genetics, nutrition and animal health that will help Arkansas livestock producers and food companies remain competitive in the global market place.

The Livestock and forage production and management programs provide research-based information through non-formal educational methods for the sustainability of agricultural production systems to improve Arkansans quality of life and to teach lifelong skills to youth.

While highly efficient, organized, and sophisticated, the U. S. poultry industry is facing unprecedented challenges. As the poultry industry meets the challenge of remaining viable in a highly competitive global market as well as facing extraordinary domestic challenges, the poultry industry will rely more on educational opportunities provided by the UA Division of Agriculture Extension Service to develop better production strategies through the following programs:

1. Poultry Breeder Management Training to ensure that maximum performance is obtained from these valuable flocks;
2. Poultry Hatchery Management Training to ensure that hatcheries operate efficiently;
3. Poultry Producer Education Programs to encourage producers to adopt effective management practices;
4. Poultry Short Courses to ensure that allied industry officials understand the industry; and
5. Demonstrations that show the impact of water quality on poultry production to encourage proper water management.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	6%		6%	
204	Plant Product Quality and Utility (Preharvest)	6%		6%	
205	Plant Management Systems	6%		6%	
206	Basic Plant Biology	6%		6%	
301	Reproductive Performance of Animals	6%		6%	
302	Nutrient Utilization in Animals	8%		8%	
303	Genetic Improvement of Animals	6%		6%	
304	Animal Genome	6%		6%	
305	Animal Physiological Processes	6%		6%	
306	Environmental Stress in Animals	6%		6%	
307	Animal Production Management Systems	10%		10%	
308	Improved Animal Products (Before Harvest)	6%		6%	
311	Animal Diseases	6%		6%	
315	Animal Welfare, Well-Being and Protection	6%		6%	
601	Economics of Agricultural Production and Farm Management	10%		10%	

	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Livestock production is a very important industry in Arkansas. Approximately 26,000 farms in Arkansas produce beef cattle. Over six million acres of pasture and hayland are in production to support the livestock and forage inductries. Arkansas is the home of 1.9 million head of cows and calves, with the number of beef cows and heifers reaching over 1.0 million head in 2006. The average cow herd size is 37 head with 80% of the farms having less than 50 head. The gross income from Arkansas' beef cattle industry reached $555 million with a total economic impact over $1 billion annually. The total annual economic impact of the dairy industry with heifers and dairy products is $450 million. Approximately 150 dairies with 15,000 dairy cows are located in Arkansas. With an average milk production per cow of 14,000 pounds in commercial herds, the Arkansas dairy industry produces over 200 million pounds of milk per year. Milk income is $40 million per year.Increased input costs, fluctuation in milk prices, quality milk production and efficiency of milk production continue to be major concerns of the Arkansas dairy industry.

The horse industry is growing in Arkansas. Approximately 63,000 households own 160,000 to 170,000 horses. Although recreation is the number one reason for horse ownership, the horse industry is a $4 billion industry.

Livestock producers will benefit from livestock and forage management production programs to improve production efficiency and returns. In addition, society will benefit as a result of better-trained youth becoming better adult citizens.

Arkansas is a leading state in overall animal and poultry production and has several key companies in meeting the U.S. and international demand for high quality meat products. The poultry industry is a major source of jobs, income and cash flow with the state of Arkansas. Ensuring that the research and educational needs of the poultry industry are met is a priority.

Given current economic conditions, many agricultural producers and private landowners seek ways to generate income from their land. Arkansas has a $167 million aquaculture industry with an economic impact of over $1.2 billion in the poverty-stricken Delta region of Arkansas. Improved economic conditions of some rural communities in the south have been attributed to income generated from alternative agricultural enterprises. Experts in the University of Arkansas System are available to provide basic information about content areas to help the landowner get started in his or her interest in aquaculture agricultural enterprises.

2. Scope of the Program

- Multistate Integrated Research and Extension
- Multistate Extension
- In-State Extension
- Integrated Research and Extension
- Multistate Research
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Given current trends in declining numbers of farms, part-time and hobby farmers, specialized farming, and the globalization of agriculture, producers continually seek new and innovative ways to generate farm income. Identifying niche markets and capitalizing on specialized agricultural opportunities is a matter of economic survival for many agricultural producers.

Extension is strategically placed as agricultural educators with access to experts and researchers in diverse fields throughout the University of Arkansas System.

It is economically vital to Arkansas to maintain a strong livestock industry.
It is also critical to protect water and air quality.
Regulations and court action will impose restrictions on manure management options.
Neighbor/Community perceptions must be considered in conjunction with planned agricultural practices.
The classic "personal property rights vs. public good" situation will require a blend of science, economics, legal, community relations, and compromises to address.
While there are similarities in the various livestock and poultry operations each farm is unique and will have unique solutions.

The root cause of the manure nutrient problem is typically more nutrients enter the confined animal farms as feed than leave as animal products.

To ultimately solve this problem economically viable alternative higher value uses of animal manure must be found.

For both water quality and air quality issues proper management of both existing and future systems will be critical.

There must be research, new options, economic incentives, and legal flexibility to enable operational changes to address environmental concerns.

Education regarding community perceptions and concerns, in concert with the transfer of agricultural system information and technology, is critical in order to support landowner planning and implementation of production system options.

2. Ultimate goal(s) of this Program

Through integrated UA Division of Agriculture research and education efforts:

Ensure the viability and efficiency of the livestock and forage industry so that it competes effectively in domestic and global markets

Ensure the viability and efficiency of the poultry industry so that it competes effectively in domestic and global markets

Support the aquaculture industry as an alternative enterprise

Improve economic (efficiency and profitability) position of livestock, poultry and aquaculture producers

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	21.6	0.0	20.4	0.0
2010	21.6	0.0	20.4	0.0
2011	21.6	0.0	20.4	0.0
2012	21.6	0.0	20.4	0.0
2013	21.6	0.0	20.4	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct educational meetings, workshops, farm visits to educate agricultural producers.

Conduct tours, field days and demonstrations

Conduct one-on-one consultations

Publish educational materials

Conduct mass media efforts (radio, TV, etc.)

Conduct train-the-trainer education

Partner with industry (when appropriate)

Design and conduct practical and applied research to improve the efficiency of growth, reproduction, health and management of livestock, forages, aquaculture, and poultry

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
• Group Discussion • Education Class • Workshop • One-on-One Intervention • Demonstrations	• TV Media Programs • Newsletters • Public Service Announcement • Other 1 (Mass Media)

3. Description of targeted audience

Agricultural producers
Non-farm private landowners
Aquaculture producers
Small pond owners
Agricultural businesses/Allied industry personnel
Consultants
Breeder managers
Hatchery Managers
Commercial poultry producers
Commercial poultry companies
Other researchers
Students
Extension specialists
Teaching faculty
Research funding personnel and agencies
Policy and decision makers
Public

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	46800	50000	0	0
2010	49050	51000	0	0
2011	51320	52000	0	0
2012	52000	53000	0	0
2013	53500	54000	0	0

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

Expected Patent Applications

2009 : 8 **2010 :** 9 **2011 :** 10 **2012 :** 11 **2013 :** 12

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	125	13	138
2010	128	13	141
2011	132	13	145
2012	135	13	148
2013	138	13	151

V(H). State Defined Outputs

1. Output Target

- Number of educational programs, workshops, educational meeting and/or field days

2009	2010	2011	2012	2013
400	400	400	400	400

- Number of clientele attending educational programs (field days, workshops, etc.)

2009	2010	2011	2012	2013
38000	38000	38000	38000	38000

- Number of producers receiving educational material (newsletters, fact sheets, etc)

2009	2010	2011	2012	2013
45000	45000	45000	45000	45000

- Number of producers conducting on farm demonstrations

2009	2010	2011	2012	2013
47	53	57	60	60

- Number of farm visits or one-on-one consultations with producers

2009	2010	2011	2012	2013
5000	5000	5000	5000	5000

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of business start ups related to animal and animal products
2	Number of livestock producers who increased knowledge or gained awareness related to livestock production management practices
3	Number of livestock producers who adopted a new practice
4	Number of livestock producers who initiated or improved their record keeping
5	Number of poultry producers who adopted new practices or technology
6	Number of allied poultry industry personnel who adopt new practices or technology
7	Number of livestock producers who changed a management practice
8	Arkansas cash receipts from farm marketing ($1,000) related to aquaculture enterprises.
9	Number of clientele who reported knowledge gained related to aquaculture.
10	Number of clientele who adopted new aquaculture practices.

Outcome #1

1. Outcome Target

Number of business start ups related to animal and animal products

2. Outcome Type : Change in Condition Outcome Measure

2009 : 2 **2010 :** 3 **2011 :** 3 **2012 :** 3 **2013 :** 3

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 306 - Environmental Stress in Animals
- 601 - Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Target

Number of livestock producers who increased knowledge or gained awareness related to livestock production management practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 7000 **2010 :** 7000 **2011 :** 7000 **2012 :** 7000 **2013 :** 7000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 206 - Basic Plant Biology
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 307 - Animal Production Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Target

Number of livestock producers who adopted a new practice

2. Outcome Type : Change in Action Outcome Measure

2009 : 2000 **2010 :** 2000 **2011 :** 2000 **2012 :** 2000 **2013 :** 2000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Target

Number of livestock producers who initiated or improved their record keeping

2. Outcome Type : Change in Action Outcome Measure

2009 200 **2010 :** 200 **2011 :** 200 **2012** 200 **2013 :** 200

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Target

Number of poultry producers who adopted new practices or technology

2. Outcome Type : Change in Action Outcome Measure

2009 : 115	**2010 :** 120	**2011 :** 125	**2012 :** 125	**2013 :** 125

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 306 - Environmental Stress in Animals
- 311 - Animal Diseases

Outcome #6

1. Outcome Target

Number of allied poultry industry personnel who adopt new practices or technology

2. Outcome Type : Change in Action Outcome Measure

2009 : 25	**2010 :** 30	**2011 :** 30	**2012 :** 30	**2013 :** 30

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 304 - Animal Genome
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

Outcome #7

1. Outcome Target

Number of livestock producers who changed a management practice

2. Outcome Type : Change in Action Outcome Measure

2009 : 1800	**2010 :** 1800	**2011 :** 1800	**2012 :** 1800	**2013 :** 1800

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)

- 205 - Plant Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

Outcome #8

1. Outcome Target

Arkansas cash receipts from farm marketing ($1,000) related to aquaculture enterprises.

2. Outcome Type : Change in Action Outcome Measure

2009 : 107000 **2010 :** 108000 **2011 :** 108000 **2012 :** 108000 **2013 :** 108000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 307 - Animal Production Management Systems
- 601 - Economics of Agricultural Production and Farm Management

Outcome #9

1. Outcome Target

Number of clientele who reported knowledge gained related to aquaculture.

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 55 **2010 :** 60 **2011 :** 60 **2012 :** 60 **2013 :** 60

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection

- 601 - Economics of Agricultural Production and Farm Management

Outcome #10

1. Outcome Target

Number of clientele who adopted new aquaculture practices.

2. Outcome Type : Change in Action Outcome Measure

2009 :25 **2010** : 30 **2011** : 35 **2012** :35 **2013** : 35

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Natural Disasters (drought,weather extremes,etc.)

Description

The contribution of the agricultural sector as a percentage of the Gross State Product in Arkansas is greater than in any contiguous state as well as the averages for the Southeast region and the United States. Arkansas agriculture provides 286,940 jobs, which is nearly one in every five and $8.94 billion in labor income, or 19% of the state's total labor income. Therefore any changes in any of the external factors could cause devastating affects throughout Arkansas' economy. These changes could include but not limited to natural disasters, overall economy, changes in public policy and regulations, and diseases affecting plants or animals.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- After Only (post program)
- Case Study
- Other (Secondary Data)
- Retrospective (post program)

Description

Evaluation data will be collected from a sample of program participants to determine program impact or management practices implemented or changed to strengthen animal agriculture.

2. Data Collection Methods

- Structured
- Sampling
- On-Site
- Other (State Reported Data)
- Observation
- Tests
- Unstructured
- Case Study

Description

Data will be collected using various methods appropriate for the target audience. This data will be used to evaluate the current studies and planned studies

V(A). Planned Program (Summary)

Program #5

1. Name of the Planned Program

Economics & Commerce

2. Brief summary about Planned Program

The University of Arkansas Division of Agriculture's Economics and Commerce faculty will work in a coordinated effort to address research, education and extension needs. The program focuses on increasing the economic and financial well being of businesses, communities, and families.

The Community Development Economics and Commerce faculty plans to conduct research and provide educational assistance to help elected officials and rural communities with the public-decision making process, and identify and implement new rural and community economic development strategies.

To enhance the rural economic setting of businesses, communities, and families the Community Economic and Commerce program offers educational and technical assistance to encourage economic diversification through entrepreneurship, small business and value-added development. The program also provides the only in-state program that focuses exclusively on helping Arkansas businesses sell products and services to public agencies, and helps public agencies meet their diversity goals.

The Agricultural and Agribusiness Economics and Commerce program will educate farmers, marketers, consumers, policy makers and others through research. The research will improve the economic well-being of those associated with production and consumption by seeking efficient and equitable solutions to agricultural production, finance, environmental, marketing and management, trade and policy issues.

