

# 2009 University of Arkansas at Pine Bluff Combined Research and Extension Annual Report of Accomplishments and Results

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## I. Report Overview

### 1. Executive Summary

The School of Agriculture, Fisheries and Human Science administers the 1890 research and Extension programs at the University of Arkansas at Pine Bluff. The School consists of three academic departments, Agriculture, Fisheries and Human Science. Federal, state and private funds of more than \$5.3 million supported sixty-six ongoing projects with most of the research projects conducted at the UAPB campus site, with some activities occurring at the UAPB Lonoke and Marianna farm sites. Additional studies were conducted on cooperating farm sites in Jefferson, Lee, St. Francis, Monroe and Phillips counties and with other institutions such as the Felsenthal National Wildlife Refuge.

Faculty submitted external grant proposals which resulted in twenty-three newly funded projects that added \$2.8 million in funding to support Research and Extension activities. The knowledge gained by these research activities were extended to families and communities through a variety of outreach and Extension programs. The extension program has structured programs in 29 counties with staff housed in 10 counties.

Research and Extension in Agriculture are conducted in the areas of plant science, animal science and agricultural economics. The efforts in the Department of Human Science are directed toward human nutrition, food safety and family life.

The Agriculture and Human Science components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited resource farmers and disadvantaged families and youth. The Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing as an avenue for enhancing tourism as an economic engine for the state. Research and Extension in Agriculture are conducted in the areas of plant science, animal science and agricultural economics. The efforts in the Department of Human Science are directed toward human nutrition, food safety and family life. The Agriculture and Human Science components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited-resource farmers and disadvantaged families and youth. The Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing as an avenue for enhancing tourism as an economic engine for the state.

#### Total Actual Amount of professional FTEs/SYs for this State

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	23.5	0.0	21.3
Actual	0.0	12.3	0.0	14.7

## II. Merit Review Process

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

- Internal University Panel
- External University Panel
- Expert Peer Review

### 2. Brief Explanation

Our research and Extension programs are monitored annually through a performance appraisal system that assures adherence to goals planned. Each department in the school of Agriculture, Fisheries and Human Sciences has an internal peer review system that evaluates research proposals prior to their implementation. A peer review panel process is in place to review extension publications and internal research publications.

The Merit Review Process in the Aquaculture/Fisheries Center resulted in review of 22 manuscripts

accepted for publication and 16 manuscripts that were subsequently submitted for consideration in refereed journals and 18 proposals submitted to competitive funding programs. In preparation for offering a Ph.D. in Aquaculture/Fisheries, the University recently requested the modification of the University of Arkansas at Pine Bluff Role and Scope to include offering one Ph.D. degree. The request for the role and scope change to allow for a Ph.D. program grew from demand by stakeholders in Arkansas whose industry depends upon the scientific research and extension efforts of the UAPB Aquaculture/Fisheries Center. This request is further rooted in the University of Arkansas at Pine Bluff's land-grant and expanded mission which charges the University to develop innovative activities and use technology to help solve problems. This request is related to the economic growth of the Arkansas Delta through its aquaculture/fisheries industry. The UAPB Aquaculture/Fisheries Center of Excellence is a key partner of the aquaculture industry and natural resource managers in Arkansas. Given the strong support for the Ph.D. program provided by these institutions and alliances, a Ph.D. program in Aquaculture/Fisheries will serve to offer expanded science based support for economic growth of the state, region, and nation.

### III. Stakeholder Input

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder individuals
- Other (Groups invited to seminars and Demonstrations)

#### Brief explanation.

The Interim Research Director of the School of Agriculture, Fisheries and Human Sciences has served in this position since July 2008. The Interim Director used the formal stakeholder input developed by the Agriculture Research & Extension Council and the Aquaculture-Fisheries Center of Excellence Advisory Committee as external advisors for the School's extension and research programs. He also evaluated the makeup of these two stakeholder groups for effectiveness in the input process. Although both stakeholder groups were effective, the Agricultural group's membership has been dissolved and new members were appointed. The appointment of new members was necessary due to the moderate level of participation by former members. Therefore, this year we are currently in the process of receiving program input for the upcoming year from the newly appointed membership.

The UAPB Aquaculture/Fisheries Center (AFC) prides itself on the level, scope, and effectiveness of its interactions with stakeholders. Input and interaction with stakeholders occurs on an almost daily basis with personnel in the Center. Individual farmers, representatives of trade associations, and board members interact frequently with Center Researchers and Extension Specialists. The interaction often is initiated with a request for some specific type of information. The specific questions often expand into broader discussions as the state of knowledge in particular areas through which additional research needs become readily apparent. For the natural fisheries Research and Extension areas, the primary stakeholder defined for the UAPB Aquaculture/Fisheries Center is the Arkansas Game and Fish Commission (AGFC). The increased interaction with the Arkansas Game and Fish Commission in recent years has facilitated greater communications. Formal input is obtained through the representation of the Arkansas Game and Fish Commission on UAPB's National Aquaculture/Fisheries Advisory Council. Additional opportunities for interaction and input are available at the statewide meeting of the Arkansas Chapter of the American Fisheries Society (AFS). Many AGFC managers and biologists attend these meetings. Also, the increasing involvement of Center scientists on committees of the Southern Division of the AFS and at the national level provide opportunities for additional input because a number of AGFC personnel continue to be active in those settings.

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

##### 1. Method to identify individuals and groups

- Use Advisory Committees
- Open Listening Sessions
- Use Surveys

## Brief explanation.

Stakeholder input is a core component of all 1890 research and Extension programs. Means for acquiring input varies depending upon the nature of the research or Extension program and the diversity of relevant stakeholders. These include local and state agencies, community groups, producers and other targeted audiences, as well as business and industry groups. Producer meetings, advisory groups, conferences, and focus group discussions are major means for gaining input. Our stakeholder input process is structured individually by departments/schools to represent the differences in audiences served. This approach is taken because the clientele needs for research and Extension assistance in programs other than aquaculture are broad in scope, local in nature and geographically limited. While the Aquaculture Program provides research and Extension support for all aquaculture producers in the state, other programs support under-served and diverse audiences in a specific number of counties.

### The Agriculture Research and Extension Advisory Council (AREAC)

The AREAC was originally organized in 2003 to add structure to the stakeholder input process for Research and Extension programs in agriculture. The Council formally meets once a year, but members are in continuous contact with Research and Extension faculty and administrators on a less formal basis. The AREAC was re-organized in 2010 with only slight changes in the membership structure that would allow the Council to be more responsive to the research and outreach needs of the School of Agriculture, Fisheries and Human Sciences. Members will serve on the Council on a three year rotating basis. Membership includes seven (7) producers engaged in a variety of agricultural enterprises (i.e. alternative crops, row crops, livestock, etc.) two (2) current and retired Extension professionals (one from 1890 and one from 1862) two (2) federal agency (NRCS, FSA) representatives, four state agency (Arkansas Department of Environmental Quality, Rural Development, Arkansas Land and Farm Development, and Arkansas Natural Resources Commission) representatives and two (2) industry (Monsanto, Delta Yams) representatives. The broad based representation of Council membership provides a broadened perspective of challenges facing producers and promotes the creation of partnerships to address the challenges. The re-organization of the Agriculture Research and Extension Advisory Council (AREAC) is currently underway. Recruiting new membership, organizing a rotation of terms for members and evaluation of their participation will strengthen this group as an integral stakeholder input group.

### The Aquaculture-Fisheries Center of Excellence Advisory Committee

The primary advisory committee that provides feedback and input into the UAPB Aquaculture/Fisheries Program is the National Aquaculture/Fisheries Advisory Council. It includes representation from catfish, baitfish, and sportfish farms, feed mills, Arkansas Game and Fish Commission, U.S. Fish and Wildlife Service, and other university programs. Some committee members also serve as representatives for other state and national aquaculture industry organizations, so that these individuals contribute a much broader perspective to advisory committee meetings than their formal capacity might otherwise suggest. At the most recent meeting on February 25, recommendation included continued work on new feed formulation, marketing structures, cash flow and financial management, diseases, new chemicals approved for non-food fish, new hatchery techniques for public stocking programs, and more training for AGFC biologists. Lake Village, Arkansas, to plan the mid-year and annual educational meetings that are hosted by UAPB for the Catfish Farmers of Arkansas. The Chicot County Extension programs also derive their input from this committee's advice. Lonoke County gain stakeholder input into program development from these meetings. The Lonoke County Agricultural Office, the operates as part of the 1862 State Extension Service also hosts an annual advisory committee meeting to acquire aquaculture industry input and feedback for their Extension program. UAPB Aquaculture/Fisheries Center staff is invited to participate in these meetings to facilitate information transfer between the 1890 Cooperative Extension Program, the 1862 State Extension Service and industry members.

In addition to the National Fisheries Advisory Council, there are a number of advisory subcommittees that specialize in specific areas and meet regularly to contribute towards the Aquaculture/Fisheries Center's program planning and development. These include the UAPB Facilities Subcommittee, the Catfish Subcommittee, and the Lonoke Aquaculture Subcommittee. Members of the Facilities Subcommittee meet on a regular basis to plan UAPB Aquaculture/Fisheries Center facility expansion and develop resources for new facilities. The Catfish Subcommittee meets twice a year and the Lonoke Aquaculture Subcommittee meets once a year to plan the annual UAPB Lonoke Aquaculture workshop, which is primarily focused on bait and ornamental fish aquaculture.

### The Young Scholars Advisory Committee Structure

A Young Scholars Task Force, including some of the children and parents enrolled in the program, oversees the planning, implementation and evaluation of the program in both counties. One of the children serves as chair of the task force while another child serves as secretary. In addition to program parents and children, membership

includes representatives of partnering agencies, governmental, officials, and state legislators. Our specialists in agriculture, family and community programs work with 1862 county agents, as requested, to organize clientele groups through community-based organizations, schools and the faith-based community. Both research and Extension programs in Aquaculture/Fisheries and in Agriculture and the Family and Consumer Sciences Extension program utilize an advisory committee structure as a major component of the stakeholder input process. The Human Sciences Research program employs other mechanisms to obtain stakeholder input.

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

**1. Methods for collecting Stakeholder Input**

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals

**Brief explanation.**

Informal methods of collecting stakeholder input occur regularly with faculty, researchers and extension specialists interacting with clientele during program presentations, direct farm contacts and field days. Individual department advisory committees have been utilized for individual program input. Examples of this have been provided in other sections of this report.

**3. A statement of how the input will be considered**

- In the Budget Process
- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

**Brief explanation.**

Informal input from stakeholders is presented and discussed at formal meetings with research faculty and staff. Strategies will be developed to address identified concerns as appropriate. Faculty are represented on all structured committees for purposes of participating in the discussion and gathering the input from stakeholders that will later be presented back to faculty and staff. One example of input from a structured committee currently being implemented is the Foundation Seed program for sweet potatoes. The February 2006 meeting of the Agriculture, Research and Extension Advisory Committee raised the issue of support for the sweet potato industry emerging in Eastern Arkansas. The input from the session was incorporated into outreach efforts (more extensive efforts with Sweet Potatoes, enhanced technical support for value-added processing, and expansion of the role and geographic scope of the Small-Farm Program). Each issue was addressed through program initiatives as allowed by available funding. As a result of the above efforts, the University has received state funding to develop a Foundation Seed Project for sweet potatoes in Arkansas. The project will provide disease free, mutation free sweet potato planting material to producers that will multiply these materials and in turn provide the multiplied planting material to the Arkansas community of sweet potato farmers.

**Brief Explanation of what you learned from your Stakeholders**

Input from stakeholders through the agricultural Extension agents and program assistants in the field continue to play a major part in program development. The group of farmers and packing house operators continue to voice the need to support the growing sweet potato production in Arkansas. Sweet potato research was expanded in the area of product development and the Extension program has given increased attention to farmer production problems.

The Aquaculture-Fisheries Advisory Committee continues outstanding input for the research and Extension programs. This year the Committee focused on the continued development of the Ph.D. program in Aquaculture-Fisheries and the economic plight of producers in the region. The Committee strongly supported the development of this graduate program because direct impact it would have on the research and Extension.

## IV. Expenditure Summary

<b>1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)</b>			
<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
0	1745796	0	2026177

<b>2. Totaled Actual dollars from Planned Programs Inputs</b>				
	<b>Extension</b>		<b>Research</b>	
	<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
<b>Actual Formula</b>	0	1815073	0	2057282
<b>Actual Matching</b>	0	1561120	0	1837968
<b>Actual All Other</b>	0	294338	0	0
<b>Total Actual Expended</b>	0	3670531	0	3895250

<b>3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from</b>				
<b>Carryover</b>	0	286999	0	387047

## V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Horticulture Production
2	Food Animal Production and Management
3	Families, Youth, and Communities
4	Human Nutrition
5	Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs
6	Alternative Crop Production
7	Childhood Obesity
8	Small Farm Program
9	Extension Livestock Management Program
10	Food Safety
11	Reduce Losses Due to Catfish Diseases
12	Agricultural Policy
13	Breeding and Biotechnology
14	Aquaculture Equipment and Information Development Program
15	Improving Hatchery Production Efficiency
16	Improving Disease Status for Baitfish Production and Marketing
17	Controlling Predators of Larval Fish
18	Research Verification
19	Improving Management Techniques for Baitfish
20	Aquaculture Alternatives in Arkansas
21	Climate Change
22	Improving Largemouth Bass Fishing in the Arkansas River
23	Cropping Systems
24	1890 Family and Child Development Program
25	Arkansas Ag Adventures - Agricultural Awareness
26	Managing Small Impoundments for Recreational Fishing
27	Family Resource Management
28	Global Food Security and Hunger
29	Food Safety in Aquaculture

**V(A). Planned Program (Summary)****Program # 1****1. Name of the Planned Program**

Horticulture Production

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
	<b>Total</b>				

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	0.0	1.7	0.0	0.1
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

- 1). Conduct training for county extension staff, master gardeners, small-scale and limited-resource farmers, and 4-H club members.
- 2). Write monthly news columns/articles on various production issues on small fruits and vegetables and develop and review horticultural crops publications/factsheets.
- 3). Conduct farm visits.
- 4). Conduct research on selected horticultural crops to determine the best adapted cultivars for small-scale and limited-resource farmers.

## 2. Brief description of the target audience

The target audience is the small-scale and limited-resource farmers. Many of these individuals lack adequate economic, technical or social resources to maintain viable operations on row-crops. Horticultural crop production will help these farmers increase farm profitability and economic status.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	175	200	20	30
<b>Actual</b>	0	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

##### Patents listed

{No Data Entered}

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	0	1	
<b>Actual</b>	0	1	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

###### Output Measure

- Increase diversity of horticultural crops produced by limited-resource and small-scale farmers in Eastern and Southern Arkansas.  
Not reporting on this Output for this Annual Report

##### Output #2

###### Output Measure

- Increase the number of limited-resource and small-scale farmers participating in local markets (farmers' markets, pick your own operations, road side stands etc.).  
Not reporting on this Output for this Annual Report



### **Output #3**

#### **Output Measure**

- Increase average quantity (lbs.) of marketable horticultural crops produced by each limited-resource or small-scale farmer in Eastern and Southern Arkansas.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Increase horticultural crop production (percentage) by small-scale and limited resource farmers,
2	Increase economic opportunity and quality of life (percentage)for limited-resource farmers by improving their farm profitability.
3	Recommend additional crop/cultivar for small-scale and limited resource farmers in Eastern and Southern AR.

### **Outcome #1**

#### **1. Outcome Measures**

Increase horticultural crop production (percentage) by small-scale and limited resource farmers,

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Increase economic opportunity and quality of life (percentage) for limited-resource farmers by improving their farm profitability.

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Recommend additional crop/cultivar for small-scale and limited resource farmers in Eastern and Southern AR.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

### **Evaluation Results**

### **Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 2****1. Name of the Planned Program**

Food Animal Production and Management

**V(B). Program Knowledge Area(s)**

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

## 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

## 1. Brief description of the Activity

Conduct research experiments and production demonstrations on lower cost feed rations for goats and swine. Continue analysis of the experiments completed in 2007.

## 2. Brief description of the target audience

The targeted audience will include high school students, college students, Extension agents, and livestock farmers.

**V(E). Planned Program (Outputs)**

## 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	65	150	160	50
<b>Actual</b>	0	0	0	0

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

### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

### Patents listed

{No Data Entered}

## 3. Publications (Standard General Output Measure)

### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	1	0	
<b>Actual</b>	1	0	0

## V(F). State Defined Outputs

### Output Target

#### Output #1

##### Output Measure

- Number of papers,abstracts,reports and conference presentations  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	There will be expected reduction in the cost of production (input) relative to the meat goats and pigs which will result to improve the economic earnings of the small farmers.

## **Outcome #1**

### **1. Outcome Measures**

There will be expected reduction in the cost of production (input) relative to the meat goats and pigs which will result to improve the economic earnings of the small farmers.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

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

#### **Brief Explanation**

{No Data Entered}

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

1. Evaluation Studies Planned
  - After Only (post program)

### **Evaluation Results**

### **Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 3****1. Name of the Planned Program**

Families, Youth, and Communities

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
801	Individual and Family Resource Management		30%		0%
802	Human Development and Family Well-Being		20%		100%
806	Youth Development		50%		0%
	<b>Total</b>		100%		100%

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	0.0	0.0	0.0	1.3
Actual	0.0	1.6	0.0	0.7

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
0	336239	0	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
0	291403	0	29421
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Two focused program areas were addressed in the 1890 Family and Child Development Program. These included Teens on the Go and the Young Scholars Program. The Teens on the Go is a newsletter series that has been developed for the last 31 years for students in grades 7-12. Six issues of the newsletter were developed and distributed. The Young Scholars Program is in its 14th year and is implemented in a housing project in Monroe County. The children, referred to as Young Scholars, meet 5 days a week in a year long after school program that emphasizes math and science skills. Parents of the children meet weekly in small group sessions and focus on the curriculum for the children as well as parent education, stress management, coping and job related skills, family relationships, and economic and self sufficiency skills. The 1890 Family Resource Management Program used a variety of methods to reach limited resource families, youth and small land/property owners. These methods included workshops and seminars as well as publications that were written of low literacy individuals that provided information on money



management. The AG Adventure Program conducted a number of educational activities. These were classes, field days and demonstrations at the university's Small Farm Outreach and Water Management Center, camps at the Arkansas 4 H Center, exhibits at educational fairs/conferences, and community and classroom workshops. These activities were offered to elementary and high school students, community youth groups and adults. Data were collected and analyzed in the research project, Perception of Quality in Early Childhood Education Programs, and two hour site observation schedules made for those sites indicating an interest in national accreditation. Results of the project will be disseminated.

**2. Brief description of the target audience**

The target audiences included students in grades 4-12 for the AG Adventure Program and the newsletter series, Teens on the Go, low-income children and their families in the Young Scholars Program, family day care homes, Head Start and day care center directors, their staff, enrolled children, and parents in Southeast Arkansas participating in the research project, Perception of Quality in Early Childhood Education Programs, and limited resource families, youth and small land/property owners in select counties in the Delta in the 1890 Family Resource Management Program.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	134	135	500	500
<b>Actual</b>	619	645	955	10800

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	6	0	6

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Day care home operators, day care center directors, centers' employees, children in day care centers, teachers, and parents of family day care home, day care, and headstart centers in Jefferson County and Southeast Arkansas.

Year	Target	Actual
2009	500	10800

**Output #2**

**Output Measure**

- Many delivery modes were used in the 1890 Family Resource Management, 1890 Family and Child Development and AG Adventure Programs to reach the target audience. Delivery methods in these programs included workshops, seminars, trainings, camps, classroom and other presentations. The research project, Perception of Quality in Early Childhood Education Programs collected and analyzed data regarding the perception of quality in early childhood education programs in Southeast Arkansas.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	10800

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	For child care facilities to improve the quality of child care after becoming more aware of practices that enhance quality of care.
2	To identify quality practices present in early childhood programs in Southeast Arkansas and to present these practices for adoption by early childhood providers in the region.
3	To make youth aware of careers in agriculture in th AG Adventure program. Forty percent of the 800 participants in th 1890 Family Resource Management Program will gain knowledge in managing their money. Forty percent of the children in the Young Scholars Program will increase in school performance and 40 percent of the families will report being able to meet their financial obligations.

**Outcome #1**

**1. Outcome Measures**

For child care facilities to improve the quality of child care after becoming more aware of practices that enhance quality of care.

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	376	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
802	Human Development and Family Well-Being

**Outcome #2**

**1. Outcome Measures**

To identify quality practices present in early childhood programs in Southeast Arkansas and to present these practices for adoption by early childhood providers in the region.

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	0	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
802	Human Development and Family Well-Being

**Outcome #3**

**1. Outcome Measures**

To make youth aware of careers in agriculture in th AG Adventure program. Forty percent of the 800 participants in th 1890 Family Resource Management Program will gain knowledge in managing their money. Forty percent of the children in the Young Scholars Program will increase in school performance and 40 percent of the families will report being able to meet their financial obligations.

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	10800

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Many individuals are experiencing tough economic times due to record lay offs, unemployment rates and closing of businesses. Low income families, youth and small land/property owners are hit the hardest. The future of the country depends on the educattional success of today's youth who need decision making skills.

**What has been done**

The programs in this area are dedicated to helping youth acheive educational success. These programs build strong families and supportive communities and add value to society.

**Results**

Ten thousand youth received the 6 issues of the newsletter, Teens on the Go. These issues dealt with anger management, sexually transmitted infections, peer pressure, drug abuse, online privacy, and stress when a parent loses a job. Teenagers indicated that the newsletter helped them make better decisions. Children in the Young Scholars Program increased performance in school. Some made the honor roll for the first time. Parents indicated that food last now to the end of the month. Participants in the 1890 Family Resource Management Program reported using a budget and saving some money each payday.

#### 4. Associated Knowledge Areas

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

#### V(H). Planned Program (External Factors)

##### External factors which affected outcomes

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

##### Brief Explanation

Educational frameworks, school policies, natural disasters, changing economy, and loss of jobs can affect the outcome of the planned program.

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

##### 1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Other (Open ended survey)

#### Evaluation Results

Some of the programs use pre and post test, self-reporting and observation to evaluate the knowledge base of participants. The Young Scholars Program intends to use Focus Groups as a means of formally evaluating the program.

#### Key Items of Evaluation

Fory two percent of the children in the Young Scholars Program increased in school performance. Some of the children made the honor roll for the frist time. When the program was first implemented many program families, although they received food stamps, reported not having food last to the end of the month. Today this seldom happens.

**V(A). Planned Program (Summary)**

**Program # 4**

**1. Name of the Planned Program**

Human Nutrition

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components				
703	Nutrition Education and Behavior				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.9
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Microbiological testing - selection of yogurt containing effective probiotics to reduce lactose intolerance; Recruitement of participants to the feeding study; Survey on self-reporting symptoms of lactose intolerance; Testing urine galactose; feeding study; reporting of lactose symptoms during the feeding study; workshops on efficacy of yogurts containing probiotics to reduce lactose intolerance and control weight ; Development of nutrition education program (nutrion lessons, nutrition messages, program identifiers); Workshops on health benefits of yogurts containing probiotics in adults (Media announcements, Sampling of yogurts, Shopping education).

**2. Brief description of the target audience**

UAPB students (18-30 years old) made up of 50% males and 50% females who have not reached their menopause. Participants will be recruited through advertisement on campus using bulletin boards, internet and announcements on UAPB radio and television.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	40	0	0	0
Actual	0	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

##### Patents listed

{No Data Entered}

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

###### Output Measure

- Microbiological testing of yogurts for effective probiotics against lactose intolerance  
Not reporting on this Output for this Annual Report

##### Output #2

###### Output Measure

- Recruitment of participants for the feeding study  
Not reporting on this Output for this Annual Report

##### Output #3

###### Output Measure

- Feeding study  
Not reporting on this Output for this Annual Report



**Output #4**

**Output Measure**

- Workshops on yogurts containing probiotics  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	increased consumption of yogurt, reduced symptoms of lactose intolerance, increased of urine galactose, reduced breath hydrogen, unaltered blood glucose concentration, increase calcium intake, reduced Body Mass Index (BMI), increased Bone density, reduced weight gain, awareness, Better understanding of health benefits of some probiotics in yogurts, diet change.

## **Outcome #1**

### **1. Outcome Measures**

increased consumption of yogurt, reduced symptoms of lactose intolerance, increased of urine galactose, reduced breath hydrogen, unaltered blood glucose concentration, increase calcium intake, reduced Body Mass Index (BMI), increased Bone density, reduced weight gain, awareness, Better understanding of health benefits of some probiotics in yogurts, diet change.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Other (students dropout from UAPB)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 5**

**1. Name of the Planned Program**

Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		20%		0%
307	Animal Management Systems		20%		0%
308	Improved Animal Products (Before Harvest)		20%		0%
601	Economics of Agricultural Production and Farm Management		15%		0%
602	Business Management, Finance, and Taxation		15%		0%
603	Market Economics		10%		0%
<b>Total</b>			100%		0%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.8	0.0	0.7
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

- Conduct field trials
- Conduct method demonstrations
- Publish results
- Give presentations

- Develop individual enterprise budgets for catfish producers
- Develop news articles on improving farm efficiency
- Develop producer workshop targeting efficiency improvements for producers
- Work with catfish industry to develop copper sulfate use protocol
- Work with fish processing plants in valuing use of copper sulfate for off flavor control.
- Work with industry supplies who manufacture copper sulfate on proper use of the product. Initially, a suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies.
  1. Candidates for alternative protein sources are cuphea meal, soybean concentrates, poultry meals, and invertebrate meal.
  2. Candidates for lipid sources are non-fish sources of n-3 fatty acids such as canola, flaxseed oil, and algal concentrates.
  3. Prebiotics and probiotics may include Grobiotic™, Daily™, and Bacillus spores.
- Conduct survey of fish and seafood consumers
- Develop market-model for catfish industry (known as US Catfish Model)
- Analyzed effects of various policy options on US catfish industry
- Analyzed market potential of live catfish in north-eastern USA

**2. Brief description of the target audience**

- Catfish farmers throughout Arkansas
- CountyExtension agents
- Grocery store managers
- Consumers
- Commercial catfish producers
- Interested potential producers
- Commercial Bankers
- Copper sulfate manufacturers and suppliers

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	16	100	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

## **V(F). State Defined Outputs**

### **Output Target**

#### **Output #1**

##### **Output Measure**

- Number of Refereed Journal Articles  
Not reporting on this Output for this Annual Report

#### **Output #2**

##### **Output Measure**

- Number of Abstracts Published  
Not reporting on this Output for this Annual Report

#### **Output #3**

##### **Output Measure**

- Number of Presentations at Scientific Meetings  
Not reporting on this Output for this Annual Report