Research will address the dynamic changes facing Arkansas food and agricultural industry. Plans are to assist producers in developing and maintaining successful agricultural enterprises, taking advantage of consumer driven markets, understanding the implications of public policy and discovering new farm and non-farm economic opportunities.

Projects will focus on: economic evaluation of new technologies and products; analysis of government policies including trade, environmental, farm and macroeconomic policies; assessment of financial markets and their implications for credit availability for agriculture; and the study and evaluation of changes in the structure of Arkansas agriculture.

The Individual and Family Economics and Commerce programs key focus is helping people incorporate sound financial management strategies into their daily lives. The program will help Arkansans learn to effectively manage their resources to achieve financial security. County Family and Consumer Sciences agents are trained to disseminate financial management information. Resource management programs teach youth and adults financial literacy concepts, skills and practices. Arkansas families who learn financial management skills can lay the foundation for a secure financial future and gain increased economic opportunities.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	15%		30%	
602	Business Management, Finance, and Taxation	10%		20%	
603	Market Economics	5%		10%	
604	Marketing and Distribution Practices	5%		5%	
605	Natural Resource and Environmental Economics	5%		10%	
606	International Trade and Development	5%		5%	
608	Community Resource Planning and Development	25%		5%	
610	Domestic Policy Analysis	15%		10%	
611	Foreign Policy and Programs	0%		5%	
801	Individual and Family Resource Management	5%		0%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	5%		0%	
805	Community Institutions, Health, and Social Services	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

To maintain a highly competitive agricultural production system, the U.S. and the state of Arkansas must ensure that firms operating in the industry are economically viable and efficient. One way to increase global competitiveness is through the development and adoption of new technology and product marketing. However in addition to new technologies, changes in government policies and general fluctuations in economic conditions will also affect economic performance and global competitiveness. There is a need not only for developing and evaluating new technologies that enhance competitiveness, but also for an extension of the knowledge base of all factors that influence the industry's competitive position in global markets.

Achieving goals of global competitiveness cannot rely solely on the development and adoption of new production technologies. A complete understanding of all-important factors will be necessary to be successful.

Factors affecting the global competitiveness of the U.S. agricultural production system include:

Firm management decisions,

Macroeconomic, environmental, farm and trade policies,

Financial markets,

Domestic and international supply and demand conditions,

Industry structure and organization, and the

Development and adoption of new technologies.

Arkansas agricultural producers continue to face volatile prices due in part to natural disasters, fluctuating energy prices and the uncertainty of the global marketplace. For example, the emerging biofuels industry is impacting many aspects of Arkansas agriculture and rural communities. These uncertainties require Arkansans to have a better understanding of sound financial management practices.

There are distinct economic differences between rural and urban areas of the state. As urban areas face unprecedented growth, rural communities and families in Arkansas are struggling. Despite a strong agricultural economic base, off-farm employment is a critical source of income for the majority of farm families. More than a third of the counties in Arkansas depend on manufacturing employment. However, manufacturing continues to downsize and relocate to places where the costs of production are lower. As a result of these trends, many rural counties are faced with shrinking tax bases, higher tax rates and high unemployment creating financial distress. Economic diversification and community development are critical to the sustainability of rural areas.

Arkansas has the ninth highest poverty rate (16 percent) in the country. Seventeen Arkansas counties are designated as "persistent poverty" counties, where more than 20 percent of their people have lived in poverty for 30 years or more (Rural Family Profile of Arkansas, 2007, UA Division of Agriculture). Personal savings rates are less than 1 percent (Bureau of Economic Analysis). These challenges suggest a need for education in resource management and improved financial literacy among Arkansas families.

2. Scope of the Program

- Multistate Research
- Integrated Research and Extension
- In-State Research
- Multistate Integrated Research and Extension
- Multistate Extension
- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Strong interactions with leadership from promotion boards, farm organizations, recognized progressive farmers, consumers, industry and public representatives have identified the priority areas addressed by the program.

The basic premise of Extension Family Resource Management educational programs is that through the programs, citizens will increase knowledge and skills. The knowledge and skills will lead to behavior change and the consumer will begin to use recommended financial management techniques. Then, the use of recommended financial management techniques will lead to increased financial security.

Rural communities are willing to invest resources to building community capacity for economic development and identifying and implementing appropriate economic development strategies.

2. Ultimate goal(s) of this Program

- Identify and assist in the adoption of new technologies and practices that enhance profitability and manage risk.
- Broaden the understanding of linkages among policy, socioeconomic conditions, market conditions, industry structure, and system competitiveness.
- Investigate and address concerns as they emerge.
- Position policy decision makers at all levels to understand and use the policy tools important to community, regional, and statewide economic viability.
- Continue to support strategic partnerships that create value-added benefits for Arkansas' environment and its people.
- Help Arkansas to achieve high degree of competitiveness in a global economy.
- Increase family financial security by providing family resource management training for youth and adults.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	30.0	0.0	8.4	0.0
2010	30.0	0.0	8.4	0.0
2011	30.0	0.0	8.4	0.0
2012	30.0	0.0	8.4	0.0
2013	30.0	0.0	8.4	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct research and facilitate the development and adoption of new technologies and products that will enhance global competitiveness
- Conduct economic and policy research and evaluations that may increase economic efficiencies and improve socioeconomic conditions.
- Create and distribute educational products and materials using print and electronic mediums.
- Develop and conduct educational meetings
- Provide professional services to clientele

- Develop, evaluate, and disseminate education programs and curricula, incorporating new research.
- Develop county and economic profiles for educational purposes.
- Convene issue forums for both internal and external audiences

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
● Other 2 (Professional presentations) ● One-on-One Intervention ● Group Discussion ● Other 1 (Service participation) ● Education Class ● Demonstrations ● Workshop	● Web sites ● Other 2 (Publish scientific articles) ● Other 1 (Train students and volunteers) ● TV Media Programs ● Newsletters ● Public Service Announcement

3. Description of targeted audience

Producers - Small, large, limited resource, retirement, other

Businesses - Industry, small, large, rural, urban, consultants, other

Consumers - Limited resource, families, retired, youth, middle age, other

Elected Officials – city, county, state, and federal

Organizations - Civic, community, producer, consumer, nonprofit and other

Government Personnel - Public agencies and administrators, other

Voters

Research, Extension and teaching professionals

Other

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	16000	102000	1500	100
2010	16000	104300	1500	400
2011	16000	105400	1500	600
2012	16000	106100	1500	700
2013	16000	107000	1500	800

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

Expected Patent Applications

2009 :0 **2010 :**0 **2011 :** 0 **2012 :** 0 **2013 :** 0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	20	10	30
2010	20	15	35
2011	20	10	30
2012	20	15	35
2013	20	10	30

V(H). State Defined Outputs

1. Output Target

- Number of educational products and materials developed or updated for print, electronic media, radio, podcasts, or display.

  2009 :320 **2010 :**320 **2011 :**320 **2012 :**320 **2013 :**320

- Number of scientific publications.

  2009 :14 **2010 :**14 **2011 :**14 **2012 :**14 **2013 :**14

- Number of graduate students completing degrees.

  2009 :10 **2010 :**10 **2011 :**10 **2012 :**10 **2013 :**10

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of participants who increase knowledge, understanding, awareness, and/or application skills of economics and commerce.
2	Number of participants who indicate a change in behavior or act upon or plan to act upon what they've learned about economics and commerce
3	Number of non-business bankruptcy filers in Arkansas
4	Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Cash Farm Receipts (in thousand dollars) (NASS)
5	Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Net Farm Incomes (in thousand dollars) (ERS)
6	Number of jobs created or retained through educational programs
7	Dollars of revenue generated by businesses as a result of educational programs

Outcome #1

1. Outcome Target

Number of participants who increase knowledge, understanding, awareness, and/or application skills of economics and commerce.

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :34329	**2010 :** 34673	**2011 :** 35020	**2012** :35370	**2013 :**35375

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 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
- 608 - Community Resource Planning and Development
- 610 - Domestic Policy Analysis
- 611 - Foreign Policy and Programs
- 801 - Individual and Family Resource Management
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

Outcome #2

1. Outcome Target

Number of participants who indicate a change in behavior or act upon or plan to act upon what they've learned about economics and commerce

2. Outcome Type : Change in Action Outcome Measure

2009 :3000	**2010 :** 3000	**2011 :** 3000	**2012** :3000	**2013 :**3000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 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

- 608 - Community Resource Planning and Development
- 610 - Domestic Policy Analysis
- 611 - Foreign Policy and Programs
- 801 - Individual and Family Resource Management
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

Outcome #3

1. Outcome Target

Number of non-business bankruptcy filers in Arkansas

2. Outcome Type : Change in Condition Outcome Measure

2009 : 23031 **2010 :** 23000 **2011 :** 22101 **2012 :** 22050 **2013 :** 22050

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

Outcome #4

1. Outcome Target

Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Cash Farm Receipts (in thousand dollars) (NASS)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 6100543 **2010 :** 6152234 **2011 :** 6225234 **2012 :** 6350412 **2013 :** 6360000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 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
- 610 - Domestic Policy Analysis
- 611 - Foreign Policy and Programs

Outcome #5

1. Outcome Target

Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Net Farm Incomes (in thousand dollars) (ERS)

2. Outcome Type : Change in Condition Outcome Measure

2009 2160253	**2010 :** 2225325	**2011 :** 2350621	**2012** 2351258	**2013 :** 2351300

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 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
- 610 - Domestic Policy Analysis
- 611 - Foreign Policy and Programs

Outcome #6

1. Outcome Target

Number of jobs created or retained through educational programs

2. Outcome Type : Change in Condition Outcome Measure

2009 3000	**2010 :** 3000	**2011 :** 3000	**2012** 3000	**2013 :** 3000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

Outcome #7

1. Outcome Target

Dollars of revenue generated by businesses as a result of educational programs

2. Outcome Type : Change in Condition Outcome Measure

2009 75000000	**2010 :** 75000000	**2011 :** 75000000	**2012** 75000000	**2013 :** 75000000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Government Regulations
- Competing Programmatic Challenges
- Other (Interstate Policy Issues)
- Populations changes (immigration,new cultural groupings,etc.)
- Natural Disasters (drought,weather extremes,etc.)
- Competing Public priorities
- Public Policy changes
- Appropriations changes

Description

The economy can have a distinct impact on family resource management programs. Typically, in the event of difficult times, we expect more consumers will attend financial education programs. Likewise, in the event of stronger economic times, we may expect fewer consumers to be focused on the need to learn financial management skills.

Natural disasters have the capacity to interrupt the thrust of Extension programming. In the event of an extreme natural disaster, programs and resources may be redirected to accommodate emergency needs of citizens.

The number of ballot issues put before registered voters can complicate the resulting education program. The state's changing demographics necessitates changing the education program to serve a multi-lingual society.

International and domestic policy and trade issues may emerge that are un-anticipated. Interstate policy issues may also be an external factor to consider.

In times of disasters and critical needs by government agencies the Arkansas Procurement Assistance Center (APAC) assists agencies in locating vendors that can deliver parts, materials, and services. Also, APAC trains companies in disaster planning in serving and supplying public agencies during and after a disaster.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Retrospective (post program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Case Study
- During (during program)
- After Only (post program)

Description

Community and Economic Development has a relationship with the University of Arkansas Survey Research Center that provides the opportunity for longitudinal analysis of educational program effectiveness. Comprehensive departmental and programmatic evaluations for research, extension, and teaching programs are conducted on a five to seven year cycle. We systematically use a post-program evaluation to assess clientele knowledge and program effectiveness.

2. Data Collection Methods

- Tests
- Whole population
- Unstructured
- Case Study
- Structured
- Telephone
- On-Site
- Other (Web Based)
- Sampling
- Mail
- Observation

Description

We collect data from a sample of program participants who complete educational programs. Contacts are surveyed by mail, on-site, online and in-person to determine impact of programs. Certain program participants are required to successfully complete a post program certification test. We have standing extension advisory councils in each of 75 counties. We have formalized external advisory councils that serve specific programs. We have ad hoc special interest groups that convene for the purpose of guiding issue-based education.

V(A). Planned Program (Summary)

Program #6

1. Name of the Planned Program

Food, Nutrition & Health

2. Brief summary about Planned Program

Five of the ten leading causes of death in the U.S. have been linked to diet and nutrition as contributing factors. Poor diet and obesity remain as common problems especially among under-served populations. The Extension Food, Nutrition & Health programs have four components: 1) participation in regular physical activity, 2) adoption and maintenance of healthy lifestyles, 3) chronic disease prevention; and 4) nutrition education. The health program identifies and promotes evidence-based policies and practices that will reduce the incidence of chronic disease. Using science-based information, Arkansans are engaged in programs such as Walk Across Arkansas, Strong Women and the Medicine Cabinet Series to prevent chronic disease and promote healthy lifestyles and increased physical activity. The nutrition education program responds to the nutritional issues and needs of Arkansans across the lifespan and socioeconomic spectrum. Participants gain knowledge and skills that will help them adopt appropriate behaviors to prevent or delay lifestyle-related chronic diseases. Children and adults with limited resources learn healthy eating and activity practices through the Food Stamp Nutrition Education and Expanded Food and Nutrition Education Programs. Adult Arkansans interested in achieving and/or maintaining healthy weight are targeted with the 15-week Reshape Yourself program and the Right Bite cooking school. African American and Hispanic Arkansans learn healthy eating and activity practices through participation in the Eating and Moving for Life program.

Like never before, biotechnology and an improved understanding of food constituents that improve human health and nutrition will make possible the development of food products with improved nutritional value. Advances in knowledge of human nutrition can be rapidly utilized to produce improved food products. Nutritionists must be linked to multi-disciplinary teams of food scientists, biotechnologists and medical experts to address this need.

Given the importance of the food production and processing industry to the economy of Arkansas, a strong research and extension base in Food Science and Nutrition is of paramount importance. Food safety issues associated with the poultry industry and other food processing firms are also of high priority to the Division of Agriculture. The implementation of HACCP and related food safety programs significantly increases the need for research-based information. The Center for Food Safety provides scientists and research infrastructure which are major resources where food safety research can be addressed from the producer through processing and product preparation. The Division of Agriculture's Institute of Food Science and Engineering was created to focus multi-disciplinary research on food issues. This Institute draws on expertise in microbiology, food science, processing, nutrition,engineering, sensory analysis, and other disciplines; bringing together corporate partners and faculty members with the appropriate research expertise to address research problems of immediate need to the industry.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
403	Waste Disposal, Recycling, and Reuse	0%		5%	
501	New and Improved Food Processing Technologies	0%		25%	
502	New and Improved Food Products	2%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	2%		5%	
504	Home and Commercial Food Service	1%		5%	
701	Nutrient Composition of Food	0%		10%	
702	Requirements and Function of Nutrients and Other Food Components	10%		10%	
703	Nutrition Education and Behavior	30%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%		25%	
724	Healthy Lifestyle	20%		0%	
806	Youth Development	15%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Nationally, Arkansas ranks first in stroke mortality, eighth in mortality due to heart disease and ninth in overall cancer mortality. Sixty-four percent of adults are overweight or obese and 38 percent of children in grades K-12 are overweight or at risk for becoming overweight. Lifestyles are directly related to these diseases. Only about half of Arkansas' adults and youth get the recommended amount of daily moderate physical activity, and one-fourth of adults smoke. Unhealthy lifestyles, including poor diet, physical inactivity, smoking and substance abuse, cost Arkansas taxpayers hundreds of millions of dollars each year in health care costs and lost productivity. Lifestyle changes can prevent at least 20 percent of annual deaths from heart disease, cancer, stroke and diabetes while lowering lifetime medical costs. Almost fifteen percent of all Arkansas households are food insecure. Research has shown the importance of nutrition to the developing brain and learning capability of children. When food and nutrients are chronically inadequate, hunger leads to high medical, educational, psychological, economic, and social costs.

The Division of Agriculture research goals for the Food, Nutrition and Health program are achieved through discovery and developmental research in Food Science, Food Safety and human nutrition. The Division's extension goals for Food, Nutrition and Health are achieved through a partnership with Extension 1890, county and state educational programs such as demonstrations, applied research, education booths, presentations, publications, newsletters, web pages, in-service training of county faculty, and news releases. Through consumer education on nutrition and the preparation and selection of more nutritious foods, Cooperative Extension faculty and staff enable Arkansans to make health-promoting choices. The success of our food safety programs is due to our Extension/Research integration and proximity of Extension and Experiment Station faculty/staff who work on new processing ingredients and technologies which are disseminated in Extension workshops, newsletters, roundtables, etc. The monthly HACCP Roundtable serves not only state companies but is regional in scope and serves as a model at the national level as an example of food companies cooperating along with USDA to address food safety issues.

Food production and processing is a large business in Arkansas. Approximately 25% of all manufacturing in Arkansas is food processing, representing an $11 billion per year business. There are 232 food processing establishments in Arkansas directly employing over 55,000 people. The Centers for Disease Control has estimated that 76 million persons in the United States are affected by food borne illness. The costs for persons infected include those associated with health care for afflicted individuals, costs related to caring for those who are ill, absenteeism from work and school, as well as travel costs to seek medical care.

2. Scope of the Program

- In-State Extension
- Multistate Extension
- Integrated Research and Extension
- Multistate Research
- Multistate Integrated Research and Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Our Extension education process is a straight-forward approach to Arkansas health issues. Arkansans will choose to be active participants in the decisions that affect their health to remain active and healthy. Evidence-based education can enable rural individuals and families to better maintain healthy lifestyles and manage physical health. Nutrition education is based on the belief that: 1) Participants have access to and consume specific foods, 2) Targeted audiences are willing and able to participate in nutrition education programs, 3) Knowledge change can lead to behavior change and 4) People will be motivated to learn/change.One in five Arkansans is without health insurance coverage. Lack of health care professionals and facilities in rural Arkansas limit access to quality health care.

The majority of the food safety programs is nationally- or state-mandated programs such as the Better Process Control School and the ServSafe program, respectively or is at the request of food processing companies and entrepreneurs in Arkansas. Since the programs are clientele-driven, it is believed that they represent the concerns and needs of the food processing industry. Similarly, they will continue to be important, and this concern will be reflected in the attendance and participation of the food manufacturing companies. It is also assumed that the Experiment Station scientists will continue to secure grant funding to assist in developing new information and technologies and to assist the delivery of outreach programs. Finally, it is assumed that by working with food scientists and agricultural economists, entrepreneurs will continue to be identified and assisted to ultimately establish more successful food-processing and food-related businesses.

2. Ultimate goal(s) of this Program

▪ Educate and encourage individuals and families to adopt healthy behaviors and lifestyles that promote health and prevent disease thus increasing longevity and reducing health care costs.
▪ Reduce risk factors for lifestyle-related chronic diseases.
#9642; Reduce the incidence of food-borne illness and product recalls due to contaminations.
#9642; Improve the food processing/quality aspects of manufacturing to foster growth of food companies and entrepreneurs in Arkansas.
#9642; Improve the efficiency and competitiveness of Arkansas and U.S. food industries through improvements in food products, processing systems, and increased understanding and application of food science and food technology-based principles.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	86.8	0.0	22.9	0.0
2010	86.8	0.0	22.9	0.0
2011	86.8	0.0	22.9	0.0
2012	86.8	0.0	22.9	0.0
2013	86.8	0.0	22.9	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Health and Nutrition:

Division of Agriculture faculty will develop, evaluate, and disseminate education programs and curricula, incorporating new research and emphasizing healthy lifestyles. Programs Include but are not limited to:

Walk Across Arkansas (Adults and Youth)
Strong Women
ServSafe

Food Stamp Nutrition Education
Expanded Food and Nutrition Education Program
Reshape Yourself Healthy Weight Program

Commercial Food Safety & Processing:
Improve food processing efficiency through an improved understanding of food chemistry.
Determine the impact of food processing systems on product quality and food safety attributes.
Develop new food products that utilize Arkansas raw products.
Increase the research base on improved food processing systems to minimize food pathogens.
Improve detection systems for Listeria, Salmonella and other major food pathogens.
Identify health related nutritional factors that will improve human health.
Develop new food products that have improved nutritional content.
Conduct quarterly HACCP Roundtable meeting.
Conduct food safety workshops.
Conduct Better Process Control School.
Conduct Labeling workshop.
Conduct the ServSafe workshop.
Provide online distance education in food safety and manufacturing.
Conduct new product development workshop.
Provide assistance to small food companies and entrepreneurs in the form of services, nutritional labeling, and consulting.
Conduct culinology workshop for food technologist.
Conduct research.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Demonstrations • One-on-One Intervention • Workshop • Group Discussion • Education Class	• Newsletters • Other 1 (Grant Development) • Billboards • Web sites • Public Service Announcement

3. Description of targeted audience

Food Companies
Entrepreneurs and Restaurants
Food Service Employees and/or Food Handlers
Limited Resource Adults and Youth
Minority Adults
Youth, adults and senior adults
Employers & Employees
Child Care Providers
School personnel

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	56150	20000	60000	2000
2010	65000	30000	60000	2000
2011	70000	50000	85000	2000
2012	70000	75000	90000	2000
2013	80000	100000	100000	2000

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

Expected Patent Applications

2009 :1 **2010 :**0 **2011 :** 1 **2012 :**0 **2013 :**1

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	40	0	40
2010	40	0	40
2011	40	1	41
2012	40	0	40
2013	40	1	41

V(H). State Defined Outputs

1. Output Target

- # of grants written and funded in support of Food, Nutrition and Health programming and research

  2009 :10 **2010 :**12 **2011 :**14 **2012 :**16 **2013 :**18

- # of news articles, public service announcements, radio and TV media programs in support of Food, Nutrition and Health programs

  2009 :444 **2010 :**444 **2011 :**444 **2012 :**444 **2013 :**450

- # of participants in educational programs leading to certification for food handlers (ServSafe and Better Process Control School)

  2009 :600 **2010 :**600 **2011 :**600 **2012 :**600 **2013 :**600

- # of participants in quarterly HACCP roundtable

  2009 :30 **2010 :**30 **2011 :**30 **2012 :**30 **2013 :**30

- # of ServSafe classes offered

  2009 :20 **2010 :**20 **2011 :**20 **2012 :**20 **2013 :**20

- # of non-duplicated Food, Nutrition and Health 4-H Youth programs delivered

  2009 :275 **2010 :**275 **2011 :**275 **2012 :**275 **2013 :**275

- # of non-duplicated participants in Food, Nutrition, and Health 4-H Youth programs

  2009 :60000 **2010 :**60000 **2011 :**65000 **2012 :**70000 **2013 :**75000

- # of Food, Nutrition and Health in-service trainings conducted

  2009 :10 **2010 :**10 **2011 :**10 **2012 :**10 **2013 :**10

- # of Arkansas Commodity Board Grants

  2009 :5 **2010 :**5 **2011 :**5 **2012 :**5 **2013 :**5

- # of Federal grants and contracts

  2009 :7 **2010 :**8 **2011 :**9 **2012 :**9 **2013 :**9

- # of Food, Nutrition, and Health clientele contacts from education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational methods

  2009 :116150 **2010 :**117000 **2011 :**118000 **2012 :**119000 **2013 :**120000

- # of Food, Nutrition, and Health education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational events

  2009 :7825 **2010 :**7825 **2011 :**7825 **2012 :**7825 **2013 :**7825

- # of research projects conducted related to Food, Nutrition and Health-Experiment Station

  2009 :20 **2010 :**20 **2011 :**20 **2012 :**20 **2013 :**20

- # of food processing and safety laboratory services provided

  2009 30 **2010** 30 **2011** 30 **2012** 30 **2013** 30

- # of extension educators involved in discussions regarding public and organizational nutrition and health policies, regulations and industry practices.

  2009 15 **2010** 20 **2011** 25 **2012** 25 **2013** 25

V(I). State Defined Outcome

O. No	Outcome Name
1	# of participants who indicated that they increased their knowledge related to food, nutrition and health following an educational class, seminar or workshop
2	# of participants receiving certification in Better Process Control School, Culinary Scientists and ServSafe
3	# of 4-H journals completed in Food, Nutrition and Health
4	# of individuals who increased physical activities as a result of completing an Extension program
5	# of nutritional labels developed
6	# of Journal articles accepted
7	# of participants who adopted positive nutrition practices.
8	# of participants reporting reduction in body weight after completing a nutrition education program
9	# of participants reporting reduction in blood pressure after completing a nutrition education program
10	# of participants reporting a reduction in blood cholesterol after completing a nutrition education program
11	# of participants reporting a reduction in blood glucose after completing a nutrition education program
12	# of new food businesses started
13	# of participants who indicate that they intend to adopt one or more healthy food/nutrition practices
14	# of culinary participants sampled by survey that reported actual practice change as a result of the workshop within 2 years
15	# of small and very small meat and poultry plants that successfully completed an Action Plan developed in consultation with the University of Arkansas after a USDA-FSIS Food Safety Assessment

Outcome #1

1. Outcome Target

# of participants who indicated that they increased their knowledge related to food, nutrition and health following an educational class, seminar or workshop

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
18000	19000	20000	20000	20000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service
- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

Outcome #2

1. Outcome Target

# of participants receiving certification in Better Process Control School, Culinary Scientists and ServSafe

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
675	675	675	675	700

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

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

Outcome #3

1. Outcome Target

# of 4-H journals completed in Food, Nutrition and Health

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
200	200	200	200	200

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 806 - Youth Development

Outcome #4

1. Outcome Target

# of individuals who increased physical activities as a result of completing an Extension program

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1000	1100	1200	1300	1400

3. Associated Institute Type(s)

- 1862 Extension

4. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle

Outcome #5

1. Outcome Target

# of nutritional labels developed

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
120	120	120	120	120

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 503 - Quality Maintenance in Storing and Marketing Food Products