#### **Output #4**

##### **Output Measure**

- Number of Trade Magazine Articles  
Not reporting on this Output for this Annual Report

#### **Output #5**

##### **Output Measure**

- Number of Catfish Farms Adopting Recommendations  
Not reporting on this Output for this Annual Report

#### **Output #6**

##### **Output Measure**

- Number of Catfish Acres Using Recommendations  
Not reporting on this Output for this Annual Report

#### **Output #7**

##### **Output Measure**

- Number of Ponds in Copper Sulfate Demonstrations  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Number of commercial pond owners informed of the options to improve water circulation through aerator placement
2	Number of farm managers considering increased pond circulation in the placement of new aerators
3	Number of producers responding to project results
4	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
5	Percent of CFAR members aware of effect aerator placement has on circulation
6	Number of Farmers Gaining Access to Catfish Market Information
7	Number of Stores Adopting Recommendations
8	Number of Stores Increasing Sales of Catfish
9	Number of Arkansans Gaining Access to Catfish Management Information
10	Number of Arkansans Adopting Management Recommendations
11	Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management
12	Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

**Outcome #1**

**1. Outcome Measures**

Number of commercial pond owners informed of the options to improve water circulation through aerator placement

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Number of farm managers considering increased pond circulation in the placement of new aerators

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Number of producers responding to project results

Not Reporting on this Outcome Measure

**Outcome #4**

**1. Outcome Measures**

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Not Reporting on this Outcome Measure

**Outcome #5**

**1. Outcome Measures**

Percent of CFAR members aware of effect aerator placement has on circulation

Not Reporting on this Outcome Measure

**Outcome #6**

**1. Outcome Measures**

Number of Farmers Gaining Access to Catfish Market Information

Not Reporting on this Outcome Measure



**Outcome #7**

**1. Outcome Measures**

Number of Stores Adopting Recommendations

Not Reporting on this Outcome Measure

**Outcome #8**

**1. Outcome Measures**

Number of Stores Increasing Sales of Catfish

Not Reporting on this Outcome Measure

**Outcome #9**

**1. Outcome Measures**

Number of Arkansans Gaining Access to Catfish Management Information

Not Reporting on this Outcome Measure

**Outcome #10**

**1. Outcome Measures**

Number of Arkansans Adopting Management Recommendations

Not Reporting on this Outcome Measure

**Outcome #11**

**1. Outcome Measures**

Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management

Not Reporting on this Outcome Measure

**Outcome #12**

**1. Outcome Measures**

Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

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

#### 1. Evaluation Studies Planned

- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 6**

**1. Name of the Planned Program**

Alternative Crop Production

**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				
205	Plant Management Systems				
211	Insects, Mites, and Other Arthropods Affecting Plants				
601	Economics of Agricultural Production and Farm Management				
<b>Total</b>					

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.1
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Conduct research experiments; make presentations in conferences and meetings; conduct workshops and field days; develop Extension publications; and develop research publications.

The first study will be initiated to identify vegetable rotations for high yields and profit for the small farmers. The treatments are: (1) Continuous sweet potato &ndash fall greens sequence (SWP followed by SWP); (2) Continuous squash &ndash fall greens sequence (SQ followed by SQ); (3) Continuous southern peas - fall greens sequence (SP followed by SP); (4) Continuous sweet corn-southern peas-fall greens (SWC followed by SWC); (5) SWP rotated with SP; (6) SQ rotated with SP. The second

study will evaluate flower and ornamental crops considered to be popular in the lower Mississippi Delta region. Additional experiments will also be conducted to develop a crop protection system against economically beneficial pests using the natural resources. Several natural resources will be considered and determined to improve the efficiency of pest management. The suitable natural resources will be modified as necessary for field use. Establish database for predominant pests in local ornamental and flowering plants. The ornamentals those may have resistant or tolerant against insects' pests, can be identified and extracted to developed future non-restricted insecticidal treatment. The crop have tolerant against pests will be use to developing an attractant to decrease population of the targeted pests.

## 2. Brief description of the target audience

Small Farms and Limited Resource Farmers. Limited resources farmers grow vegetables, small fruits and ornamentals as alternatives to growing row crops. High potential return per acre can be obtained with minimum investment provided best management practices such as crop rotations and insect control are used.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	50	75	20	50
Actual	0	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	2	2	
Actual	2	2	0

### V(F). State Defined Outputs

#### Output Target

#### Output #1

##### Output Measure

- The number of LRFs that adopt vegetable rotations/planting sequences, and insect control practices developed by this research.

Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of contacts with clientele at workshop, field days, demonstrations, etc.  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Published research articles, extension publication and present research data at professional meetings.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	1) Fifty percent of the UAPB LRF's clientele adopt the rotation and insect control practices after five years.
2	2)2-3% of UAPB LRF's will adopt ornamental production after five years.
3	3)

### **Outcome #1**

#### **1. Outcome Measures**

1) Fifty percent of the UAPB LRF's clientele adopt the rotation and insect control practices after five years.

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

2)2-3% of UAPB LRF's will adopt ornamental production after five years.

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

3)

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

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

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 7****1. Name of the Planned Program**

Childhood Obesity

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
202	Plant Genetic Resources		50%		25%
502	New and Improved Food Products		50%		15%
701	Nutrient Composition of Food		0%		20%
702	Requirements and Function of Nutrients and Other Food Components		0%		32%
703	Nutrition Education and Behavior		0%		8%
	<b>Total</b>		100%		100%

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	0.0	0.1	0.0	2.1
Actual	0.0	0.1	0.0	1.7

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
0	3927	0	297544
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
0	0	0	144080
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

The goal of the project was to develop and test new varieties of bitter melon and hot pepper for use in nutritional intervention through the introduction of specialty herbs and vegetables for better health. Research was designed to compare selected bitter melon varieties used in a proven beef-stew recipe and also to select promising varieties of hot pepper for yield potential and quality characteristics. Beef-stews cooked with white or green bitter melon, served with an experimental gourd salad, were compared for taste and consumer acceptability. Beef-stews were served to 69 participants of the 2009 Field Day for taste-testing



and demonstration. Most respondents liked the stew cooked with white bitter melon because of the better flavor and lower bitterness of the white type. It would be interesting to know if there were genetic associations between the color and Momordicin contents of bitter melon.

In the hot pepper field experiments, 12 uniform lines out of 44 advanced breeding lines were selected as promising future varieties. These promising lines consisting of quality characteristics such as yellow, orange, purple, and black pigmentations of the peppers indicate special nutritional properties. Samples of these peppers have been preserved for phytochemical analyses. In a Habanera/Scotch-bonnet breeding experiment, 62 plants were selected from 19 selected progeny lines out of 70 segregating lines planted. Selection of hot pepper varieties for yield potential and special nutritional qualities will be the immediate next focus of this project. About 200 people consisting of research colleagues, students, home gardeners, and limited resource farmers visited the field experiments at in 2009.

Awareness of lactose intolerance at the campus of the University of Arkansas at Pine Bluff (UAPB) has been built through communication in classes of Nutrition and Wellness HUSC 1311 (20 students) and Elementary Nutrition HUSC 2311 (80 students) spring and fall 2009. This fall, the whole community of students on campus will be informed of the project during the campus Health Fair. A survey is being developed to interview students at the University of Arkansas at Pine Bluff about lactose intolerance. This questionnaire will be adapted from the "Questionnaire on lactose intolerance" developed by the Arthur Haulot Institute dietary-nutrition department in Brussels (<http://www.medisport.be/questionarya.html>). The questionnaire will be tested for validity and reliability before being administered to UAPB students by the end of spring semester 2010. Participants will be declared lactose intolerant based results of survey-questionnaire and on breath hydrogen test using Micro H<sub>2</sub> (Micro Medical Limited, Chatman, UK) instrument. Selected students (at least 30) will participate in a feeding study to find out the efficacy of yogurt containing probiotics to reduce lactose intolerance and weight gain. Microbiological testing to select yogurts containing effective probiotics to reduce lactose intolerance will be conducted this Summer 2010.

## 2. Brief description of the target audience

Targeted audiences have been leaders of the agricultural, academic, and social communities including small-scale farmers, home gardeners, and extension agents in the Lower Mississippi Delta. Food scientists, nutritionists, and health activists were also addressed.

UAPB students (18-30 years old) made up of 50% males and 50% females who have not reached their menopause. Participants will be recruited through advertisement on campus using bulletin boards, internet and announcements on UAPB radio and television.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	0	0	0	0
Actual	100	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

#### 3. Publications (Standard General Output Measure)

**Number of Peer Reviewed Publications**

<b>2009</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	1	1	
<b>Actual</b>	0	1	1

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- # of research publications

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	1	1

**Output #2**

**Output Measure**

- # of promising crop line identified

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	3	0

**Output #3**

**Output Measure**

- # of successful food recipes

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	1	1

**Output #4**

**Output Measure**

- # of yogurts to be microbiologically tested against lactose intolerance

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	0

**Output #5**

**Output Measure**

- # of participants recruited for the feeding study

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	0

**Output #6**

**Output Measure**

- # of participants in the feeding study  
Not reporting on this Output for this Annual Report

**Output #7**

**Output Measure**

- # of participants in workshop on yogurts containing probiotics

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	0

**Output #8**

**Output Measure**

- # of panelists for the acceptability study

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	0

**Output #9**

**Output Measure**

- # of participants in workshops to increase consumption of nutrient-dense dairy products

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	0

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	# of people have knowledge about the new crop lines
2	# of people accept/like to the new crop lines
3	# of people adopted the new recipes in their daily diets
4	# of students at UAPB to become aware of the condition of lactose intolerance

**Outcome #1****1. Outcome Measures**

# of people have knowledge about the new crop lines

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	10	10

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

Targeted audience and clientele who have interests in new health-foods development, its special qualities, availability, and production potentials. The small farmers and home gardeners will benefit from producing, processing, and marketing the newly developed high value specialty crops.

**What has been done**

Experiments conducted in 2009 have resulted in successful identification of hot pepper varieties possessing higher yield potential and quality characteristics. The two hot pepper breeding experiments provided opportunities for the research colleagues, farmers, students, and community stakeholders the obvious progress made in the variety development. Further refinement of the recipes for the beef stew and gourd salad may offer a healthy dish for the consumers. During the 2009 summer Field Day, wide varieties of participants have had opportunities to see the research outcomes of this project.

**Results**

Seven bitter melon varieties developed and tested.

Two white and two green bitter melons have high yield potential.

Twelve varieties of hot pepper have been selected for yield trials and quality analyses.

Habanera/Scotch bonnet breeding lines exhibit extraordinary potential for new variety development.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
202	Plant Genetic Resources
502	New and Improved Food Products
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

**Outcome #2**

**1. Outcome Measures**

# of people accept/like to the new crop lines

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	0	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
202	Plant Genetic Resources
502	New and Improved Food Products
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

**Outcome #3**

**1. Outcome Measures**

# of people adopted the new recipes in their daily diets

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	0	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
202	Plant Genetic Resources
502	New and Improved Food Products
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

**Outcome #4**

**1. Outcome Measures**

# of students at UAPB to become aware of the condition of lactose intolerance

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	100

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

To change people behavior, intervention has to take place. Intervention will be applied to prevent nutritional consequences of lactose intolerance and to increase consumption of yogurt and dairy products containing effective probiotics containing effective probiotics. There are three levels in the intervention: 1/ build awareness of a health problem; 2/change lifestyles and 3/create supportive environment for a behavior change. Becoming aware of the definition, symptoms, and consequences of lactose intolerance can motivate one to find out if he/she is lactose intolerant and to look for ways to change his/her diet. As more students become aware of the condition of lactose intolerance, more students will volunteer to participate in the feeding study.

**What has been done**

Awareness of lactose intolerance at the campus of the University of Arkansas at Pine Bluff (UAPB) has been built through communication in classes of Nutrition and Wellness HUSC 1311 and Elementary Nutrition HUSC 2311 spring and fall 2009.

**Results**

At least one hundred (100) students have been informed of the condition of lactose intolerance through teaching of Nutrition and Wellness HUSC 1311 and Elementary Nutrition HUSC 2311.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

- Competing Programmatic Challenges
- Other (Researchers for phytochemical analyses were relocated and unavailable.)

**Brief Explanation**

The plant materials were collected and prepared in 2009 for phytochemical and other types of laboratory experiments. We had a MOU with Tuskegee University for hot pepper analyses; this could not be accomplished because the faculty member assigned to this work left Tuskegee university, and no other person was available at UAPB or Tuskegee University to conduct the laboratory experiments.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

**Evaluation Results**

**Key Items of Evaluation**



**V(A). Planned Program (Summary)**

**Program # 8**

**1. Name of the Planned Program**

Small Farm Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
213	Weeds Affecting Plants				
301	Reproductive Performance of Animals				
601	Economics of Agricultural Production and Farm Management				
602	Business Management, Finance, and Taxation				
<b>Total</b>					

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	5.5	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

The following activities will be conducted: educational meetings, alternative enterprise tours, newsletters, news articles, fact sheets, one-on-one assistance, assistance with loan applications, assistance in developing production plans, assistance in developing marketing plans, assistance in using USDA Program, and assistance in using CES recommendations.