Outcome #6

1. Outcome Target

# of Journal articles accepted

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
40	40	41	40	41

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #7

1. Outcome Target

# of participants who adopted positive nutrition practices.

2. Outcome Type : Change in Action Outcome Measure

2009	2010	2011	2012	2013
1300	1400	1500	1600	1700

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

Outcome #8

1. Outcome Target

# of participants reporting reduction in body weight after completing a nutrition education program

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
170	170	170	170	200

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

Outcome #9

1. Outcome Target

# of participants reporting reduction in blood pressure after completing a nutrition education program

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
68	70	70	70	80

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

Outcome #10

1. Outcome Target

# of participants reporting a reduction in blood cholesterol after completing a nutrition education program

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
40	40	40	40	50

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

- 724 - Healthy Lifestyle

Outcome #11

1. Outcome Target

# of participants reporting a reduction in blood glucose after completing a nutrition education program

2. Outcome Type : Change in Condition Outcome Measure

2009 : 50	**2010 :** 50	**2011 :** 50	**2012 :** 50	**2013 :** 60

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

Outcome #12

1. Outcome Target

# of new food businesses started

2. Outcome Type : Change in Action Outcome Measure

2009 : 9	**2010 :** 9	**2011 :** 9	**2012 :** 9	**2013 :** 9

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 504 - Home and Commercial Food Service

Outcome #13

1. Outcome Target

# of participants who indicate that they intend to adopt one or more healthy food/nutrition practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 10000	**2010 :** 10000	**2011 :** 10000	**2012 :** 10000	**2013 :** 10000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

Outcome #14

1. Outcome Target

# of culinary participants sampled by survey that reported actual practice change as a result of the workshop within 2 years

2. Outcome Type : Change in Action Outcome Measure

2009	2010	2011	2012	2013
35	35	35	35	35

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 504 - Home and Commercial Food Service

Outcome #15

1. Outcome Target

# of small and very small meat and poultry plants that successfully completed an Action Plan developed in consultation with the University of Arkansas after a USDA-FSIS Food Safety Assessment

2. Outcome Type : Change in Condition Outcome Measure

2009	2010	2011	2012	2013
6	6	7	8	8

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Appropriations changes
- Competing Programmatic Challenges
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Competing Public priorities
- Economy

Description

The University of Arkansas Division of Agriculture is positioned to respond proactively through educational activities to policy, regulatory, economic and demographic changes that affect the quality of life for Arkansans and assist food processors to improve their economic position.

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

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Retrospective (post program)
- Case Study

Description

Some educators will utilize pre- and post-tests, and some will use retrospective post-tests, depending on their program and target audiences. Case studies will be utilized for evaluation of enviromental and systematic long-term program outcomes.Assessment tools will be utilized during the program to evaluate knowledge gain and an intent to change behavior.

2. Data Collection Methods

- Sampling
- Tests
- Mail
- Other (Self-reported data & sec. data)
- Whole population
- Observation
- On-Site
- Unstructured

Description

This evaluation plan will be implemented during the five-year plan of work. Health outcome data such as improved fitness, strength, weight,blood pressure, cholesterol and glucose will be collected through targeted samples of persons completing nutrition education programs.

V(A). Planned Program (Summary)

Program #7

1. Name of the Planned Program

Natural Resources & Environment

2. Brief summary about Planned Program

Planned programs in the Division of Agriculture will continue to focus on the primary problems of forest productivity, forest health, soil health, water quality and quantity, and animal waste management. Multi-disciplinary research teams will be utilized to address these complex environmental problems. Strong linkages are needed with state agencies and policymakers to provide the necessary research base to address complex natural resource issues. Industry-university coalitions must address environmental issues along with special interest groups and under-served populations.

In response to new State and Federal (CAFO) regulatory guidelines, the UACES has developed a certification training program for nutrient management planners and nutrient applicators. The UACES has been involved in developing a risk assessment tool for reducing Phosphorus loss to streams in Poultry producing areas as part of a lawsuit settlement. On the voluntary front, the UACES is developing a program with the goal of assistingagricultural producers and landowners with integrating environmental goals and regulations as part of farm planning. It will also promote a more integrated approach to on-farm natural resource management to include forestry, wildlife, and ecological sustainability as part of the planning process.

As environmental and natural resource concerns shift, so will our educational efforts.

Forest Resource Management has been a long lasting program of the UA Division of Agriculture. Workshops, short courses, meetings, publications, and field days will continue as touchstones of the program. As access to technology expands the program can be delivered via the web, satellite, and other electronic media. The county agents located in each county of the State are central to the program as well. County agents develop and deliver forestry meetings, workshops, and field days focused on issues important to their local clientele and leadership. State Extension faculty will continue to work closely with county level programs as well as with stakeholders at the State level including the Arkansas Forestry Commission, the Arkansas Forestry Association, the Arkansas Game & Fish Commission, and other key natural resource groups to deliver the program and make key changes when new unforeseen issues arise. Extension program and research efforts in the forest resource management program area are implemented through the Arkansas Forest Resources Center. The goal of the Forest Resource Management program, through the Arkansas Forest Resources Center, is to develop and deliver programs in research & extension that enhance and insure the sustainability of forest-based natural resources. The program therefore, is broadly defined to include a vast array of topics, issues, and strategies aimed at promoting the sustainable and wise use of Arkansas' forest resources.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	5%		5%	
102	Soil, Plant, Water, Nutrient Relationships	5%		5%	
111	Conservation and Efficient Use of Water	10%		10%	
112	Watershed Protection and Management	15%		15%	
122	Management and Control of Forest and Range Fires	5%		5%	
123	Management and Sustainability of Forest Resources	25%		25%	
124	Urban Forestry	5%		5%	
133	Pollution Prevention and Mitigation	10%		10%	
135	Aquatic and Terrestrial Wildlife	15%		15%	
605	Natural Resource and Environmental Economics	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

As the Natural State, Arkansas has abundant natural resources which are important tothe state's economy. More than 50% of the state's land area remains forested.These forests provides mutliple benefits including forest products, outdoor recreation, wildlife habitat, watershed protection, and scenic beauty for Arkansans.Development of crop and animal production systems that minimize the impact on the land and water resources of the state remains a high priority.

Soil and water resources in our richest agricultural areas are degrading over time requiring increased inputs to maintain maximum productivity. Salinity and pH of some delta soils have increased due to irrigation with water of poor quality and soil organic matter content has declined due to excessive tillage. A number of Arkansas counties have been designated as critical water use areas including our most productive rice producing areas.

The size of our poultry industry has created animal waste issues that must be addressed to protect our water resources. In some areas litter production exceeds available pasture land for use as a fertilizer. Although poultry litter makes a valuable soil amendment, litter production occurs in areas distant from row crop areas that would benefit from use of the litter. Although

research is addressing short term mitigation strategies, a long term approach remains an elusive goal if we are to address these issues in a comprehensive manner in partnership with state regulatory agencies and policymakers.

Excess nutrients in Northwest Arkansas - Arkansas Acts 1059 and 1061 of 2003 identifies nutrient sensitive areas in the state, designates them as Nutrient Surplus Areas, and requires all nutrient applications (whether manure or commercial fertilizer, or agricultural or residential) to be done according to a nutrient management plan or an approved protective use rate.

Although the forest products industry is one of the largest industries in the State, most of the forest land is owned by non-industrial private forest or family forest landowners. Forest sustainability, forest health, urban encroachment, loss of biodiversity, watershed protection and conservation are issues that serve as a counter-point to forest resource production.

One new issue is the development of alternative energy sources including biomass protection from forests. Although research into bio-fuel production is on going, key questions remain unanswered. As people move to the outlying areas previously managed as working forests, some negative impacts can result including increased risk from wildfire, loss of habitat, loss of biodiversity, and significant changes in ownership patterns, and even changes to vital watershed functions. Although fire protection and the National FireWise programs are active in the state, more research in the wildland-urban interface arena is needed.

2. Scope of the Program

- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Natural Resources & Environment:

The University of Arkansas, Division of Agriculture will continue to have strong relationships among state and federal natural resource agencies - Evidence: The Division of Agriculture is involved in several formal partnerships such as the Arkansas Conservation Partnership; The Division helps support a Regional Extension liaison to EPA. The University of Arkansas, Division of Agriculture will continue to be well connected to Regional (multi-state) water quality efforts – Evidence: The UA-CES continues to participate to the Southern Regional CSREES project. The University of Arkansas, Division of Agriculture provides solutions to natural resource and environmental concerns through the integrated missions of research, education, and Extension outreach - Evidence: The formation and functioning of the UA Environmental Task Force that meets monthly to quarterly to ensure this integrated approach. The UA-Division of Agriculture will continue to seek financial support in our effort to address the key issues mentioned above - Evidence: During the past 5 years the UA-CES has received over 3.5 million dollars in outside funding. The UA-CES will continue to produce timely educational products - Evidence: The UA-CES led a multi state and federal agency effort to develop the Arkansas Nutrient Management Planning Guide and the Arkansas Nutrient Applicator Guide to help citizens comply with new State nutrient management and application laws.

Forestry:

The University of Arkansas, Division of Agriculture will continue to have strong relationships among state and federal natural resource agencies - Evidence: The Division of Agriculture works with numerous State and Federal Natural Resource Agencies including the Arkansas Forestry Commission and the US Forest Service. The University of Arkansas, Division of Agriculture provides solutions to forest resource management concerns through the integrated missions of research, education, and extension outreach .The UA-CES will continue to produce timely educational products.

2. Ultimate goal(s) of this Program

Natural Resources & Environment:

Public understanding and support for water resource development and quality protection on a regional and/or watershed basis

Economical and abundant sources of water for sustaining the lives and economic well-being of Arkansas citizens

Continued collection of scientifically defensible data for the analysis of the water quality and quantity circumstance across Arkansas

Development of technologies that provide cost effective alternatives for protecting water quality and increasing water use efficiency

An environmentally defensible state water development and protection strategy for use of the state’s water resources, based primarily in a voluntary and incentive driven approach

Water use and quality regulations that protect the resource while not adding a significant financial burden to Arkansas families, business, and industry

An expanded financial capacity to assist local governments and development authorities in building the needed infrastructure to protect water quality and deliver safe drinking water to the consuming public

Interstate communication and cooperation that produces tangible benefits for the cooperating partners in the protection of water quality and supplies

Continued research and public education regarding major sources of water quality degradation and alternative protection strategies

Forest Resources Management Program:

Family forest landowners will understand both the timber and non-timber value of their forest resources. Forest landowners will be equipped to make better-informed decisions concerning the conservation, management, and marketing of their forest resources.

Professional foresters will have the necessary qualifications to attain and retain certification thereby better serving forest landowners of Arkansas.

Youth and adults will understand forest resource management including managing resources in the urban interface.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	14.9	0.0	21.7	0.0
2010	14.9	0.0	21.7	0.0
2011	14.9	0.0	21.7	0.0
2012	14.9	0.0	21.7	0.0
2013	14.9	0.0	21.7	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

4-H Rice for Ducks programs
Arkansas Acres for Wildlife program
Develop educational materials, curriculum, & resources
Geographic Information Systems (GIS) and Geographic Positioning Systems (GPS) training
Site visits, one-on-one consultations
Workshops
Field Days
Farm Visits
Demonstrations
Educational Meetings
News-articles
Newsletter
Web-based Education
Continuing Education

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Demonstrations • Education Class • Group Discussion • One-on-One Intervention • Workshop	• Public Service Announcement • Web sites • TV Media Programs • Newsletters

3. Description of targeted audience

4-H Club Youth
Agri Business
Row Crop Agricultural Producer Organizations
Row Crop Agricultural Producers
Certified Crop Advisors
Conservation District Directors
Consultants
Forest Landowner Groups
Forest Industry
Loggers
Natural Resource Professionals
Landowners
Homeowners
Educators
State & Federal Agency personnel
Watershed Organizations
Wildlife Organizations
Private nutrient applicator
Commercial nutrient applicator
Livestock producers
Livestock industry personnel
Livestock producer organizations
General public
Researchers
Policy makers
Youth
Extension faculty & staff
Teaching faculty
Research funding personnel and agencies

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	5000	5000	2500	2500
2010	5000	5000	2500	2500
2011	5000	5000	2500	2500
2012	5000	5000	2500	2500
2013	5000	5000	2500	2500

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

Expected Patent Applications

2009 :0 **2010 :**0 **2011 :** 0 **2012 :** 0 **2013 :** 0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	12	7	19
2010	13	7	21
2011	14	8	22
2012	14	9	23
2013	14	9	23

V(H). State Defined Outputs

1. Output Target

- Number of programs held for professional natural resource managers

  2009 20 **2010** 20 **2011** :20 **2012** 20 **2013** 20

- Number of Natural Resource Educational Meetings conducted for landowners/public

  2009 45 **2010** 50 **2011** :60 **2012** 65 **2013** 65

- Number of Natural Resource Field Demonstrations

  2009 30 **2010** 30 **2011** :35 **2012** 35 **2013** 35

- Number of Natural Resource Field Days

  2009 :10 **2010** 10 **2011** :10 **2012** :11 **2013** :12

- Total Number of Natural Resources contacts through all programs and activities

  2009 8000 **2010** 8000 **2011** :8000 **2012** 8000 **2013** 8000

- Total Number of Natural Resources programs and events

  2009 :117 **2010** 120 **2011** :127 **2012** :127 **2013** :130

- Number of Acres enrolled in Arkansas Acres for Wildlife

2009 :1700200 **2010** :1700400 **2011** :1700500 **2012** :1700600 **2013** :1700700