**2. Brief description of the target audience**

The targeted audience for the Small Farm Program include African Americans, Hispanics, Women, and farms with gross farm sales less than \$250,000.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	7000	10000	250	300
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- THE FOLLOWING OUTPUTS WILL COME FROM THE ACTIVITIES: \* The number of farmers participating in workshops, and farm tours \* The number of farmers participating in out of state tours, and conferences \* The number of newsletters, fact sheets, and news articles produced \* The number of SDFs identified for the program \* The number of USDA Programs introduced to Farmers \* The number of field demonstrations established \* The number of progress reports developed \* The number of trained staff to assist SDFs  
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	<p>OUTCOMES WILL BE MEASURED AS FOLLOWS:</p> <ul style="list-style-type: none"> <li>*Number of farmers who submit loan applications</li> <li>*Amount of loan funds received as a result of assistance with loan application</li> <li>*Number of farmers who sign-up after being informed about conservation programs</li> <li>*Amount of income clients receive by using conservation programs</li> <li>*Number of farmers informed about alternatives enterprises</li> <li>*Number of farmers that add or do alternative enterprises after being informed</li> <li>*Number of farmers educated about estate planning</li> <li>*Number of farmers that develop an estate plan after being educated</li> <li>*Number of Farmers informed about USDA Disaster Programs</li> <li>*Number of Farmers that sign-up for Disaster Programs</li> <li>*Amount of funds received from Disaster Program</li> <li>*Number of farmers informed about Extension recommended practices</li> <li>*Number of farmers that use Extension recommended practices</li> <li>*Percent increase in income as a result of using Extension recommendations</li> </ul> <p>The long term outcome of the program is to significantly increase the profitability of SDFs and small farmers as a result of them improving their land through USDA conservation programs, obtaining finance through USDA or other programs, receiving Disaster funds when needed through USDA Programs, and using the USDA Price Support programs when needed. The farmers will also use Cooperative Extension Service recommended production practices to obtain high yields.</p>

## **Outcome #1**

### **1. Outcome Measures**

OUTCOMES WILL BE MEASURED AS FOLLOWS: \* Number of farmers who submit loan applications \* Amount of loan funds received as a result of assistance with loan application \* Number of farmers who sign-up after being informed about conservation programs \* Amount of income clients receive by using conservation programs \* Number of farmers informed about alternatives enterprises \* Number of farmers that add or do alternative enterprises after being informed \* Number of farmers educated about estate planning \* Number of farmers that develop an estate plan after being educated \* Number of Farmers informed about USDA Disaster Programs \* Number of Farmers that sign-up for Disaster Programs \* Amount of funds received from Disaster Program \* Number of farmers informed about Extension recommended practices \* Number of farmers that use Extension recommended practices \* Percent increase in income as a result of using Extension recommendations The long term outcome of the program is to significantly increase the profitability of SDFs and small farmers as a result of them improving their land through USDA conservation programs, obtaining finance through USDA or other programs, receiving Disaster funds when needed through USDA Programs, and using the USDA Price Support programs when needed. The farmers will also use Cooperative Extension Service recommended production practices to obtain high yields.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- During (during program)
- Case Study

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 9**

**1. Name of the Planned Program**

Extension Livestock Management Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals				
303	Genetic Improvement of Animals				
306	Environmental Stress in Animals				
307	Animal Management Systems				
806	Youth Development				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.0	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Primary activities with producers will be individual farm visits, educational meetings, field days, farm demonstrations, office conferences, and the preparation and/or distribution of educational materials. Primary youth activities are the Southeast District Fair, swine shows at the State Fair, the Southeast District 4-H Horse Show, and the Arkansas 4-H Veterinary Science Project activities.

**2. Brief description of the target audience**

Livestock producers. 4-H and FFA youth.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	150	25	1000	0
<b>Actual</b>	0	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

##### Patents listed

{No Data Entered}

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Output measures will be number of producers working with the program (175 annual contacts), increase in number of animals weaned per breeding age female, and increase in average weaning weight of animals in cooperating herds. Number of youth (1000 annual contacts) participating in various livestock activities. Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	The desired outcome is increased knowledge of livestock production and recommended management practices. The results of imcreased knowledge about livestock production and recommended management practices should result in better managed herds and more productive herds.

## **Outcome #1**

### **1. Outcome Measures**

The desired outcome is increased knowledge of livestock production and recommended management practices. The results of imcreased knowledge about livestock production and recommended management practices should result in better managed herds and more productive herds.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Government Regulations
- Other (market prices)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}



**V(A). Planned Program (Summary)****Program # 10****1. Name of the Planned Program**

Food Safety

**V(B). Program Knowledge Area(s)**

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies		25%		25%
502	New and Improved Food Products		25%		25%
503	Quality Maintenance in Storing and Marketing Food Products		25%		25%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins		25%		25%
<b>Total</b>			100%		100%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.1	0.0	0.5
Actual	0.0	0.3	0.0	0.7

## 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	92744	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	38679
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

## 1. Brief description of the Activity

The study was performed to determine effects of antibrowning agents to inhibit browning of fresh-cut sweetpotatoes during storage at room and refrigeration temperatures. Antibrowning agents used in this study include Sodium Chloride, N-acetyl-L-cysteine, 4-hexylresorcinol, reduced glutathione, and ascorbic acid. Varieties of sweetpotatoes used in this study include Haterias, Convington, B94-14, B14, Beauregard, and 99-35. Fresh sweetpotatoes were peeled and sliced. Treatment of antibrowning agents was done by dipping portions of sliced sweetpotatoes in different antibrowning agents. Treated and non-

treated sweetpotatoes were placed in Ziplock bags and stored at room and refrigeration temperatures. Surface color of samples were directly measured with a colorimeter over 2 weeks of storage. Color was measured using a CIE L, a, and b color, where "L" indicates lightness, "a" indicates chromaticity on a green (-) to red (+) axis, and b chromaticity on a blue (-) to yellow (+) axis. Compared with non-treated sweetpotatoes (control), color of sweetpotatoes treated with antibrowning agents were not significantly different, indicating varieties of sweetpotatoes used in this study did not occur enzymatic browning. According to this study, enzymatic browning of fresh-cut sweetpotatoes were negligible on mostly used cultivars in the U.S.

## 2. Brief description of the target audience

Fruit and vegetable growers in Arkansas and Extension specialist working in the fruit and vegetable area are also target audience. Sweetpotato growers and processors in Arkansas and nationwide are primary focus.

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	10	30	0	0
Actual	60	80	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	1	1	
Actual	0	0	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Three abstracts and three presentations at the scientific annual meetings. Three peer reviewed publications. Three presentations and/or workshops to farmers.

Year	Target	Actual
2009	12	1

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process. The target of 40 was to high. 10 is a better target.

**Outcome #1**

**1. Outcome Measures**

Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process. The target of 40 was too high. 10 is a better target.

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	10	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The value added concept is new for farmers in this region; however, as profit margins decrease for traditional production, more interest will develop. Small processors who are concerned with meeting standards of safe handling practices.

**What has been done**

Demonstrated the value added concept to farmers on field days. Workshop on food safety for small processors.

**Results**

Have developed value added jams and jellies, dehydrated blueberry, apple juice, cowpea bread, and chow chow.

**4. Associated Knowledge Areas**

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

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

**Brief Explanation**

There were no external factors that affected outcomes.

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

### **1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

### **Evaluation Results**

Evaluation results were conducted at the farm field day with participants for Chow Chow and Blueberry jam and jelly. Departmental taste testing was conducted in the Agriculture Department for Blueberry jam and jelly, cowpea bread, and apple juice. We received range of findings. Many suggested that Chow Chow needs more spices. Jam and jelly was too sweet. Cowpea bread had gritty taste. Apple juice needs more study for clarification to remove cloudiness. Additional work is being conducting driven by evaluations.

### **Key Items of Evaluation**

Processing procedure developed for Chow Chow is ready for farmer's adoption. Blueberry jam and jelly is ready for large volume production. Apple juice and cowpea bread need more study.

**V(A). Planned Program (Summary)**

**Program # 11**

**1. Name of the Planned Program**

Reduce Losses Due to Catfish Diseases

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.9	0.0	0.1
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Research will be conducted to determine the distribution of catfish trematodes and their impact on fish growth and survival and to assess the efficacy of trematode treatment methods. Extension programs will provide catfish disease diagnostic services, conduct field studies of trematode distribution and conduct education programs on trematode control.

**2. Brief description of the target audience**

Commercial catfish producers

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	500	1000	0	0
Actual	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of refereed journal articles  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of presentations  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of trade magazine articles  
Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- Number of abstracts published  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of farmers helped with catfish disease cases
2	Number of catfish ponds sampled for trematodes
3	Number of educational meetings conducted to assist farmers with trematode detection and control



### **Outcome #1**

#### **1. Outcome Measures**

Number of farmers helped with catfish disease cases

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Number of catfish ponds sampled for trematodes

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Number of educational meetings conducted to assist farmers with trematode detection and control

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Other (Regulations promulgated by APHIS)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 12**

**1. Name of the Planned Program**

Agricultural Policy

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
610	Domestic Policy Analysis				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	0.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Survey of 300 farmers that participate in the University of AR-Pine Bluff, Small Farm Project. Economic modeling and analysis of data collected will be done. Information will be disseminated to farmers via workshops, publications, pamphlets, newsletters and a farmer meeting.

**2. Brief description of the target audience**

Three-hundred (300) farmers that participate in the University of AR-Pine Bluff, Small Farm Project.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	30	30	0	0
<b>Actual</b>	0	0	0	0

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

### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

### Patents listed

{No Data Entered}

## 3. Publications (Standard General Output Measure)

### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	1	1	
<b>Actual</b>	1	1	0

## V(F). State Defined Outputs

### Output Target

#### Output #1

##### Output Measure

- Number of published journal articles on project results and analysis that are distributed to farmers.  
Not reporting on this Output for this Annual Report

#### Output #2

##### Output Measure

- Number of participants at professional conference presentations on project results and analysis.  
Not reporting on this Output for this Annual Report

#### Output #3

##### Output Measure

- Number of participants at other forums when presentations of project results and analysis are given.  
Not reporting on this Output for this Annual Report

#### Output #4

##### Output Measure

- Number of participants at stakeholder meetings and interest group forums on project results and analysis.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Changes in production and consumption behavior of minority and limited-resource farmers in response to greater awareness of agricultural policy.
2	Increased participation of minority and limited-resource farmers in agricultural programs.
3	Increased access to credit and other programs by minority and limited-resource farmers.

### **Outcome #1**

#### **1. Outcome Measures**

Changes in production and consumption behavior of minority and limited-resource farmers in response to greater awareness of agricultural policy.

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Increased participation of minority and limited-resource farmers in agricultural programs.

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Increased access to credit and other programs by minority and limited-resource farmers.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 13**

**1. Name of the Planned Program**

Breeding and Biotechnology

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms				
202	Plant Genetic Resources				
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
211	Insects, Mites, and Other Arthropods Affecting Plants				
<b>Total</b>					

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	1.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

- Conduct research experiments
  - Research publications
  - Presentation in the conferences and Field day
- Extension publications

**2. Brief description of the target audience**

Small-farm, limited resource farmers

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	50	75	25	50
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Production of improved cowpea cultivars that resist biotic and abiotic stresses. Publications in reviewed journals.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Short-term outcome measures are: 1. Establishment of plant regeneration system for different cowpea cultivars, 2. Development of transgenic protocol, 3. Identification of cultivars for breeding cowpeas with improved yield. Long-term outcome measures are the production of disease and insect-resistant, high yielding cowpeas.



## **Outcome #1**

### **1. Outcome Measures**

Short-term outcome measures are: 1. Establishment of plant regeneration system for different cowpea cultivars, 2. Development of transgenic protocol, 3. Identification of cultivars for breeding cowpeas with improved yield. Long-term outcome measures are the production of disease and insect-resistant, high yielding cowpeas.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Government Regulations

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

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

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 14****1. Name of the Planned Program**

Aquaculture Equipment and Information Development Program

**V(B). Program Knowledge Area(s)**

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment				
404	Instrumentation and Control Systems				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.3	0.0	0.3
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

## 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

## 1. Brief description of the Activity

- Further test and refine aquaculture equipment
  - Develop recommendations for appropriate use of new technologies
  - Monitor commercial production facilities adopting new technologies
  - Publish results
  - Give presentations
  - Design of computer experiments
  - Conduct computer simulations by programming
  - Reconfiguration of simulation models with feedbacks from extension specialists.