- Number of Educational Materials & Curriculum developed and/or delivered

2009 :10 **2010** :10 **2011** :12 **2012** :12 **2013** :13

- Number of Natural Resource Newsletters

2009 :2 **2010** :2 **2011** :4 **2012** :4 **2013** :4

- Web-Based Education: Number of web modules, sites

2009 :3 **2010** :3 **2011** :4 **2012** :4 **2013** :4

- Number of education programs on urban stormwater management

2009 :40 **2010** :40 **2011** :40 **2012** :40 **2013** :40

- Number of participants in urban stormwater management programs

2009 :500 **2010** :500 **2011** :500 **2012** :500 **2013** :500

- Number of natural resources/environmental events for row crop producers

2009 :20 **2010** :20 **2011** :20 **2012** :20 **2013** :20

- Number of natural resources/environmental events for livestock producers

2009 :20 **2010** :20 **2011** :20 **2012** :20 **2013** :20

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of landowners indicating an increased understanding of natural resource management
2	Number of acres impacted by Natural Resources & Environmental educational efforts (including Acres for Wildlife)
3	Number of clientele who adopt Best Management Practices in Natural Resource management that protect and enhance water quality
4	Number of Landowners who adopt wildlife management practices that enhance wildlife habitat or prevent & control wildlife damage to property
5	Number of registered foresters maintaining CFEs
6	Number of participants indicating an increased understanding of stormwater issues

Outcome #1

1. Outcome Target

Number of landowners indicating an increased understanding of natural resource management

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 400	**2010 :** 450	**2011 :** 500	**2012 :** 500	**2013 :** 500

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

Outcome #2

1. Outcome Target

Number of acres impacted by Natural Resources & Environmental educational efforts (including Acres for Wildlife)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 1054000	**2010 :** 1066000	**2011 :** 1070000	**2012 :** 1070500	**2013 :** 1070600

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

- 605 - Natural Resource and Environmental Economics

Outcome #3

1. Outcome Target

Number of clientele who adopt Best Management Practices in Natural Resource management that protect and enhance water quality

2. Outcome Type : Change in Action Outcome Measure

2009 : 250 **2010 :** 300 **2011 :** 350 **2012 :** 400 **2013 :** 400

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

Outcome #4

1. Outcome Target

Number of Landowners who adopt wildlife management practices that enhance wildlife habitat or prevent & control wildlife damage to property

2. Outcome Type : Change in Action Outcome Measure

2009 : 2000 **2010 :** 2100 **2011 :** 2110 **2012 :** 2200 **2013 :** 2300

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

Outcome #5

1. Outcome Target

Number of registered foresters maintaining CFEs

2. Outcome Type : Change in Action Outcome Measure

2009 600	**2010 :** 605	**2011 :** 610	**2012** 615	**2013 :** 620

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

Outcome #6

1. Outcome Target

Number of participants indicating an increased understanding of stormwater issues

2. Outcome Type : Change in Knowledge Outcome Measure

2009 250	**2010 :** 250	**2011 :** 300	**2012** 300	**2013 :** 300

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Competing Public priorities
- Competing Programmatic Challenges
- Natural Disasters (drought,weather extremes,etc.)
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Government Regulations

Description

Natural resources including forests, water, and wildlife are easily impacted by external forces beyond our control.Wildfires for example, impact all components of the ecosystem resulting in both short and long term effects.How these wildfires are managed, however, is influenced by public policy, agency capacity, and government regulations.Therefore each of the above external factors can influence both the direction and implementation of our Extension programs.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Description

Most of evaluation efforts focus on gathering as much input as possible from the audience attending the workshop, meeting, or field day.We may not have access to this audience again, therefore on-site evaluation methods work well.In other situations, for example dissemination of a fact sheet or guide, we have no direct contact with the individual and therefore limited opportunity to evaluate the effectiveness of the educational material.

2. Data Collection Methods

- Other (Web-based surveying)
- Sampling
- Whole population
- Mail
- On-Site
- Tests

Description

On-site data collection is the primary method that will be utilized to collect needs assessment and program evaluation data.Data will be collected prior to, during and following eductional programs for process and outcome evaluation.

V(A). Planned Program (Summary)

Program #8

1. Name of the Planned Program

Pest Management

2. Brief summary about Planned Program

Insect, weed and disease pests affect all the major agricultural commodities in Arkansas including row-crops (cotton, wheat, rice, soybeans and corn), livestock, poultry, fruit and vegetable crops, ornamental shrubs, trees, and turf. The loss of many traditional low cost animal and crop protection chemicals without replacement by effective alternatives limits available management options. The advent of new limitations to meet the requirements of the Food Quality Protection Act will limit crop protection options further. New discoveries from research on host plant resistance and pest biology continue to provide alternatives, but must be integrated into our crop and animal production systems. Significant work remains to be done to minimize losses from pests, diseases and weeds in all major animal and crop commodities of importance to Arkansas.

Integrated pest management (IPM) is an essential research and educational program that helps agricultural producers and homeowners control pests more efficiently and reduce their reliance on pesticides.Increasing concerns for producers and homeowners include pesticide drift, soil and water quality; pesticide resistance, and the utilization of Genetically Modified Organisms (GMO).

Although most of the destructive pests are endemic, an increasing numbers of problem species are finding their way to the United States from outside our borders. Adapting Division of Agriculture activities to cope with these threats is a primary consideration for planning future pest management research and extension efforts.

Continued use of pesticides can lead to resistance and overuse of pesticides, which can result in contamination of water supplies. Division of Agriculture research scientists and Extension faculty conduct research and train county agents on the latest pest management research. Pest management and pesticide applicator training is then conducted statewide each year by county agents and faculty through various means to inform producers and homeowners about recommended effective and environmentally friendly chemical and non-chemical research based pest management and pesticide use practices.

The human IPM program focuses on the management of insect pests that impact humans, and has resulted in considerable benefit to the citizens of the state. These insect pests pose both direct and indirect threats to human health and well-being, as well as having the potential to adversely impact the value of property.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	30%		30%	
312	External Parasites and Pests of Animals	20%		20%	
403	Waste Disposal, Recycling, and Reuse	5%		5%	
721	Insects and Other Pests Affecting Humans	15%		15%	
723	Hazards to Human Health and Safety	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Major row crops, forages, livestock, poultry and fruit, vegetable, turf crops and ornamentals in Arkansas are all intensively managed relative to input costs (pest control, feed, fertilizer, irrigation, etc.), to provide the highest profit margin possible for producers. The monoculture production system in many parts of the state has resulted in a number of severe pest problems. Of particular concern are various plant insect pests, plant diseases, weeds, nematodes, flies, and fire ants.Correct identification of these pests, and the availability of research-based information for control, are of paramount importance for the continued success of our producers.

Each year, many new crop cultivars come to the marketplace, generally with little information on pest or pesticide resistance. A goal of this program is to provide our growers with a rapid and accurate assessment of the resistance of new cultivars to the most common pests. The pest management program strives to provide support to clientele through applied research, leading to field demonstrations, educational materials and updated management recommendations to match local situations.

The intense use of pesticides in these commodities generates substantial market opportunities for pesticide companies, resulting often in the overuse of pesticides by growers and homeowners. In recent years, overuse of pesticides has created increasing problems with pesticide resistant organisms. Farmers and homeowners end up paying for wasted inputs and "super" pests in the short and long term. The incorrect use of pesticides and home pest management remedies can also contaminate surface and ground water.

By federal and state laws, applicators of restricted use pesticides must be certified or work under direct supervision of a certified applicator, who must be periodically recertified by attending educational programs on pesticide safety, IPM, etc. Arkansas, Louisiana, and Mississippi have chosen Pesticide Applicator Training as a multi-state cooperative effort.

As the urban population increases, more emphasis and demand will be placed on growing desirable and profitable

horticultural crops for both large businesses and backyard gardeners. Gardening, as a hobby or a necessity, continues to grow in popularity among urban and retired Arkansans. This interest creates an increase in the demand for expertise and training in the area of pest management, which may impact everyone from the backyard gardener to the commercial producer.

The Human IPM program focuses on education of homeowners in proper methods of management of termites, fire ants, cockroaches, bees and other pests of human-health concern. The cases of West Nile Virus peaked at 42 in Arkansas during 2002. After initiation of the Extension education program on mosquito control/disease prevention, human cases of West Nile virus dropped and no deaths were recorded.

2. Scope of the Program

- Integrated Research and Extension
- Multistate Integrated Research and Extension
- Multistate Research
- Multistate Extension
- In-State Research
- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

This program is based on the county agent system and on basic and applied research funded by federal formula funds, grower check-off programs, competitive grants, and industry grants-in-aid. This system has been proven effective since 1914. Growers trust the Division of Agriculture for research-based, unbiased, accurate, and up-to-date information. Well-trained crop consultants are more of a mainstay of the farmers' source of information. Considerable effort has been focused over the last few years in educating this segment of the industry as well as our county agents. Research-based information from field and greenhouse trials is provided to specialists and from them to county agents annually in the fall and early winter for use in educational programs via meetings, newsletters, annual printed and electronic updates and various software programs developed for growers and homeowners statewide. Effective education is best done at the local level by direct contact using experiential methods. This system has been successful in the past but must continually be adjusted as biological factors and production practices evolve.

Since 1976, the Pesticide Safety Education Program has provided the necessary training for certified applicators. Surveys of attendees have indicated that most who attend change their pesticide practices as a result. This program contacts/impacts more pesticide applicators than any other Extension program, but continued success is dependent upon sufficient funding.The program will continue to work only so long as the required funding is provided.

Although county agents have comprehensive knowledge of pest management in major commodities and horticulture crops, emphasis on ornamental and vegetable pests is critical.Agents are making more "house calls" than ever before.Homeowner questions about stresses and diseases in horticultural plants are putting increased demands on Division of Agriculture faculty.Education and training of faculty will better equip faculty to address these problems.

Research demonstrates the benefit of pest management for the support of human health and well-being.This program focuses on increaing recognition and adoption of IPM practices by cliente.We use both direct and indirect methods to educate the public, based on fact-based recommendations.

2. Ultimate goal(s) of this Program

To reduce the impact of major pests on animal and crop production systems and urban landscapes in Arkansas.

To make clientele more aware of critical crop insect, disease, and weed problems that they may face in the state, and improve their understanding and management of same.

To reduce accidental pesticide exposures and pesticide complaints, and to promote environmental improvements in agricultural and urban areas in Arkansas.

To reduce overall pesticide use – or at least make pesticide use as efficient as possible, and prevent or minimize periodic disasters caused by pest outbreaks, resulting in highly stable and efficient crop and livestock production.

To provide near-real-time cultivar reaction information to growers and others involved in Arkansas crop production.

To increase the knowledge and awareness of insects, plant diseases and weeds and their impact for urban and commercial clientele and to educate and train Extension personnel to address pest problems.

Consistent application of Division of Agriculture recommendations by the public to reduce incidence of human-health issues caused by insects, while decreasing over-reliance on and misuse of pesticides.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	30.6	0.0	2.2	0.0
2010	30.6	0.0	2.2	0.0
2011	30.6	0.0	2.2	0.0
2012	30.6	0.0	2.2	0.0
2013	30.6	0.0	2.2	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The University of Arkansas Division of Agriculture research program in pest management will reduce the impacts of major pests by: increasing the knowledge base on major pests, diseases, and weeds of importance to Arkansas; developing improved crop protection strategies and technologies for our major crop systems; and integrating new knowledge in plant and animal genomics and basic science into the development new pest management strategies.Our methods will include grower meetings, training extension agents and crop consultants, educational newsletters, Extension publications, visits to individual growers /homeowners, diagnosis of pest problems, newspaper/magazine /professional journal articles, interviews, field days, web-based information, and/or applied on- farm research.

Extension Pest Management education will be delivered through the following programs and methods, targeting issues specific to Arkansas:

The Cotton Nematode and Disease Management Program supports and assists county extension programs in the state, particularly the Delta region to better identify, understand, and manage major cotton diseases in Arkansas.

The Pesticide Applicator Training Program provides initial certification and recertification training sessions for private and commercial/non-commercial pesticide applicators statewide each year. County agricultural Extension agents provide the training for private applicators (farmers), and the pesticide assessment specialist is responsible for training the commercial/non-commercial applicators.

The Cotton, Rice and Soybean IPM Programs offer simple grant funding for county extension education efforts focused primarily on integrated pest management of cotton, rice and soybean pests. County extension education efforts are aimed at improving crop production and pest management through adoption of research-based recommendations.

The Rice, Soybean, and Wheat Pathology Programs assist county extension programs to educate growers and others involved to better identify, understand and manage the many rice, soybean, and wheat diseases in Arkansas.

The Soybean Cultivar Disease Screening Program assists soybean producers in selecting the most appropriate soybean cultivars for their farms to avoid costly losses from soybean diseases and nematodes.

As part of the Diversified IPM Program, urban and commercial horticulture educational programs are delivered to train urban and commercial vegetable, ornamental, turf and fruit clientele in pest and plant disease management practices.

Human Integrated Pest Management will develop sound recommendations for IPM targeting pests affecting humans, and to deliver the recommendations to a variety of sectors of the public. Pests to be targeted include Africanized bees, termites, and fire ants in residential settings. Delivery methods include presentations at educational meetings and workshops, extension publications and newsletters, web-based materials and visits to households of affected citizens.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (On-Farm Research) • Education Class • Group Discussion • Workshop • Other 2 (Field Days/Diagnostic Services) • Demonstrations	• Public Service Announcement • Other 1 (Scientific/Technical Publication) • Other 2 (Grant Proposals/File Patents) • Web sites • Newsletters

3. Description of targeted audience

Crop producers
Livestock producers
Division of Agriculture personnel
Agricultural consultants
Agricultural industry personnel
Pesticide applicators
Pest Control Operators
Homeowners
Golf course superintendents
Commercial pest management personnel
Master gardeners
Commercial landscapers
Landscape management staff
Public Health Officials
Other researchers
Students
Extension Specialists
Research Funding Personnel and Agencies
Policy and Decision Makers
Regulatory Personnel
State Plant Board Personnel
General Public

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	70000	70000	0	0
2010	70000	70000	0	0
2011	70000	70000	0	0
2012	70000	70000	0	0
2013	70000	70000	0	0

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

Expected Patent Applications

2009 : 3 **2010 :** 3 **2011 :** 3 **2012 :** 3 **2013 :** 3

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	45	5	50
2010	50	5	55
2011	50	5	55
2012	50	7	57
2013	50	7	57

V(H). State Defined Outputs

1. Output Target

- # of one-on-one contacts

  2009 : 50000 **2010 :** 50000 **2011 :** 50000 **2012 :** 50000 **2013 :** 50000

- # of field demonstrations

  2009 : 380 **2010 :** 385 **2011 :** 390 **2012 :** 400 **2013 :** 400

- # of farm tours

  2009 : 60 **2010 :** 60 **2011 :** 60 **2012 :** 60 **2013 :** 60

- # of publications written

  2009 : 15 **2010 :** 15 **2011 :** 15 **2012 :** 15 **2013 :** 15

- # of farm visits made

  2009 : 6000 **2010 :** 6000 **2011 :** 6000 **2012 :** 6000 **2013 :** 6000

- # of pesticide applicator education classes

  2009 : 120 **2010 :** 120 **2011 :** 120 **2012 :** 120 **2013 :** 120

- # of homeowner education classes

  2009 : 50 **2010 :** 50 **2011 :** 50 **2012 :** 50 **2013 :** 50

- # of hits on website

  2009 : 100000 **2010 :** 100000 **2011 :** 100000 **2012 :** 100000 **2013 :** 100000

- # of newsletters

  2009 : 400 **2010 :** 400 **2011 :** 400 **2012 :** 400 **2013 :** 400

- # of research field days

2009 :15 **2010** :15 **2011** :15 **2012** :15 **2013** :15

- # of workshops

  2009 :10 **2010** :10 **2011** :10 **2012** :10 **2013** :10

- # of newsletter articles

  2009 :65 **2010** :70 **2011** :70 **2012** :70 **2013** :70

- # of Arkansas Commodity Board grants received

  2009 :15 **2010** :18 **2011** :18 **2012** :18 **2013** :18

- # of federal grants and contracts

  2009 :10 **2010** :10 **2011** :10 **2012** :10 **2013** :10

- # of educational classes

  2009 :224 **2010** :224 **2011** :224 **2012** :224 **2013** :224

- # of Pest Management clientele contacts from education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational methods

  2009 :70000 **2010** :70000 **2011** :70000 **2012** :70000 **2013** :70000

- # of Pest Management education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational events

  2009 :66829 **2010** :66834 **2011** :66834 **2012** :66834 **2013** :67000

V(I). State Defined Outcome

O. No	Outcome Name
1	Refereed Journal Publications
2	# of participants intending to adopt IPM practices
3	# of participants gaining knowledge of IPM practices
4	# of participants gaining knowledge of proper pesticide application practices
5	# of participants passing commercial pesticide certification exams
6	# of producers adopting one or more IPM practices
7	# of homeowners adopting one or more IPM practices
8	# of participants adopting one or more proper pesticide application practices
9	# of diagnostic submissions
10	# of producers using computer-assisted programs
11	# of clients using scouting programs
12	# of pest monitoring traps utilized
13	Annual soybean yield - bushels per acre
14	Annual value of soybean production (1,000 Dollars)
15	Annual rice (all) yield -- pounds per acre
16	Annual value of rice (all) production (1,000 dollars)
17	Annual cotton (all) yield -- pounds per acre
18	% of soybean acreage receiving herbicide applications
19	Pounds (1,000) of herbicides applied to planted soybean acreage
20	% of soybean acreage receiving insecticide applications
21	Pounds (1,000) of insecticides applied to planted soybean acreage
22	% of soybean acreage receiving fungicide applications
23	Pounds (1,000) of fungicides applied to planted soybean acreage

Outcome #1

1. Outcome Target

Refereed Journal Publications

2. Outcome Type : Change in Action Outcome Measure

2009 : 50	**2010 :** 55	**2011 :** 55	**2012 :** 55	**2013 :** 55

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #2

1. Outcome Target

# of participants intending to adopt IPM practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 4000	**2010 :** 4000	**2011 :** 4000	**2012 :** 4000	**2013 :** 4000

3. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #3

1. Outcome Target

# of participants gaining knowledge of IPM practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :4000	**2010 :** 4000	**2011 :** 4000	**2012** :4000	**2013 :**4000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #4

1. Outcome Target

# of participants gaining knowledge of proper pesticide application practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :4000	**2010 :** 4000	**2011 :** 4000	**2012** :4000	**2013 :**4000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #5

1. Outcome Target

# of participants passing commercial pesticide certification exams

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :650	**2010 :** 700	**2011 :** 700	**2012** :725	**2013 :**750

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants

- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #6

1. Outcome Target

# of producers adopting one or more IPM practices

2. Outcome Type : Change in Action Outcome Measure

2009 : 4000	**2010 :** 4000	**2011 :** 4000	**2012 :** 4000	**2013 :** 4000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #7

1. Outcome Target

# of homeowners adopting one or more IPM practices

2. Outcome Type : Change in Action Outcome Measure

2009 : 250	**2010 :** 270	**2011 :** 300	**2012 :** 330	**2013 :** 360

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans

- 723 - Hazards to Human Health and Safety

Outcome #8

1. Outcome Target

# of participants adopting one or more proper pesticide application practices

2. Outcome Type : Change in Action Outcome Measure

2009 : 1200	**2010 :** 1200	**2011 :** 1200	**2012 :** 1200	**2013 :** 1200

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #9

1. Outcome Target

# of diagnostic submissions

2. Outcome Type : Change in Action Outcome Measure

2009 : 780	**2010 :** 780	**2011 :** 790	**2012 :** 800	**2013 :** 800

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #10

1. Outcome Target

# of producers using computer-assisted programs

2. Outcome Type : Change in Action Outcome Measure

2009 :650	**2010 :** 650	**2011 :** 650	**2012** :650	**2013 :**650

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #11

1. Outcome Target

# of clients using scouting programs

2. Outcome Type : Change in Action Outcome Measure

2009 :750	**2010 :** 750	**2011 :** 750	**2012** :750	**2013 :**750

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #12

1. Outcome Target

# of pest monitoring traps utilized

2. Outcome Type : Change in Action Outcome Measure

2009 :220	**2010 :** 230	**2011 :** 250	**2012** :270	**2013 :**300

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants

- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 312 - External Parasites and Pests of Animals
- 403 - Waste Disposal, Recycling, and Reuse
- 721 - Insects and Other Pests Affecting Humans
- 723 - Hazards to Human Health and Safety

Outcome #13

1. Outcome Target

Annual soybean yield - bushels per acre

2. Outcome Type : Change in Condition Outcome Measure

2009 : 38 **2010 :** 38 **2011 :** 38 **2012 :** 38 **2013 :** 38

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #14

1. Outcome Target

Annual value of soybean production (1,000 Dollars)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 791094 **2010 :** 791094 **2011 :** 791094 **2012 :** 791094 **2013 :** 791094

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #15

1. Outcome Target

Annual rice (all) yield -- pounds per acre

2. Outcome Type : Change in Condition Outcome Measure

2009 : 6610	**2010 :** 6610	**2011 :** 6610	**2012 :** 6610	**2013 :** 6610

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #16

1. Outcome Target

Annual value of rice (all) production (1,000 dollars)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 740648	**2010 :** 740648	**2011 :** 740648	**2012 :** 740648	**2013 :** 740648

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #17

1. Outcome Target

Annual cotton (all) yield -- pounds per acre

2. Outcome Type : Change in Condition Outcome Measure

2009 : 916	**2010 :** 916	**2011 :** 916	**2012 :** 916	**2013 :** 916

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #18

1. Outcome Target

% of soybean acreage receiving herbicide applications

2. Outcome Type : Change in Condition Outcome Measure

2009 : 95	**2010 :** 95	**2011 :** 95	**2012 :** 95	**2013 :** 95

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #19

1. Outcome Target

Pounds (1,000) of herbicides applied to planted soybean acreage

2. Outcome Type : Change in Condition Outcome Measure

2009 : 4152	**2010 :** 4152	**2011 :** 4152	**2012 :** 4152	**2013 :** 4152

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #20

1. Outcome Target

% of soybean acreage receiving insecticide applications

2. Outcome Type : Change in Condition Outcome Measure

2009 : 14	**2010 :** 14	**2011 :** 14	**2012 :** 14	**2013 :** 14

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #21

1. Outcome Target

Pounds (1,000) of insecticides applied to planted soybean acreage

2. Outcome Type : Change in Condition Outcome Measure

2009 344	**2010 :** 344	**2011 :** 344	**2012** 344	**2013 :** 344

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #22

1. Outcome Target

% of soybean acreage receiving fungicide applications

2. Outcome Type : Change in Condition Outcome Measure

2009 8	**2010 :** 8	**2011 :** 8	**2012** 8	**2013 :** 8

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

Outcome #23

1. Outcome Target

Pounds (1,000) of fungicides applied to planted soybean acreage

2. Outcome Type : Change in Condition Outcome Measure

2009 21	**2010 :** 21	**2011 :** 21	**2012** 21	**2013 :** 21

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

- 403 - Waste Disposal, Recycling, and Reuse

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Appropriations changes
- Competing Programmatic Challenges
- Other (NASS)
- Natural Disasters (drought,weather extremes,etc.)
- Competing Public priorities
- Economy
- Public Policy changes
- Government Regulations

Description

Pest Management program outcomes will be influenced by changes in the current Farm Bill affecting payments to farmers, land grant university funding from CSREES, increasing fuel costs, downturns in the economy and extreme weather conditions. Any or all of these factors will cause anticipated projected outcome results to vary widely.

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

1. Evaluation Studies Planned

- During (during program)
- After Only (post program)
- Other (NASS)

Description

Longitudinal evaluation will be conducted by subcomponents of this program through various research based methods. Comprehensive programmatic and departmental reviews for research, extension and teaching programs are conducted on a five to seven year cycle.

The Pest Management impact evaluation includes a new long-term indicator: "Sustained acreage on which integrated methods are adopted and implemented resulting in improved environmental health." Data will be collected on this indicator beginning FY2007, and will continue each year through 2011. No comprehensive historical data exists for this indicator in Arkansas; therefore, there is no valid basis for reasonable adoption projections. Due to this, no projects were submitted in the plan for this indicator.

2. Data Collection Methods

- Unstructured
- Telephone
- On-Site
- Observation
- Other (NASS)
- Mail
- Sampling
- Tests

Description

Data will be collected from producers, consultants and other agricultural practitioners, through telephone and mail surveys, questionnaires at producer meetings and other on-site visits. and by observations to be made by Extension faculty.Indirect methods of collecting data will include those data gleaned from NASS.

V(A). Planned Program (Summary)

Program #9

1. Name of the Planned Program

Plants & Plant Products

2. Brief summary about Planned Program

Arkansas ranks as one of the primary agricultural states in the nation. Row crops are grown on over six million acres of farm land and, along with forestry, contribute over $3 billion to the state's economy annually. Arkansas is the largest producer of rice in the nation and is a major producer of soybeans, cotton, soft red winter wheat, and grain sorghum. Although small in size, fruits and vegetables are a significant and growing industry. Turf, ornamentals and landscape plants are the fastest growing segment of the agricultural industry nationally. Both large and small farms continue to be an important part of the state's economy.

The University of Arkansas, Division of Agriculture strives to increase efficiency of crop and forage production through research and education focusing on best management practices, to ensure that producers remain competitive in the global economy, while protecting our natural resources. Research and educational programs addressing cultivar/hybrid development and selection, soil fertility requirements, production practices, timing of inputs, crop rotation benefits, and irrigation timing are key factors involved in increased crop yields that were seen in the state this past year. Areas of educational emphasis included variety selection, groundwater management and conservation, nutrient management, and controlling of diseases.

Soil, plant, water and nutrient relationships are key factors involved in increasing the efficiency of crop production. Soil testing is the foundation of a sound fertility program and nearly 100,000 soil samples are received at the Soil Lab at Marianna. Soil testing not only provides a guide to develop fertilizer recommendations for the intended crops, but also, together with plant analysis, can aid in the identification of potential problems.