## 2. Brief description of the target audience

- Fish farmers throughout the southern region, primarily Arkansas Catfish producers
  - Arkansas Game and Fish personel
  - Research scientists
  - County Extension agents Catfish farmers

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	15	50	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of Abstract Publications  
 Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of Conference Presentations  
 Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of Refereed Journal Publications

Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- Number of publications

Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Number of Commercial Arkansas Catfish Farmers Learning About New Technologies
2	Number of Commercial Arkansas Catfish Farmers Adopting New Technologies
3	Number of Commercial Arkansas Catfish Farmers Increasing Efficiency and Profitability
4	Number of Commerical Arkansas Catfish Farmers That Learned New Methods to Access Fish Inventories
5	Number of Commercial Arkansas Fish Farmers Learning New Handheld Computer Technologies for Record Keeping
6	Number of Commercial Arkansas Catfish Farmers Accurately Assessing Their Fish Inventories
7	Number of Commerical Catfish Farmers That Utilized Hand Held Computer Technologies for Record Keeping
8	Number of Arkansas Fish Farmers who have Increased Their Management Efficiency or That Conducted Comprehensive Annual Financial and Economic Analysis Because of Better Fish Inventory Assessment Methods or the Use of Improved Compuerized Record Keeping Systems
9	Percentage of Cafish Farmers that are Informed About the Effectiveness and the Optimal Sample Size of theTrawl Sampling Method Through Extension Specialists
10	Percentage of Catfish Farmers that Effectively Adopt and Use the Optimal Sample Size of Trawl sampling for Inventory Estimation
11	Percentage of Satisfaction Rate of Farmers who Adopted the Trawl Sampling with Recommended Sample Size for Inventory Estimation
12	Number of Arkansans gaining access to needed information

**Outcome #1**

**1. Outcome Measures**

Number of Commercial Arkansas Catfish Farmers Learning About New Technologies

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Number of Commercial Arkansas Catfish Farmers Adopting New Technologies

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Number of Commercial Arkansas Catfish Farmers Increasing Efficiency and Profitability

Not Reporting on this Outcome Measure

**Outcome #4**

**1. Outcome Measures**

Number of Commercial Arkansas Catfish Farmers That Learned New Methods to Access Fish Inventories

Not Reporting on this Outcome Measure

**Outcome #5**

**1. Outcome Measures**

Number of Commercial Arkansas Fish Farmers Learning New Handheld Computer Technologies for Record Keeping

**2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	50	0

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

#### Outcome #6

##### 1. Outcome Measures

Number of Commercial Arkansas Catfish Farmers Accurately Assessing Their Fish Inventories

Not Reporting on this Outcome Measure

#### Outcome #7

##### 1. Outcome Measures

Number of Commerical Catfish Farmers That Utilized Hand Held Computer Technologies for Record Keeping

Not Reporting on this Outcome Measure

#### Outcome #8

##### 1. Outcome Measures

Number of Arkansas Fish Farmers who have Increased Their Management Efficiency or That Conducted Comprehensive Annual Financial and Economic Analysis Because of Better Fish Inventory Assessment Methods or the Use of Improved Compuerized Record Keeping Systems

Not Reporting on this Outcome Measure

#### Outcome #9

##### 1. Outcome Measures

Percentage of Cafish Farmers that are Informed About the Effectiveness and the Optimal Sample Size of theTrawl Sampling Method Through Extension Specialists

Not Reporting on this Outcome Measure

## **Outcome #10**

### **1. Outcome Measures**

Percentage of Catfish Farmers that Effectively Adopt and Use the Optimal Sample Size of Trawl sampling for Inventory Estimation

Not Reporting on this Outcome Measure

## **Outcome #11**

### **1. Outcome Measures**

Percentage of Satisfaction Rate of Farmers who Adopted the Trawl Sampling with Recommended Sample Size for Inventory Estimation

Not Reporting on this Outcome Measure

## **Outcome #12**

### **1. Outcome Measures**

Number of Arkansans gaining access to needed information

Not Reporting on this Outcome Measure

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

### **Brief Explanation**

{No Data Entered}

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

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

### **Evaluation Results**

{No Data Entered}

### **Key Items of Evaluation**

{No Data Entered}



**V(A). Planned Program (Summary)****Program # 15****1. Name of the Planned Program**

Improving Hatchery Production Efficiency

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals				
307	Animal Management Systems				
	<b>Total</b>				

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.4	0.0	0.2
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

- Conduct field trials
  - Conduct method demonstrations
  - Publish results
  - Give presentations
1. Conduct research to determine the relationship between egg size and size at hatch for hybrid striped bass.
  2. Conduct research to re-defined the relation between temperature and egg stage duration.
  3. Conduct research to determine ways of reducing cannibalism in tank culture of hybrid striped bass
  4. Partner with Keo Fish Farm, Inc. to acquire seed stock from specific males and females

**2. Brief description of the target audience**

- Catfish farmers throughout Arkansas
  - County Extension agents Hybrid striped bass fingerling producers Hybrid striped bass grow-out facility operators

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	5	50	0	0
Actual	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of Abstracts  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of Presentations  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of Refereed Journal Articles  
Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- Number of Popular Articles and Newsletter Articles  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of Fingerling Producers That Learned What We Know
2	Number of Scientists That Learned What We Know
3	Number of Fingerling Producers That Use What We Know
4	Number of Grow-out Operations That Use What We Know
5	Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas
6	Percent Increase in Hybrid Striped Bass Fingerlings Produced in Tanks
7	Number of Arkansans Gaining Access to Hybrid Catfish Information
8	Number of Arkansans Adopting Hybrid Catfish Production
9	Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

**Outcome #1**

**1. Outcome Measures**

Number of Fingerling Producers That Learned What We Know

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Number of Scientists That Learned What We Know

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Number of Fingerling Producers That Use What We Know

Not Reporting on this Outcome Measure

**Outcome #4**

**1. Outcome Measures**

Number of Grow-out Operations That Use What We Know

Not Reporting on this Outcome Measure

**Outcome #5**

**1. Outcome Measures**

Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas

Not Reporting on this Outcome Measure

**Outcome #6**

**1. Outcome Measures**

Percent Increase in Hybrid Striped Bass Fingerlings Produced in Tanks

Not Reporting on this Outcome Measure

### **Outcome #7**

#### **1. Outcome Measures**

Number of Arkansans Gaining Access to Hybrid Catfish Information

Not Reporting on this Outcome Measure

### **Outcome #8**

#### **1. Outcome Measures**

Number of Arkansans Adopting Hybrid Catfish Production

Not Reporting on this Outcome Measure

### **Outcome #9**

#### **1. Outcome Measures**

Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Government Regulations

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 16**

**1. Name of the Planned Program**

Improving Disease Status for Baitfish Production and Marketing

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases				
312	External Parasites and Pests of Animals				
313	Internal Parasites in Animals				
<b>Total</b>					

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.2	0.0	0.3
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

- Research will be conducted to
- Improve diagnostic tests for important pathogens (viral, parasitic, and bacterial)
  - Improve understanding of the epidemiology of important pathogens
  - Discover new pathogens responsible for fish losses
  - Improve methods to eradicate pathogens from afflicted farms.

2. Brief description of the target audience

Commercial baitfish producers.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	40	60	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of publications  
 Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of presentations  
 Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of experiments and field trials of treatments for fish parasite and parasite vectors conducted on farms  
 Not reporting on this Output for this Annual Report



**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Percent of Arkansas bait and ornamental fish production farms participating in the State certification program
2	Number of farms that have attempted eradication procedures

## **Outcome #1**

### **1. Outcome Measures**

Percent of Arkansas bait and ornamental fish production farms participating in the State certification program

Not Reporting on this Outcome Measure

## **Outcome #2**

### **1. Outcome Measures**

Number of farms that have attempted eradication procedures

Not Reporting on this Outcome Measure

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Government Regulations

### **Brief Explanation**

{No Data Entered}

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

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

### **Evaluation Results**

{No Data Entered}

### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 17****1. Name of the Planned Program**

Controlling Predators of Larval Fish

**V(B). Program Knowledge Area(s)**

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
312	External Parasites and Pests of Animals				
	<b>Total</b>				

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.1
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

## 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Research will be conducted to

- Determine the toxicity of pesticides to fish and to target organisms
- Extension programs will run field trials of promising compounds
- Provide regulatory expertise for new labels
- Demonstrate proper use of new chemicals to farmers
- Provide educational materials regarding the newly developed treatments during workshops, farm visits and personal letters.

**2. Brief description of the target audience**

Commercial baitfish producers.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	40	100	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of Publications  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of Presentations.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of major farms adopting treatments
2	Number of farms reporting improved control

**Outcome #1**

**1. Outcome Measures**

Number of major farms adopting treatments

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Number of farms reporting improved control

Not Reporting on this Outcome Measure

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Government Regulations

**Brief Explanation**

{No Data Entered}

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

**1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 18**

**1. Name of the Planned Program**

Research Verification

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
307	Animal Management Systems				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

- Develop management recommendations
- Monitor commercial catfish ponds
- Publish results
- Give presentations

**2. Brief description of the target audience**

- Arkansas catfish farmers
- Research scientists
- County Extension agents

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	300	3800	0	0
<b>Actual</b>	0	0	0	0

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

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of Publications  
Not reporting on this Output for this Annual Report

**Output #2****Output Measure**

- Number of Presentations  
Not reporting on this Output for this Annual Report



**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results
2	Number of Commercial Arkansas catfish farmers adopting Extension recommendations
3	Number of commercial Arkansas catfish farmers increasing efficiency and profitability

### **Outcome #1**

#### **1. Outcome Measures**

Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Number of Commercial Arkansas catfish farmers adopting Extension recommendations

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Number of commercial Arkansas catfish farmers increasing efficiency and profitability

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Other (changing prices of feed and impo)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 19**

**1. Name of the Planned Program**

Improving Management Techniques for Baitfish

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals				
307	Animal Management Systems				
308	Improved Animal Products (Before Harvest)				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

A series of studies are being conducted on the components of an egg collection, removal and incubation system, and on new feed ingredients and strategies for feeding baitfish.

2. Brief description of the target audience

Commercial baitfish producers

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	40	80	0	0
<b>Actual</b>	0	0	0	0

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

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of Peer Reviewed Journal Articles  
Not reporting on this Output for this Annual Report

**Output #2****Output Measure**

- Number of Abstracts  
Not reporting on this Output for this Annual Report

**Output #3****Output Measure**

- Number of Articles in Producer Trade Magazines  
Not reporting on this Output for this Annual Report

**Output #4****Output Measure**

- Number of Fact Sheets and Newsletters

Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- Number of Presentations

Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers who learn project results
2	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
3	Percent of baitfish producers (by acreage) adopting diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

### **Outcome #1**

#### **1. Outcome Measures**

Number of producers who learn project results

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Percent of baitfish producers (by acreage) adopting diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Other (changing prices of feed ingredie)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 20****1. Name of the Planned Program**

Aquaculture Alternatives in Arkansas

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
302	Nutrient Utilization in Animals				
307	Animal Management Systems				
308	Improved Animal Products (Before Harvest)				
311	Animal Diseases				
602	Business Management, Finance, and Taxation				
603	Market Economics				
806	Youth Development				
	<b>Total</b>				

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	0.0	1.9	0.0	0.8
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Compile existing information on alternative aquaculture crops, budgets and markets for those crops. Disseminate the information through newsletters, fact sheets, presentations, and individual contacts. Year 1. Fact sheet on aquaculture alternatives. Field day poster presentation on alternative species. Year 2. Update fact sheet on small scale catfish production.



Revise fact sheet on baitfish budgets. Year 3. Revise fact sheet on holding fish for sale. Year 4. Revise fact sheet on using existing ponds for fish production. Year 5. Revise fact sheet on cleaning fish for sale.

Provide 4-H approved youth fishing education program materials to county agents. Maintain a youth fishing trailer and train agents in its use. Also add fishing education module to the trailer for county agents to use. Work with 4-H and county agents directly to implement new or improved sportfishing and aquatic curriculums, which include baitcasting and reel into sportfishing competitions. Organize and conduct workshops through CE agents that deal with aquatic education and 4-H O'Rama activities. Continue to provide assistance with county, regional, and state O'Ramas. Two types of systems will be set up; one with very low technology and a second with better technology. Raise all tilapia needed for the schools during the summer and overwinter broodstock for spawning the following year. Some small fish should also be overwintered to re-supply systems that fail.

## 2. Brief description of the target audience

County Extension faculty, existing fish farmers and potential farmers.  
Youth

### V(E). Planned Program (Outputs)

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	260	450	1000	200
<b>Actual</b>	0	0	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

##### Patents listed

{No Data Entered}

#### 3. Publications (Standard General Output Measure)

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Number of Peer Reviewed Journal Articles  
Not reporting on this Output for this Annual Report

## Output #2

### **Output Measure**

- Number of Presentations  
Not reporting on this Output for this Annual Report

## Output #3

### **Output Measure**

- Number of Published Abstracts  
Not reporting on this Output for this Annual Report

## Output #4

### **Output Measure**

- Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities  
Not reporting on this Output for this Annual Report

## Output #5

### **Output Measure**

- Number of students participating in events related to aquatic education fishing trailer  
Not reporting on this Output for this Annual Report

## Output #6

### **Output Measure**

- Number of students participating in specific aquatic education events, such as 4-H O'Rama Events, aquatic and fishing workshops, and educational derbies  
Not reporting on this Output for this Annual Report

## Output #7

### **Output Measure**

- Number of County Agents using the fishing education modules  
Not reporting on this Output for this Annual Report

## Output #8

### **Output Measure**

- Number of students participating in events involving the fishing education module  
Not reporting on this Output for this Annual Report

## Output #9

### **Output Measure**

- Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities  
Not reporting on this Output for this Annual Report

## Output #10

### **Output Measure**

- Number of contacts by email and telephone from teachers related to recirculation systems  
Not reporting on this Output for this Annual Report

**Output #11**

**Output Measure**

- Number of teachers participating in aquaculture workshops  
Not reporting on this Output for this Annual Report

**Output #12**

**Output Measure**

- Number of tilapia delivered to teachers  
Not reporting on this Output for this Annual Report

**Output #13**

**Output Measure**

- Number of teachers using tilapia  
Not reporting on this Output for this Annual Report

**Output #14**

**Output Measure**

- Number of teachers receiving aquaculture education newsletter  
Not reporting on this Output for this Annual Report

**Output #15**

**Output Measure**

- Number of schools visited annually  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Number of Arkansans adopting sound management practices
2	Number of Arkansans Increasing Efficiency, and Profitability
3	Number of researchers and producers gaining knowledge from results from presentations and publications
4	Number of researchers that will cite results
5	Number of producers that will modify feeding and management
6	Percent decrease in cool weather mortalities and decrease in off-flavor
7	Percent of cool weather plankton-related problems that will decrease
8	Percent of warm weather plankton-related problems that will decrease
9	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
10	Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

### **Outcome #1**

#### **1. Outcome Measures**

Number of Arkansans adopting sound management practices

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Number of Arkansans Increasing Efficiency, and Profitability

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Number of researchers and producers gaining knowledge from results from presentations and publications

Not Reporting on this Outcome Measure

### **Outcome #4**

#### **1. Outcome Measures**

Number of researchers that will cite results

Not Reporting on this Outcome Measure

### **Outcome #5**

#### **1. Outcome Measures**

Number of producers that will modify feeding and management

Not Reporting on this Outcome Measure

### **Outcome #6**

#### **1. Outcome Measures**

Percent decrease in cool weather mortalities and decrease in off-flavor

Not Reporting on this Outcome Measure

### **Outcome #7**

#### **1. Outcome Measures**

Percent of cool weather plankton-related problems that will decrease

Not Reporting on this Outcome Measure

### **Outcome #8**

#### **1. Outcome Measures**

Percent of warm weather plankton-related problems that will decrease

Not Reporting on this Outcome Measure

### **Outcome #9**

#### **1. Outcome Measures**

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Not Reporting on this Outcome Measure

### **Outcome #10**

#### **1. Outcome Measures**

Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

### **Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 21**

**1. Name of the Planned Program**

Climate Change

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water		20%		15%
112	Watershed Protection and Management		15%		15%
133	Pollution Prevention and Mitigation		15%		20%
134	Outdoor Recreation		10%		10%
204	Plant Product Quality and Utility (Preharvest)		20%		15%
307	Animal Management Systems		5%		5%
403	Waste Disposal, Recycling, and Reuse		15%		20%
	<b>Total</b>		100%		100%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.1	0.0	1.3
Actual	0.0	1.2	0.0	1.2

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	286488	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	125735	0	155130
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

In total, swine waste treatment system samples were taken from eleven (11) sample locations. From the lagoon, a sample was taken from the surface, and from below the stratification line. From each of the three cells of the constructed wetland complex, a sample was taken from the inlet, from the center, and from the outlet. Water samples from the lagoon and constructed wetland will be taken once weekly from April 2009, through March 2010. Samples were taken on the same week day, and at



the same time of the day. Temperature and weather conditions at the time the samples are taken will be recorded. After samples were taken, they were immediately brought back to the lab and tested. If for any reason, the samples could not be tested immediately, or later that day, samples were preserved. Total Nitrogen, Phosphorus, and Ammonia Hach test-n-tube kits were be used in conjunction with a Hach DR/4000 Spectrophotometer to analyze lagoon and wetland cells water samples. Data was entered into Microsoft Excel program for storage and easy analysis. The data will be analyzed for trends and significant differences.

Assessment of hybrid striped bass requirements for water hardness in Arkansas farm ponds based on survival post-stocking using cage studies

Hybrid striped bass prey selection and competition with largemouth bass

Growth and condition of hybrid striped bass under different prey communities

Influence on hybrid striped bas on prey communities at two sticking densities

Creel surveys during 2007-2009 in two pools of the lower Arkansas River

Use of computer simulation modeling to predict the influence of different management scenarios on fishery yield, harvest, and size structure. Scenarios will include the existing 15-inch minimum length limit and no maximum length limit yield.

**2. Brief description of the target audience**

The target audience of project efforts include both undergraduate and graduate students in the discipline. Small and limited resource farmers in the Mississippi Delta Region and extension professionals are also included in the target audience.

Commercial hybrid striped bass prducers, private impoundment owners and managers, Extension Educators AGFC AR

Fisheries managers of Arkansas, the Arkansas Game and Fish Commission biologists and managers, Tournament largemouth bass anglers, Recreational anglers of Arkansas

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

<b>2009</b>	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Plan</b>	110	205	55	55
<b>Actual</b>	1031	3602	30	90

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

<b>2009</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	0	1	
<b>Actual</b>	2	0	1

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Complete one peer reviewed research article every two years.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	1	0

**Output #2**

**Output Measure**

- Document the number of small, local and limited resource farmers that have been assisted with swine waste treatment, odor and/or water quality issues each year.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	5	1

**Output #3**

**Output Measure**

- Complete one fact sheet regarding water quality, swine waste management or environmental stewardship each year.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	1	0

**Output #4**

**Output Measure**

- Number of project annual and final reports

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	71

**Output #5**

**Output Measure**

- Number of presentations at scientific meetings

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	14

**Output #6**

**Output Measure**

- Number of published abstracts

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	8

**Output #7****Output Measure**

- Number of refereed journal articles

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	2

**Output #8****Output Measure**

- Number of research reports submitted to stakeholders

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	1

**Output #9****Output Measure**

- Number of non-peer reviewed publications

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	2

**Output #10****Output Measure**

- Number of datasets on water temperature profiles in commercial fish ponds across Arkansas

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	27

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	The number of conservation practices utilized by swine farmers as a result of this project is an outcome measure.
2	Increase awareness of environmental issues and policies that pertain to operating small swine farms.
3	Number of individuals to whom information on heat stress and catfish mortality was provided

## Outcome #1

### 1. Outcome Measures

The number of conservation practices utilized by swine farmers as a result of this project is an outcome measure.

### 2. Associated Institution Types

- 1890 Extension
- 1890 Research

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2	1

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Landowners and livestock farmers are concerned about the resource both as a means of livelihood and an inheritance to heirs.

#### What has been done

The swine waste treatment system has been shared with the public at the recent farm field day and with tour groups that visit the farm.

#### Results

Great interest has been expressed the the knowledge of the participants has been expanded by the conservation practices that were shared.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
204	Plant Product Quality and Utility (Preharvest)
403	Waste Disposal, Recycling, and Reuse

## Outcome #2

### 1. Outcome Measures

Increase awareness of environmental issues and policies that pertain to operating small swine farms.

### 2. Associated Institution Types

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Agricultural and natural resource professionals as well as landowners and livestock farmers care deeply about this issue. They are concerned about the resource both as a means of livelihood for producers and as an inheritance to heirs.

**What has been done**

The swine waste treatment system has been shared with the professionals and farmers at the recent farm field day and with tour groups that visit the farm.

**Results**

Great interest has been expressed the the knowledge of the participants has been expanded by the conservation practices that were shared.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
204	Plant Product Quality and Utility (Preharvest)
403	Waste Disposal, Recycling, and Reuse

**Outcome #3**

**1. Outcome Measures**

Number of individuals to whom information on heat stress and catfish mortality was provided

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	34

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

Previous policy by FSA indicated that high water temperatures were beneficial for growth of food-sized catfish.

**What has been done**

A regional panel of experts was convened, including primarily scientists from UAPB and Mississippi State University. A comprehensive review of the scientific literature was completed relative to catfish growth and physiology under conditions of high water temperatures. This information was provided to FSA and thoroughly discussed in a follow-up meeting in Little Rock, Arkansas.

**Results**

The FSA policy has been changed to reflect temperature thresholds above which water temperature induces stress and subsequent mortality for both foodfish and fingerling catfish. Foodfish growers of catfish are now eligible for assistance during high-heat emergency conditions.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**V(H). Planned Program (External Factors)****External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Public Policy changes

**Brief Explanation**

The spring and summer of 2009 was one of the wettest years on record for Arkansas and the southeastern United States. Wet weather had an effect upon the data that was collected for the swine waste treatment system. Weather data was collected and will be included in the analysis of the data.

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

## 1. Evaluation Studies Planned

- During (during program)

**Evaluation Results**

Over a 24 week period, with an average of 17 adult swine contributing waste to the waste treatment system, the preliminary results show that all nutrient values declined from the lagoon to the wetland cell. The percentage difference of PO<sub>4</sub>, NH<sub>3</sub>, and total N were 6.3, 25.2 and 15.9 %. However, NO<sub>3</sub> and NO<sub>2</sub> had the highest percentage differences (24.9 and 27.6%). Fecal coli form count evaluation are underway. The trees (*Thuja plicata*) that were replanted during 2009 exhibited very poor survival and consideration will be given to changing the tree selection in the coming year.

**Key Items of Evaluation**

The levels of PO<sub>4</sub>, NH<sub>3</sub>, NO<sub>3</sub> and NO<sub>2</sub> and total N in the surface water of the swine waste treatment lagoon were higher than the same variables sampled in the wetland cells.



**V(A). Planned Program (Summary)**

**Program # 22**

**1. Name of the Planned Program**

Improving Largemouth Bass Fishing in the Arkansas River

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	1.3
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

- Field collections of Arkansas River black basses from eleven pools during spring and fall seasons in 2004 and 2005
- Laboratory fish processing from 2004 through 2006
- Laboratory fish aging from 2004 through 2006
- Data analysis from 2005 through 2006 that include calculations of bass abundance, mortality, age structure, growth, and reproductive success. Conduct research to determine abundance of wild largemouth bass fingerlings in coves prior to stocking. We will randomly stock half of 10 coves. We will assess abundance of wild largemouth bass post stocking and compare mortality rates of largemouth bass fingerlings in stocked and unstocked coves. Conduct research to address the question of largemouth bass production in the Arkansas River and whether production has changed over time. We are also developing an approach to be able to compare production of bass among large USACE reservoirs, natural lakes, and pools of the Arkansas River.
  - Data examination and screening
  - Conduct statistical analyses for the study objectives.

**2. Brief description of the target audience**

- Fisheries managers of Arkansas The Arkansas Game and Fish Commission, Tournament largemouth bass anglers, Recreational anglers of Arkansas
  - AGFC fisheries biologists
  - AGFC fisheries managers.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	0	0	0	0
<b>Actual</b>	0	0	0	0

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

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of Abstracts  
Not reporting on this Output for this Annual Report

**Output #2****Output Measure**

- Number of Presentations  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of Refereed Journal Articles  
Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- Number of Research Reports Submitted to Stakeholders  
Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- Number of Non-peer Reviewed Publications  
Not reporting on this Output for this Annual Report

**Output #6**

**Output Measure**

- Number of Peer Reviewed Publications  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	The percent of AGFC fisheries biologists and managers that are informed about use of rotenone samples for scientific research topics through scientific meetings and conferences
2	Percent of AGFC fisheries biologists and managers who use the study results to solve management issues
3	Number of tournament largemouth bass anglers that learned what we know
4	Number of recreational anglers that learned what we know
5	Number of non-agency fisheries biologists that use what we know
6	Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River
7	Percent increase in largemouth bass tournaments on the Arkansas River
8	Number of AGFC personnel that learned what we know
9	Number of non-agency fisheries biologists that learned what we know
10	Number of AGFC personnel that use what we know

### **Outcome #1**

#### **1. Outcome Measures**

The percent of AGFC fisheries biologists and managers that are informed about use of rotenone samples for scientific research topics through scientific meetings and conferences

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Percent of AGFC fisheries biologists and managers who use the study results to solve management issues

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Number of tournament largemouth bass anglers that learned what we know

Not Reporting on this Outcome Measure

### **Outcome #4**

#### **1. Outcome Measures**

Number of recreational anglers that learned what we know

Not Reporting on this Outcome Measure

### **Outcome #5**

#### **1. Outcome Measures**

Number of non-agency fisheries biologists that use what we know

Not Reporting on this Outcome Measure

### **Outcome #6**

#### **1. Outcome Measures**

Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River

Not Reporting on this Outcome Measure

### **Outcome #7**

#### **1. Outcome Measures**

Percent increase in largemouth bass tournaments on the Arkansas River

Not Reporting on this Outcome Measure

### **Outcome #8**

#### **1. Outcome Measures**

Number of AGFC personnel that learned what we know

Not Reporting on this Outcome Measure

### **Outcome #9**

#### **1. Outcome Measures**

Number of non-agency fisheries biologists that learned what we know

Not Reporting on this Outcome Measure

### **Outcome #10**

#### **1. Outcome Measures**

Number of AGFC personnel that use what we know

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)

### **Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 23**

**1. Name of the Planned Program**

Cropping Systems

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms		5%		13%
202	Plant Genetic Resources		5%		13%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants		20%		18%
205	Plant Management Systems		20%		19%
211	Insects, Mites, and Other Arthropods Affecting Plants		6%		0%
213	Weeds Affecting Plants		10%		0%
302	Nutrient Utilization in Animals		5%		15%
601	Economics of Agricultural Production and Farm Management		12%		15%
602	Business Management, Finance, and Taxation		12%		0%
610	Domestic Policy Analysis		5%		7%
	<b>Total</b>		100%		100%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	2.8	0.0	0.5
Actual	0.0	0.0	0.0	0.0

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0



**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Not reporting on this planned program

**2. Brief description of the target audience**

Not reporting on this planned program

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	500	1000	400	400
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

Not reporting on this planned program

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- 1. The number of site visits by farmers  
 Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- 2. The number of participants that attend field days  
 Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- 3. Number of fact sheets developed  
Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- 4. Annual Reports  
Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- 5. Number of presentations made at meetings for interested groups  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Short term outcome will be measured by the number of LRF and SDF that attend field days and observe BMP demonstrations and the knowledge gained by participants.
2	Long term outcome will be measured by the number of LRFs and SDFs that adopt 1 or more BMP

## **Outcome #1**

### **1. Outcome Measures**

Short term outcome will be measured by the number of LRF and SDF that attend field days and observe BMP demonstrations and the knowledge gained by participants.