Plant management systems are key to helping producers who are often challenged by the large volume of varieties/hybrids available to find varieties/hybrids that will perform well on their farm. In 2007, 80 wheat varieties, 82 corn hybrids, 22 grain sorghum hybrids, 158 soybean varieties, 23 rice varieties/hybrids, and 75 cotton varieties were tested in the Arkansas Variety Testing program. The Cotton Verification Program demonstrated that variety selection can improve income per acre by an average of $100 and that proper timing of cotton harvesting returned $50 to $75 per acre.

Horticulture (commercial production and service industries and recreational/home clientele) contributes to the state's economy and improves the quality of the environment and the quality of life lives for many Arkansans. Existing and new horticulture businesses and farms require training and exposure in new plants and production methods to stay competitive and to develop best management practices. Consumers require training and education in various aspects of home horticulture.

The forage production research and management programs provide research-based information through non-formal educational methods for the sustainability of agricultural production systems to improve Arkansans quality of life.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	10%		10%	
102	Soil, Plant, Water, Nutrient Relationships	10%		10%	
111	Conservation and Efficient Use of Water	10%		10%	
112	Watershed Protection and Management	10%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	10%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	10%		10%	
205	Plant Management Systems	10%		10%	
206	Basic Plant Biology	10%		10%	
213	Weeds Affecting Plants	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Agriculture is a very large and diverse industry in Arkansas. Programs in cotton, rice, wheat, soybean, corn, and grain sorghum are crucial to making Arkansas highly competitive in the global economy. While the 2007 state rice crop resulted in highest yield per acre on record and was the largest in the country, Arkansas rice producers continue to face many challenges in order to produce a profitable crop and maintain sustainability of the land. In 2007, Arkansas had the second highest average yield per acre on record and second in the US in total production of cotton. Soybeans remain the largest (based on planted acreage) row- crop. Since wheat continues to be a profitable crop for many producers, especially on acres where irrigation of row crops is not possible, Arkansas wheat producers are always looking for management practices to reduce production costs and still be able to produce economical high-yielding wheat. A key factor in maintaining high yields and consequently increased competitiveness and profitability in row crops is weed control. Weed control continues to be a key management decision that rice, corn, wheat and soybean farmers face each season. After variety selection, it is often the first management decision made each year. Failure to control weeds can often nullify other concerns as weed competition has the potential to completely rob crops of profitability. In turf and pasture management, for example, lack of effective weed control is preventing many farmers from taking advantage of the new seeded varieties and the accompanying cost of establishment savings.

Extension and research faculty also work together to identify and implement best management practices in horticulture enterprises and systems, to educate fruit, vegetable, ornamentals, turfgrass, commercial, and consumer clientele to enhance economic development and protect the environment in Arkansas, and to develop a system that is highly competitive in the regional and global economy.

Arkansas' climate and most of its soil and terrain are suited for the production of grasses and legumes necessary to support the livestock industries. Primary forages include tall fescue, clover and bermudagrass. Over 4.6 million acres of pastureland and 1.4 million acres of hay land (total 6 million acres) are managed to enhance livestock production and land stewardship. Livestock producers will benefit from forage management production programs to improve production efficiency and returns.

2. Scope of the Program

- Multistate Research
- Multistate Integrated Research and Extension
- Multistate Extension
- Integrated Research and Extension
- In-State Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

While average yields for most commodities grown in Arkansas have increased significantly, Arkansas producers continue to face many challenges in order to produce profitable crops and maintain sustainability of land. The most significant issues include optimum variety selection, diminishing irrigation water quantity, integrated pest management issues, nutrient management, and soil conservation. Many of these issues are addressed through education programs and various verification programs which are providing growers with key recommendations for efficient production, weed control issues, and other resources. Cooperative efforts with grower groups, commodity boards, regulatory agencies, and other organizations also provide valuable feedback in programming on a regional and statewide basis. On-farm research results generate data from which recommendations are derived.

The majority of county Extension Councils in Arkansas have identified horticulture as a major emphasis area for their long range educational program. Horticulture inquiries are an increasing demand on the county agent's time and few have training in these diverse subjects. With support from the state horticulture staff, they will be able to better serve their clientele. New and existing horticultural production and service industries require on-going research and educational assistance in developing and adapting new technology and best management practices.

Because of the abundance of natural resources (water, land, etc.), livestock production will continue to be a major industry in Arkansas. The Cooperative Extension Service continues to develop programming needs through a grass-roots programming effort. Therefore, identifying and implementing programs needed by the producing clientele will address their needs. Livestock producers will face ever changing challenges, and they will look to the UA Division of Agriculture to help them face those challenges.

2. Ultimate goal(s) of this Program

- Develop crop production systems that are sustainable, profitable, and competitive in the global marketplace
- Collaborate with industry, commodity groups, etc., to facilitate technology development and adoption
- Initiate cooperative work among scientific disciplines to fine-tune the best management practices over a variety of geographic regions
- Investigate and address concerns, as they emerge
- Continue to support strategic partnerships that create value-added benefits for Arkansas' environment and its people
- Expand programs for effective sustainable agriculture systems
- Increase and enhance horticulture knowledge and expertise of commercial and consumer audiences and extension staff
- Increase number of and improve both quality and profitability of commercial horticulture operations in the state
- Increase forage production efficiency

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	69.6	0.0	35.5	0.0
2010	69.6	0.0	35.5	0.0
2011	69.6	0.0	35.5	0.0
2012	69.6	0.0	35.5	0.0
2013	69.6	0.0	35.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Develop and conduct workshops, educational meetings, demonstrations, and field days
- Direct clientele contact: on- site visits, phone calls, mail and emails
- Develop and produce educational products and materials
- Conduct tours and demonstrations
- Conduct discovery and applied research
- Publish educational materials
- Provide diagnostic services
- Media work through print, radio, TV and internet
- Partnering with commodity associations, groups, Master Gardeners, and traditional and nontraditional groups
- Coordination of Master Gardener programs
- Develop improved crop production systems that maximize profitability and sustainability

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
• Education Class • Demonstrations • Other 2 (Soil/Water Testing) • Group Discussion • One-on-One Intervention • Workshop • Other 1 (Farm Visits/Field Days)	• Newsletters • Web sites • Other 1 (Grants/Prof.Publications) • Other 2 (Mass Media)

3. Description of targeted audience

Growers/producers
Consultants
Agri Business/Allied Industries
Horticulture production and Service Businesses
Master Gardeners
General Public
Other researchers
Students
Extension Specialists
Teaching faculty
Research funding personnel and agencies

Public

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	201000	430000	0	0
2010	206500	436000	0	0
2011	212500	442000	0	0
2012	217500	448000	0	0
2013	219000	450000	0	0

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

Expected Patent Applications

2009 : 10 **2010 :** 10 **2011 :** 10 **2012 :** 10 **2013 :** 10

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	100	0	100
2010	100	0	100
2011	100	0	100
2012	100	0	100
2013	100	0	100

V(H). State Defined Outputs

1. Output Target

- # of agronomic production education meetings (multi-topic)

  2009 245 **2010** 250 **2011** 255 **2012** 260 **2013** 265

- # of production education meetings that address fertilizer, soil and water management

  2009 30 **2010** 30 **2011** 32 **2012** 34 **2013** 36

- # of production education meetings that address variety selection

  2009 21 **2010** 22 **2011** 24 **2012** 26 **2013** 28

- # of production education meetings that address plant monitoring and nutrition

  2009 15 **2010** 18 **2011** 21 **2012** 24 **2013** 24

- # of production meetings that address soil and water testing

2009 12 **2010** 14 **2011** 16 **2012** 18 **2013** 20

- # of production education meetings that address variety/hybrid selection consultations

  2009 39 **2010** 40 **2011** 41 **2012** 42 **2013** 44

- # of demonstrations/on-farm research

  2009 190 **2010** 192 **2011** 193 **2012** 194 **2013** 194

- # of farm visits

  2009 364 **2010** 364 **2011** 364 **2012** 364 **2013** 380

- # of field days

  2009 51 **2010** 51 **2011** 51 **2012** 51 **2013** 51

- # of informal surveys of participants to measure culture practices

  2009 20 **2010** 20 **2011** 21 **2012** 22 **2013** 24

- # of educational meetings, demonstrations, field days, site visits, and other group events held to educate commercial and consumer clientele in horticulture

  2009 600 **2010** 650 **2011** 650 **2012** 650 **2013** 700

- # of educational meetings, demonstrations, farm visits and/or field days held to educate clientele on forage production and grazing management

  2009 2500 **2010** 2600 **2011** 2600 **2012** 2600 **2013** 2600

- # of hits to plant and plant products web-based educational material

  2009 7000 **2010** 7500 **2011** 8000 **2012** 9000 **2013** 25000

- # of Arkansas Commodity Board Grants received

  2009 50 **2010** 50 **2011** 50 **2012** 50 **2013** 50

- # of federal grants and contracts

  2009 25 **2010** 25 **2011** 25 **2012** 25 **2013** 25

- # of Plants & Plant Products clientele contacts from education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational methods

  2009 195500 **2010** 201000 **2011** 206500 **2012** 212500 **2013** 215000

- # of Plants & Plant Products education classes, workshops, group discussions, one-on-one interventions, demonstrations, and other educational events

  2009 4064 **2010** 4222 **2011** 4237 **2012** 4237 **2013** 4250

V(I). State Defined Outcome

O. No	Outcome Name
1	# of commercial forage producers who gained knowledge related to management technology
2	# of commercial forage producers who gained knowledge related to production practices
3	# of new Master Gardeners trained and certified
4	# of participants who changed or adopted a new commercial forage management practice
5	# of participants who changed or adopted a new forage and/or grazing management practice
6	# of clientele who select improved varieties
7	# of clientele using soil testing
8	# of clientele using plant testing
9	# of clientele using water testing
10	# of impacted acres using soil testing
11	# of impacted acres using plant testing
12	# of impacted acres using water testing
13	# Forage testing submissions
14	# of producers using strip-grazing for their stockpiled forages
15	# of clientele (non-duplicated) who use the DD50 program for improved production efficiency
16	# of impacted acres using the DD50 program for improved production efficency
17	# of clientele using RICESEED program
18	# of acres planted based on ouput from RICESEED program
19	# of Master Gardeners who recertified
20	# of new horticultural businesses and new farmers markets
21	Acres of harvested wheat (all)
22	Yield (bushels) of harvested wheat (all)
23	Value of production of harvested wheat (all)
24	Acres of harvested soybeans (all)
25	Yield (bushels) of harvested soybeans
26	Value of production of harvested soybeans (all)
27	Acres of harvested rice (all)
28	Yield (pounds) of harvested rice (all)
29	Acres of harvested cotton (all)
30	Yield (pounds) of harvested cotton (all)
31	Total production (bales) of harvested cotton (all)
32	Acres harvested of hay (all)
33	Yield (tons)of harvested hay (all)
34	Value of production of harvested hay (all)

Outcome #1

1. Outcome Target

# of commercial forage producers who gained knowledge related to management technology

2. Outcome Type : Change in Knowledge Outcome Measure

2009 200	**2010 :** 200	**2011 :** 200	**2012** 200	**2013 :** 200

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #2

1. Outcome Target

# of commercial forage producers who gained knowledge related to production practices

2. Outcome Type : Change in Knowledge Outcome Measure

2009 200	**2010 :** 200	**2011 :** 200	**2012** 200	**2013 :** 200

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #3

1. Outcome Target

# of new Master Gardeners trained and certified

2. Outcome Type : Change in Knowledge Outcome Measure

2009 : 700	**2010 :** 700	**2011 :** 700	**2012 :** 700	**2013 :** 700

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #4

1. Outcome Target

# of participants who changed or adopted a new commercial forage management practice

2. Outcome Type : Change in Action Outcome Measure

2009 : 60	**2010 :** 65	**2011 :** 70	**2012 :** 75	**2013 :** 80

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #5

1. Outcome Target

# of participants who changed or adopted a new forage and/or grazing management practice

2. Outcome Type : Change in Action Outcome Measure

2009 : 500	**2010 :** 500	**2011 :** 500	**2012 :** 500	**2013 :** 500

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #6

1. Outcome Target

# of clientele who select improved varieties

2. Outcome Type : Change in Action Outcome Measure

2009 : 9950	**2010 :** 9990	**2011 :** 10000	**2012 :** 10100	**2013 :** 10200

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #7

1. Outcome Target

# of clientele using soil testing

2. Outcome Type : Change in Action Outcome Measure

2009 : 8760	**2010 :** 8775	**2011 :** 8880	**2012 :** 8900	**2013 :** 8910

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 205 - Plant Management Systems
- 213 - Weeds Affecting Plants

Outcome #8

1. Outcome Target

# of clientele using plant testing

2. Outcome Type : Change in Action Outcome Measure

2009 : 655	**2010 :** 660	**2011 :** 665	**2012 :** 670	**2013 :** 675

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #9

1. Outcome Target

# of clientele using water testing

2. Outcome Type : Change in Action Outcome Measure

2009 : 90	**2010 :** 95	**2011 :** 100	**2012 :** 105	**2013 :** 110

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

Outcome #10

1. Outcome Target

# of impacted acres using soil testing

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
30200000	30300000	30400000	30500000	30550000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