Not Reporting on this Outcome Measure

## **Outcome #2**

### **1. Outcome Measures**

Long term outcome will be measured by the number of LRFs and SDFs that adopt 1 or more BMP

Not Reporting on this Outcome Measure

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

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

### **Brief Explanation**

Not reporting on this planned program

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

### **1. Evaluation Studies Planned**

- During (during program)

## **Evaluation Results**

Not reporting on this planned program

## **Key Items of Evaluation**

Not reporting on this planned program

**V(A). Planned Program (Summary)**

**Program # 24**

**1. Name of the Planned Program**

1890 Family and Child Development Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management		60%		0%
802	Human Development and Family Well-Being		15%		0%
806	Youth Development		25%		0%
	<b>Total</b>		100%		0%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.2	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

{No Data Entered}

2. Brief description of the target audience

{No Data Entered}

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	45	0	55	10000
<b>Actual</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

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

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	{No Data Entered}	{No Data Entered}	{No Data Entered}

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- We will provide math and science workshops for children in the Young Scholars Program.  
Not reporting on this Output for this Annual Report

**Output #2****Output Measure**

- Parents will receive training in parenting, stress management, money management, child development, and job-related and coping skills.  
Not reporting on this Output for this Annual Report

**Output #3****Output Measure**

- Write 6 issues of Teens on the Go for students in grades 7-12.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Forty-five percent of children in the Young Scholars Program will have an increase in school performance
2	Thirty percent of families will report being able to meet the financial obligations of their families.
3	Total contact with Arkansas teens will be 10000 through Teens on the Go.

### **Outcome #1**

#### **1. Outcome Measures**

Forty-five percent of children in the Young Scholars Program will have an increase in school performance

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Thirty percent of families will report being able to meet the financial obligations of their families.

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Total contact with Arkansas teens will be 10000 through Teens on the Go.

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Economy
- Appropriations changes
- Populations changes (immigration, new cultural groupings, etc.)

#### **Brief Explanation**

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

#### **1. Evaluation Studies Planned**

- During (during program)
- Case Study

### **Evaluation Results**

### **Key Items of Evaluation**



**V(A). Planned Program (Summary)**

**Program # 25**

**1. Name of the Planned Program**

Arkansas Ag Adventures - Agricultural Awareness

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development				
	<b>Total</b>				

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	1.1	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

Activities include field days at the UAPB Small Farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits at educational fairs, and community and classroom workshops.

2. Brief description of the target audience

Although all youth and adults can be a part of the program, special emphasis is given to youth in grades 4-6 and their formal educators.

**V(E). Planned Program (Outputs)**

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	120	10	2500	200
<b>Actual</b>	0	0	0	0

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

### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: {No Data Entered}

### Patents listed

{No Data Entered}

## 3. Publications (Standard General Output Measure)

### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

## V(F). State Defined Outputs

### Output Target

#### Output #1

##### Output Measure

- Number of Participants in Arkansas Ag Adventures workshops and other non-formal educational programs  
Not reporting on this Output for this Annual Report

#### Output #2

##### Output Measure

- Number of groups that participate in farm field days  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	To increase the understanding of agriculture and its benefits to the general public.
2	The number of youth that choose agriculture as a career or course of study in college.

## **Outcome #1**

### **1. Outcome Measures**

To increase the understanding of agriculture and its benefits to the general public.

Not Reporting on this Outcome Measure

## **Outcome #2**

### **1. Outcome Measures**

The number of youth that choose agriculture as a career or course of study in college.

Not Reporting on this Outcome Measure

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

- Economy
- Appropriations changes
- Competing Programmatic Challenges

### **Brief Explanation**

{No Data Entered}

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

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Before-After (before and after program)

### **Evaluation Results**

{No Data Entered}

### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 26**

**1. Name of the Planned Program**

Managing Small Impoundments for Recreational Fishing

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation				
307	Animal Management Systems				
806	Youth Development				
<b>Total</b>					

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.4	0.0	0.3
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

Disseminate existing information through mass media, fact sheets, direct electronic communications, group presentations, and individual contacts with clientele.

Research Activities include:

- Assessment of HSB requirements for water hardness in Arkansas farm ponds based on survival post-stocking using cage studies
- HSB prey selection and competition with largemouth bass
- Growth and condition of HSB under different prey communities
- Influence of HSB on prey communities at two stocking densities.

Extension Activities include:

- Produce recommendations for using HSB in ponds
- Evaluation of the Community Fishing Program (FCFP)
- Evaluation of the Fishing Derby Program (FDP)
- Evaluation of the Hooked on Fishing not on Drugs Program (HOFNOD)
- HOFNOD teacher workshops
- AGFC training
- Assist in AGFC with instructional activities and evaluation design
- Organize and conduct Urban Fishing Symposium

**2. Brief description of the target audience**

County Extension Agents, pond managers, natural resource managers, commercial hybrid striped bass producers, private impoundment owners and managers, Extension educators, AGFC AR potential/current anglers HOFNOD Instructors, and others

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	2090	12400	1000	200
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of publications  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of Presentations  
Not reporting on this Output for this Annual Report

**Output #3**

**Output Measure**

- Number of Project Annual and Final Reports  
Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- Number of Published Abstracts  
Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- Number of Refereed Journal Articles  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of farm pond owners learning how to control aquatic weeds
2	Number of farm pond owners experiencing fewer problems with aquatic weeds
3	Number of Research Recommendations Transferred to Arkansas Game and Fish Commission Staff
4	Increase in fishing license sales in cities with AGFC programs
5	Increase in ponds that are designed, stocked, and managed correctly
6	Reduced number of pond problems
7	Percent increase in contacts regarding hybrid striped bass
8	Percent increase in requests for hybrid striped bass management recommendations
9	Percent increase in sales for sport fishing



**Outcome #1**

**1. Outcome Measures**

Number of farm pond owners learning how to control aquatic weeds

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Number of farm pond owners experiencing fewer problems with aquatic weeds

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Number of Research Recommendations Transferred to Arkansas Game and Fish Commission Staff

Not Reporting on this Outcome Measure

**Outcome #4**

**1. Outcome Measures**

Increase in fishing license sales in cities with AGFC programs

Not Reporting on this Outcome Measure

**Outcome #5**

**1. Outcome Measures**

Increase in ponds that are designed, stocked, and managed correctly

Not Reporting on this Outcome Measure

**Outcome #6**

**1. Outcome Measures**

Reduced number of pond problems

Not Reporting on this Outcome Measure

### **Outcome #7**

#### **1. Outcome Measures**

Percent increase in contacts regarding hybrid striped bass

Not Reporting on this Outcome Measure

### **Outcome #8**

#### **1. Outcome Measures**

Percent increase in requests for hybrid striped bass management recommendations

Not Reporting on this Outcome Measure

### **Outcome #9**

#### **1. Outcome Measures**

Percent increase in sales for sport fishing

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)

#### **Brief Explanation**

{No Data Entered}

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

#### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)
- Other (Survey of farm pond owners)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 27****1. Name of the Planned Program**

Family Resource Management

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management				
	<b>Total</b>				

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.6	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

The 1890 Family Resource Management Program will be conducted through a variety of programs and events to reach the target audiences. Education programs (workshops and siminars) will be conducted; tailored publications for low-literacy individuals including fact sheets, newsletters, news articles will be written and published; media including print, radio, university TV and university website and other available technology will be used to provide information in a user friendly format. Additionally, the program will participate in events and conferences by developing displays and presentations.

**2. Brief description of the target audience**

The 1890 Family Resource Management Program targets young adults, parents, families, farm families, faith-based and community based organizations and is focused particularly on limited resources audiences and small land and property owners.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	300	500	0	0
<b>Actual</b>	0	0	0	0

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

Year: 2009

Plan: 0

Actual: {No Data Entered}

**Patents listed**

{No Data Entered}

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	5	0	
<b>Actual</b>	5	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- The number of participants will participating in 10 financial management workshops;  
Not reporting on this Output for this Annual Report

**Output #2****Output Measure**

- The number of financial management presentations to community and faith-based organizations;  
Not reporting on this Output for this Annual Report

**Output #3****Output Measure**

- the number of articles written in special publications addressing the needs of limited resource farms and families in the family resource area  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Forty percent of the 800 program participants will gain knowledge in financial resource management and planning.
2	Ten percent of the program participants will change one or more positive financial behaviors that will be result in improved long-term financial well being.

## **Outcome #1**

### **1. Outcome Measures**

Forty percent of the 800 program participants will gain knowledge in financial resource management and planning.

Not Reporting on this Outcome Measure

## **Outcome #2**

### **1. Outcome Measures**

Ten percent of the program participants will change one or more positive financial behaviors that will be result in improved long-term financial well being.

Not Reporting on this Outcome Measure

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

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

### **Brief Explanation**

{No Data Entered}

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

### **1. Evaluation Studies Planned**

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

### **Evaluation Results**

{No Data Entered}

### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)**

**Program # 28**

**1. Name of the Planned Program**

Global Food Security and Hunger

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms		5%		13%
202	Plant Genetic Resources		5%		13%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants		14%		10%
205	Plant Management Systems		15%		7%
211	Insects, Mites, and Other Arthropods Affecting Plants		6%		0%
213	Weeds Affecting Plants		10%		0%
301	Reproductive Performance of Animals		5%		5%
302	Nutrient Utilization in Animals		5%		13%
307	Animal Management Systems		0%		10%
311	Animal Diseases		12%		7%
601	Economics of Agricultural Production and Farm Management		6%		10%
602	Business Management, Finance, and Taxation		12%		0%
603	Market Economics		0%		5%
610	Domestic Policy Analysis		5%		7%
<b>Total</b>			100%		100%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	11.0	0.0	8.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
<b>Smith-Lever 3b &amp; 3c</b> 0	<b>1890 Extension</b> 1095675	<b>Hatch</b> 0	<b>Evans-Allen</b> 1759738
<b>1862 Matching</b> 0	<b>1890 Matching</b> 1143982	<b>1862 Matching</b> 0	<b>1890 Matching</b> 1470658
<b>1862 All Other</b> 0	<b>1890 All Other</b> 294338	<b>1862 All Other</b> 0	<b>1890 All Other</b> 0

## V(D). Planned Program (Activity)

### 1. Brief description of the Activity

To report on NIFA's priority area Global Food Security and Hunger the University of Arkansas at Pine Bluff (UAPB) combined the programs - Agriculture Policy, Small Farm Program, Food Animal Production and Management, Horticulture Production, Alternative Crop Production, Breeding and Biotechnology, and Cropping Systems. The activities for these programs are:

A case study was initiated by the policy group that examined the profiles of 90 farmers to look at the level of participation in USDA programs, agriculture production practices and other variables related to socioeconomic status.

The small farm staff conducted educational workshops; provided field crop, vegetable crop and livestock production counseling; provided assistance with application packages for USDA programs, recordkeeping, crop insurance and crop marketing.

Recommendations on swine and goat production were distributed to SSDF's: 12 at a workshop and 50 a field day. The recommendations were derived from research studies that use crop byproducts (brewers grade rice, cotton seed meal, cotton hull etc.) to mix rations that meet the nutritional requirements of the animals.

The horticulture program conducted 14 training sessions that involved 337 participants and included County Extension agents and associates, socially-disadvantaged farmers, limited-resource farmers, small-scale farmers and master gardeners.

Six rose cultivars (Tropicana, Peace, Iceberg, Eurpeana, Strike It Rich and Double Delight) were evaluated for adaptability to southeastern Arkansas conditions; and a rating system (1 poor to 5 excellent) for ranking cultivars was established by the alternative crop group.

Summer crops (sweet potato, squash, cowpea, and sweet corn) and fall crops (mustard and turnip) were grown in a continuous cropping system to determine disease and insect pressures that are likely to evolve from the system.

The biotechnology and breeding areas have established an efficient regeneration system for the cowpea through shoot meristems tissue; identified seven cowpea cultivars that are suitable for mechanical harvest; and continued breeding trials with 237 promising lines of southern peas.

Conducted experiments looking at Vitamin C & E requirements in largemouth bass, conducted water testing of salt levels for alternative crop growth, advised clientel on other species, developed alternative species posters.

Conducted field trials, conducted method demonstrations, and published results. Gave presentations, developed individual enterprise budgets for catfish producers, developed news articles on improving farm efficiency, developed producer workshops targeting efficiency improvements for producers, worked with catfish industry to develop copper sulfate use protocol, worked with fish processing plants in valuing use of copper sulfate for off flavor control, and worked with industry suppliers who manufacture copper sulfate on proper use of the product.

Conducted inspections for fish farms to help prevent fish loss.