Outcome #11

1. Outcome Target

# of impacted acres using plant testing

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
147000	147000	148000	150000	150500

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #12

1. Outcome Target

# of impacted acres using water testing

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
26800	26900	27000	27100	27200

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 205 - Plant Management Systems

Outcome #13

1. Outcome Target

Forage testing submissions

2. Outcome Type : Change in Action Outcome Measure

2009 : 75	**2010 :** 75	**2011 :** 75	**2012 :** 75	**2013 :** 77

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #14

1. Outcome Target

# of producers using strip-grazing for their stockpiled forages

2. Outcome Type : Change in Action Outcome Measure

2009 : 22	**2010 :** 22	**2011 :** 22	**2012 :** 22	**2013 :** 25

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

Outcome #15

1. Outcome Target

# of clientele (non-duplicated) who use the DD50 program for improved production efficiency

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1800	1800	1800	1850	1900

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

Outcome #16

1. Outcome Target

# of impacted acres using the DD50 program for improved production efficency

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
713000	713500	714000	714500	715000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

Outcome #17

1. Outcome Target

# of clientele using RICESEED program

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
255	260	265	270	275

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

Outcome #18

1. Outcome Target

# of acres planted based on ouput from RICESEED program

2. Outcome Type : Change in Condition Outcome Measure

2009 :56500	**2010 :** 56600	**2011 :** 57000	**2012** :58000	**2013 :**59000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

Outcome #19

1. Outcome Target

# of Master Gardeners who recertified

2. Outcome Type : Change in Action Outcome Measure

2009 :500	**2010 :** 500	**2011 :** 500	**2012** :500	**2013 :**550

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #20

1. Outcome Target

# of new horticultural businesses and new farmers markets

2. Outcome Type : Change in Condition Outcome Measure

2009 :2	**2010 :** 2	**2011 :** 2	**2012** :2	**2013 :**1

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems

Outcome #21

1. Outcome Target

Acres of harvested wheat (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
570000	570000	570000	570000	570000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #22

1. Outcome Target

Yield (bushels) of harvested wheat (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
50	50	50	50	50

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)

- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #23

1. Outcome Target

Value of production of harvested wheat (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 87780000 **2010 :** 87780000 **2011 :** 87780000 **2012 :** 87780000 **2013 :** 87780000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #24

1. Outcome Target

Acres of harvested soybeans (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 : 2890000 **2010 :** 2890000 **2011 :** 2890000 **2012 :** 2890000 **2013 :** 2890000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 213 - Weeds Affecting Plants

Outcome #25

1. Outcome Target

Yield (bushels) of harvested soybeans

2. Outcome Type : Change in Condition Outcome Measure

2009 : 38 **2010 :** 38 **2011 :** 38 **2012 :** 38 **2013 :** 38

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #26

1. Outcome Target

Value of production of harvested soybeans (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
791094000	791094000	791094000	791094000	791094000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #27

1. Outcome Target

Acres of harvested rice (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1455000	1455000	1455000	1455000	1455000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #28

1. Outcome Target

Yield (pounds) of harvested rice (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
6610	6610	6610	6610	6610

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #29

1. Outcome Target

Acres of harvested cotton (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :945000	**2010** : 945000	**2011** : 945000	**2012** :945000	**2013** :945000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #30

1. Outcome Target

Yield (pounds) of harvested cotton (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :916	**2010** : 916	**2011** : 916	**2012** :916	**2013** :916

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #31

1. Outcome Target

Total production (bales) of harvested cotton (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :1804000	**2010** : 1804000	**2011** : 1804000	**2012** :1804000	**2013** :1804000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #32

1. Outcome Target

Acres harvested of hay (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1340000	1340000	1340000	1340000	1340000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

Outcome #33

1. Outcome Target

Yield (tons)of harvested hay (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
2	2	2	2	2

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 205 - Plant Management Systems

Outcome #34

1. Outcome Target

Value of production of harvested hay (all)

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
148631000	148631000	148631000	148631000	148631000

3. Associated Institute Type(s)

•1862 Extension
•1862 Research

4. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Public priorities
- Public Policy changes
- Competing Programmatic Challenges
- Natural Disasters (drought,weather extremes,etc.)
- Populations changes (immigration,new cultural groupings,etc.)
- Economy
- Appropriations changes
- Government Regulations

Description

Program outcomes will be influenced by changes in the current Farm Bill affecting payments to farmers, land grant university funding from CSREES, increasing fuel costs, downturns in the economy and extremem weather conditions. Any or all of these factors will cause anticipated projected outcomes to vary widely.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention
- Other (NASS)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Before-After (before and after program)
- After Only (post program)

Description

Comprehensive program and departmental evaluation reviews for research, extension and teaching programs are conducted on a five to seven year cycle by various research based evaluation methods.Data on shifts in production methods, acreage, cropping systems, and enrollment will be compared to historic levels and trends.

2. Data Collection Methods

- Other (NASS)
- On-Site
- Unstructured
- Observation
- Telephone
- Case Study
- Sampling
- Mail
- Structured
- Tests
- Whole population
- Journals

Description

Data will be collected from producers, consultants, industry representatives, and other individuals involved with agriculture through on-site informal surveys and questionnaires at production meetings, field days, and on-site visits.Mail and telephone surveys, will also be utilized along with observations made by Extension faculty.Indirect methods of collecting data will include web page visits on Extension website pages and practice change data taken from the National Agriculture Statistics Service.

V(A). Planned Program (Summary)

Program #10

1. Name of the Planned Program

Technology & Engineering

2. Brief summary about Planned Program

The application of technology and engineering is very critical for achieving economical production while protecting and conserving natural resources and the environment. However, in most cases this application of technology is in support of the agricultural system in question and not a program of it self. Therefore the Technology & Engineering Program provides information on efforts not covered in other planned programs.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	10%		10%	
112	Watershed Protection and Management	10%		10%	
205	Plant Management Systems	10%		10%	
401	Structures, Facilities, and General Purpose Farm Supplies	10%		10%	
402	Engineering Systems and Equipment	10%		10%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
404	Instrumentation and Control Systems	5%		5%	
405	Drainage and Irrigation Systems and Facilities	10%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	7%		7%	
511	New and Improved Non-Food Products and Processes	5%		5%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	3%		3%	
605	Natural Resource and Environmental Economics	5%		5%	
806	Youth Development	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Arkansas producers irrigate approximately 4.5 million acres and are very dependent on irrigation to produce the yields and quality of crops necessary to make a profit and remain solvent. Some areas are facing a decline in irrigation water resources and all producers struggle with significant increases in irrigation pumping costs and a shortage in dependable and affordable

labor.Technology and engineering practices can be used to help producers improve water management on their farms and reduce costs while conserving and protecting natural resources and the environment.

2. Scope of the Program

- Integrated Research and Extension
- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Clientele will adopt and implement technology and engineering practices that are presented in a way that allows them to see the benefits that are derived. They are more likely to adopt practices that have been researched and effectively demonstrated on-farm under conditions that they feel are similar to their situation. Similarly, they relate better to the comments and experiences that others share related to practices that they tried on their farm. This program involves presenting information at meetings and through publications and web sites.It also includes working on-farm with the implementation of technology and engineering practices that improve Agricultural production and preserve and protect natural resources and the environment. Previous experiences from on-farm efforts show a much higher acceptance and adoption rate by the cooperating producer as well as the producers in the area. This is due to the opportunity that other producers have to gain more first hand knowledge of what is being done on a nearby farm similar to theirs. It is also the result of the information from the on-farm work being shared in educational meetings in a way that growers can see how it can apply to their farming operation. The on-farm approach also allows the investigators the opportunity to gain more experience in making adjustments that may be necessary due to the many variables involved with doing on-farm demonstrations.

2. Ultimate goal(s) of this Program

Increase the number of clientele who adopt technology and engineering practices that improve agricultural production and preserve and protect natural resources and the environment.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	5.3	0.0	2.1	0.0
2010	5.3	0.0	2.1	0.0
2011	5.3	0.0	2.1	0.0
2012	5.3	0.0	2.1	0.0
2013	5.3	0.0	2.1	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct field tours, work shops, educational meetings and farm visits
Produce publications and post information to web site
Conduct on-farm demonstrations
Develop and release CES decision support tools
Conduct non-duplicated 4-H Youth technology and engineering programs

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Group Discussion • Demonstrations • One-on-One Intervention • Workshop • Education Class	• Web sites • Newsletters

3. Description of targeted audience

Row crop producers, livestock producers, poultry producers, landowners, consultants, pesticide applicators, agricultural agencies and businesses and other interested groups

4-H Youth

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	3000	1200	10	5
2010	3000	1200	10	5
2011	3000	1200	10	5
2012	3000	1200	10	5
2013	3000	1200	10	5

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

Expected Patent Applications

2009 : 2 **2010 :** 2 **2011 :** 2 **2012 :** 2 **2013 :** 2

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	3	1	4
2010	3	1	4
2011	3	1	4
2012	3	1	4
2013	3	1	4

V(H). State Defined Outputs

1. Output Target

- # of any CES on-farm demonstrations of drainage and irrigation water management.

2009 20 **2010** 20 **2011** :20 **2012** 20 **2013** 20

- # of any CES Field Tours of drainage and irrigation water management.

2009 5 **2010** 5 **2011** :5 **2012** 5 **2013** 5

- # of any CES sponsored Educational Meetings addressing drainage and irrigation water management.

2009 30 **2010** 30 **2011** :30 **2012** 30 **2013** 30

- # Attending any CES sponsored Educational Meetings addressing drainage and irrigation water management.

2009 2000 **2010** 2000 **2011** :2000 **2012** 2000 **2013** 2000

- # of publications that include information on drainage and irrigation water management.

2009 5 **2010** 5 **2011** :5 **2012** 5 **2013** 5

- # of postings to web sites of information on drainage and irrigation water management.

2009 3 **2010** 3 **2011** :3 **2012** 3 **2013** 3

- # Attending any CES Field Tours of drainage and irrigation water management.

2009 :100 **2010** 100 **2011** :100 **2012** :100 **2013** :100

- # of cooperators involved in CES on-farm demonstrations of drainage and irrigation water management.

2009 20 **2010** 20 **2011** :20 **2012** 20 **2013** 20

V(I). State Defined Outcome

O. No	Outcome Name
1	# of people who increased their knowledge after attending any CES sponsored educational meeting, field tour or on-farm demonstration addressing drainage and irrigation water management.
2	# of people who adopted or implemented a recommendation after attending any CES sponsored educational meeting, field tour or on-farm demonstration addressing drainage and irrigation water management.
3	Acres associated with practices for improved water management

Outcome #1

1. Outcome Target

# of people who increased their knowledge after attending any CES sponsored educational meeting, field tour or on-farm demonstration addressing drainage and irrigation water management.

2. Outcome Type : Change in Knowledge Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
1000	1050	1100	1150	1200

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 405 - Drainage and Irrigation Systems and Facilities

Outcome #2

1. Outcome Target

# of people who adopted or implemented a recommendation after attending any CES sponsored educational meeting, field tour or on-farm demonstration addressing drainage and irrigation water management.

2. Outcome Type : Change in Action Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
105	110	125	135	140

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 405 - Drainage and Irrigation Systems and Facilities

Outcome #3

1. Outcome Target

Acres associated with practices for improved water management

2. Outcome Type : Change in Condition Outcome Measure

2009 :	**2010 :**	**2011 :**	**2012 :**	**2013 :**
450000	500000	550000	600000	650000

3. Associated Institute Type(s)

•1862 Extension

4. Associated Knowledge Area(s)

- 405 - Drainage and Irrigation Systems and Facilities

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

« Weather extremes can greatly impact water management efforts
« A decrease in the agricultural economy can reduce ability to adopt certain practices

« Appropriation of funding changes can impact support to on-farm demonstrations, technology support and 4-H youth programs

« Government regulations can have significant impact on water management

« Competition for water resources can impact water management on farms

« Assignments to other programs can impact the staff support for these programs

« Computer management tools for row-crop producers are critical for risk management and agricultural sustainability

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

1. Evaluation Studies Planned

- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Case Study

Description

In some cases there will be an evaluation form that is completed by those attending a meeting. A general evaluation of the effectiveness of a presentation will be determined based on the questions and discussion that occurs. The on-farm assistance that is provided will be evaluated on the performance of the technology and/or engineering that is implemented and the cooperators level of satisfaction. Some situations will provide the opportunity to collect data that will be used for evaluation. Evaluation of decision support tools will be based on number of users and the comments they provide regarding the usefulness and effectiveness of the decision support tools. Yearly evaluations of CES program measures will be done through routine reporting by staff of programming efforts and accomplishments. Staff will be encouraged to report success stories associated with the goals of this program.

2. Data Collection Methods

- Observation
- Case Study
- Sampling
- On-Site
- Unstructured

Description

Field data will be collected when possible, typically as a sampling, in order to compare new technology and/or engineering to standard practices or systems. Notes and records will be kept of observations made when implementing new technology and/or engineering and this will usually be combined with case studies that include unstructured interviews with participants. On-site surveys will be conducted at many of the field tours, work shops and educational meetings.