2009	{No Data Entered}	6
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**Output #2****Output Measure**

- The number of farmers provided assistance in applying for USDA programs

Year	Target	Actual
2009	{No Data Entered}	90

**Output #3****Output Measure**

- The number of SSDF participating in workshops and farm tours

Year	Target	Actual
2009	{No Data Entered}	600

**Output #4****Output Measure**

- The number of youth participating in the Youth Agriculture Awareness Program at the Lonoke Farm Site

Year	Target	Actual
2009	{No Data Entered}	1550

**Output #5****Output Measure**

- Number of refereed journal articles

Year	Target	Actual
2009	{No Data Entered}	10

**Output #6****Output Measure**

- Number of abstracts published

Year	Target	Actual
2009	{No Data Entered}	34

**Output #7****Output Measure**

- Number of presentations

Year	Target	Actual
2009	{No Data Entered}	94

**Output #8****Output Measure**

- Number of trade magazine articles

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	6

**Output #9**

**Output Measure**

- Number of publications

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	{No Data Entered}	6

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Short term 1. The number of SSDF that attend field days to observe research activities and demonstrations
2	Increase in the participation of SSDF farmers in USDA programs
3	Number of researchers and producers gaining knowledge from results from presentations and publications
4	Number of producers that will modify feeding and management
5	Number of producers willing to test successful ingredients or feeding strategies
6	Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry
7	Number of researchers that will cite results
8	Percent decrease in cool weather mortalities and decrease in off-flavor
9	Percent of cool weather plankton-related problems that will decrease
10	Percent of warm weather plankton-related problems that will decrease
11	Number of fingerling producers that learned what we know
12	Number of scientists that learned what we know
13	Number of fingerling producers that use what we know
14	Number of Arkansans gaining access to hybrid catfish information
15	Number of Arkansans adopting hybrid catfish production
16	Number of stores adopting recommendations
17	Number of Arkansans gaining access to catfish management information
18	Number of farmers helped with disease cases

19	Number of producers who learn project results
20	Number of producers responding to project results

## **Outcome #1**

### **1. Outcome Measures**

Short term 1. The number of SSDF that attend field days to observe research activities and demonstrations

### **2. Associated Institution Types**

- 1890 Extension
- 1890 Research

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	{No Data Entered}	50

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Small Scale and Socially Disadvantaged Farmers (SSDF) are interested in seeing best management practices for vegetable crop and livestock production as a means of increasing yield and efficiency of their operations. SSDF want to be contributing members of the agriculture community and they want their agribusinesses to thrive.

#### **What has been done**

Research studies were conducted on double cropping sequences of vegetables; using brewers grade rice, cotton seed meal and cotton hulls to formulate diets for swine and goats; and breeding cowpeas for market acceptability in southeast Arkansas. Demonstrations were set up using different varieties of green beans, blackberries, and apples. A field day was held on the main campus of UAPB on July 30, 2009.

#### **Results**

Rainy weather conditions prevented the participants (farmers, community residents etc.) from seeing the field plots and the animals in their natural habitat. However, each principal investigator made a presentation on his/her study in the vegetable processing laboratory that has been established on the farm. Double cropping sequences that include sweet potato and squash appear to be more productive and profitable than those that include sweet corn and cowpea. Brewers' grade or broken rice was used to replace Milo or corn in the diet of finishing swine. The diet was formulated to achieve an energy balance of 2750 kilo-Cal /Kg of feed and a protein content of 14%. The cost per pound for this diet was \$0.15/lb versus \$.20/lb for diets that contain corn. The swine gain weight faster and they were more efficient in converting feed to weight gain when fed the broken rice diet.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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- 201 Plant Genome, Genetics, and Genetic Mechanisms
- 202 Plant Genetic Resources
- 203 Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 Plant Management Systems
- 211 Insects, Mites, and Other Arthropods Affecting Plants
- 213 Weeds Affecting Plants
- 302 Nutrient Utilization in Animals

**Outcome #2**

**1. Outcome Measures**

Increase in the participation of SSDF farmers in USDA programs

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	18

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Small Scale and Socially Disadvantaged Farmers (SSDF) are no different from other farmers; they want to be successful in their farming operations. The USDA is committed to the success of all farmers in the United States including SSDFs. However, these farmers tend to spend a large amount of their time on production and almost no time on finance. Consequently, they are not familiar with tools like balance sheets, cash flow analysis, financial ratios or farm plans.

**What has been done**

Approximately 50 SSDFs were assisted with their recordkeeping and 80 were assisted in developing financial plans for their operations. Also, fifty five (55) SSDFs were assisted in developing financial plans. Eighteen (18) SSDFs submitted their plans to USDA and nine (9) submitted their plans to agricultural vendors (seed, equipment or chemical companies).

**Results**

The 18 who submitted their plans to USDA received approximately \$3.0 million in USDA loan funds. The 9 who submitted their plans to agricultural vendors (seed, equipment or chemical companies) received \$755,000 in supplies (pesticides, seed, fertilizers, etc). And the 55 who developed financial plans, farmed without a USDA or bank loan.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation

**Outcome #3**

**1. Outcome Measures**

Number of researchers and producers gaining knowledge from results from presentations and publications

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	{No Data Entered}	125

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Researchers and producers are trying to adopt and refine research results related to diet development for largemouth bass

**What has been done**

A feeding trials with largemouth bass to determine the potential for replacing menhaden fish meal with Alaskan pollack visceral meal

**Results**

Pollack meal replaced all of the menhaden meal without reducing growth or causing any deleterious effects.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
302	Nutrient Utilization in Animals

**Outcome #4**

**1. Outcome Measures**

Number of producers that will modify feeding and management

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	88

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Numerous requests received for information about alternative species

**What has been done**

At this time, several producers have explored raising species other than catfish in order to diversify their operations and explore other marketing opportunities

**Results**

Over 500 acres of ponds have been stocked with largemouth bass, freshwater prawns or crayfish

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

**Outcome #5**

**1. Outcome Measures**

Number of producers willing to test successful ingredients or feeding strategies

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	187

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**



Producers need basic knowledge on nutrient requirements of alternative species to select the most appropriate commercial diets available. Non-fish-meal ingredients or underutilized by-products of other fish industries can be used in some bass feeds. Use will escalate as fish meal continues to be prohibitively expensive to use in practical fish feeds.

**What has been done**

New diet formulas, ingredients, and feeding strategies are being tested in different species under controlled conditions to provide a scientific foundation for changing existing diet formulations and feeding strategies.

**Results**

Willingness of producers to test successful ingredients or feeding strategies on a commercial scale.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

**Outcome #6**

**1. Outcome Measures**

Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	12

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Commercial production techniques for alternative species vary a lot relative to those for major aquaculture species.

**What has been done**

New diet formulations, ingredients, and feeding strategies are being tested in different species under controlled conditions to prove a scientific foundation for changing existing diet formulations and feeding strategies. A feeding trial with largemouth bass to determine the potential for replacing menhaden fish meal with pollack meal showed good results

**Results**

Research results were provided to producers to make them aware of the potential for new diet formulations and feeding strategies. Many new diets with ingredients other than traditional marine fish meals and oils are available, and they have been influenced by research results from many different sources. Replacement of marine fish meals and oils or use of underutilized fisheries by-products in diets of all cultured fish will continue to be a major research focus for fish nutritionists, and producers will be forced to adopt diets with alternative ingredients to stay

economically viable.

Pollack visceral meal successfully replaced all menhaden fish meal in a diet for largemouth bass.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

**Outcome #7**

**1. Outcome Measures**

Number of researchers that will cite results

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	14

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Alligator gar production practices for potential restocking programs by the state of Arkansas need to be determined.

**What has been done**

An experimental trial of controls commercial pellet fed only, structure and feeding, forage and feeding, structure and forage and feeding was conducted at two stocking levels (12,000 and 6,000/ac).

**Results**

Forage provided the best results with growth exceeding the 10" target size and survival of 70% in 42 days.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #8**

**1. Outcome Measures**

Percent decrease in cool weather mortalities and decrease in off-flavor

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	28

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Catfish and baitfish farmers carryover a large quantity of fish during the cool weather. During the carry over, mortalities often occur and off-flavor in catfish and algae problems with baitfish can occur. Less work has been done on this period and with these problems than during the warm weather growing season. In addition, some farmers feed catfish and baitfish more aggressively than other farmers during the cool weather season and the effects are not known.

**What has been done**

Weekly sampling continued in baitfish ponds to April 2009 then monthly to November 2009. A total of 1300 baitfish measurements were made.

**Results**

Catfish water quality and plankton correlations were made for the two years sampled. DO and pH were significantly correlated with temperature, dissolved oxygen and total dissolved solids with total ammonia nitrogen and total dissolved nitrogen with VIA.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #9**

**1. Outcome Measures**

Percent of cool weather plankton-related problems that will decrease

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	58

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Cool weather plankton problems may be similar to warm weather plankton problems in tendency to bloom and crash and toxicity in catfish and baitfish ponds. In addition, in baitfish ponds composition of the zooplankton can effect survival of stocked fry. The cool weather plankton may be lower in abundance and relationships of zooplankton with phytoplankton and climate is not known in catfish and baitfish ponds.

#### What has been done

Weekly sampling continued in baitfish ponds to April 2009, followed by monthly to November 2009. A total of 1300 baitfish measurements were made.

#### Results

Catfish water quality fluctuations were found to be related to physical factors in the cool season. Baitfish concentrations of medacious cyclopoid copepods and un-ionized amonia which is toxic were determined and given to extension personnel for use by farmers and researchers.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

### Outcome #10

#### 1. Outcome Measures

Percent of warm weather plankton-related problems that will decrease

#### 2. Associated Institution Types

- 1890 Research

#### 3a. Outcome Type:

Change in Condition Outcome Measure

#### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	30

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Off-flavor algae during the winter may carry over into the warm weather or may influence or be related to warm weather occurrence. In addition, the farms with heavier feeding during the winter may continue in the warm weather and may impact the presence and abundance of off-flavor algae.

#### What has been done

Montly sampling was performed in 12 baitfish ponds from May to November 2009.

#### Results

Catfish water quality fluctuations were found to be related to algae and feed ingredients in the warm season. Baitfish concentrations of medacious cyclopoid copepods and un-ionized ammonia which is toxic were

determined and given to extension personnel for use by farmers and researchers.y

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #11**

**1. Outcome Measures**

Number of fingerling producers that learned what we know

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	17

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Fingerling producers in the state of Arkansas are interested in producing hybrid catfish. This practice requires a novel approach to spawning catfish and the integration of experimental data into practical approaches for the farmer.

**What has been done**

On-going collaborations with Baxter Land Company in 2009 tested spawning to produce hybrid catfish. Examinations of a system of grading female catfish broodstock to select those ready for artificial spawning were conducted.

**Results**

Trials comparing catfish and carp pituitary illustrated variability in the response to catfish pituitary. In studies conducted in 2008 catfish pituitary performed as well or better than carp pituitary. In 2009 carp pituitary was more effective in inducing fish to ovulate. This data has been implemented into the decisions for artificial spawning of channel catfish in 2010 and collaborative experiments are being planned to test improved and more standardized preparations of catfish pituitary. Final reports for INAD use of spawning aide compounds were submitted to the USFWS.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals

**Outcome #12**

**1. Outcome Measures**

Number of scientists that learned what we know

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	107

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Examinations of artificial spawning practices

**What has been done**

Ongoing and planned collaborations with USDA laboratories in Stoneville, Mississippi are being developed. Three presentations describing experimentation under this program were delivered at the World Aquaculture Society annual meeting held in San Diego, CA in March of 2010.

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #13**

**1. Outcome Measures**

Number of fingerling producers that use what we know

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	10

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Artificial spawning of channel catfish

**What has been done**

Baxter Land Company currently is the only Arkansas fingerling producer investing capital and energy in the development of artificial spawning practices for the production of hybrid catfish

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals

**Outcome #14**

**1. Outcome Measures**

Number of Arkansans gaining access to hybrid catfish information

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	60

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Artificial spawning of channel catfish

**What has been done**

UAPB personnel and personnel at Baxter Land Company continue to develop approaches to the product of hybrid fry. UAPB researchers have supplied information to additional Arkansas fingerling producers on infrastructure requirements and outlined INAD reporting requirements for the use of chemicals not yet registered by the USFDA that are currently used under the INAD permit maintained by the USFWS. A presentation that included some of the results of this program was delivered at the Catfishy Farmers of Arkansas annual meeting held in Hot Springs, AR in January 2010.

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #15**

**1. Outcome Measures**

Number of Arkansans adopting hybrid catfish production

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Artificial spawning of channel catfish

**What has been done**

One fingerling producer, the Baxter Land Company, in Arkansas has invested significant capital and energy into the production of hybrid catfish. Numerous farmers express an interest in rearing hybrid catfish and currently supply does not meet the regional demand

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #16**

**1. Outcome Measures**

Number of stores adopting recommendations

**2. Associated Institution Types**



- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Low cost imports of basa/tra from Vietnam and catfish from China have been substituted by grocery stores for U.S. farm-raised catfish.

**What has been done**

Marketing research generated new information on consumer preference for various fish and seafoods on how consumers perceived the importance of country of origin in seafood. Marketing research generated information on the effect of tilapia importation on us farm-raised catfish market.

**Results**

New market information was used by the Arkansas Catfish Promotion Board to promote positive attributes of U.S. farm-raised catfish. At least two retail grocery stores and one university campus switched to offering only U.S. farm raised catfish.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
603	Market Economics

**Outcome #17**

**1. Outcome Measures**

Number of Arkansans gaining access to catfish management information

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	510

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Increasing feed prices in 2008 created severe financial difficulties for many catfish farmers

**What has been done**

Pond studies and economic models developed continue to be used to refine recommendations for optimal stocking and feeding of catfish. Mathematical programming models have been developed to identify profit-maximizing combinations of on-farm production of catfish fingerlings, stockers, and food fish. Winter feeding studies have been conducted to compare effects of feeding and not feeding over the winter period. Marketing research group analyzed the effect of feed prices on US catfish industry.

**Results**

User friendly models were developed to enable catfish farmers to adapt profit-maximizing research recommendations to their individual farms. Careful cash flow planning resulted in farms successfully surviving a very difficult financial period. Information generated by the marketing group was used by Senator Lincoln to develop farmer friendly policy legislation.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

**Outcome #18**

**1. Outcome Measures**

Number of farmers helped with disease cases

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	450

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Detection of diseases in farmed raised fish is not as readily visible as in other terrestrial livestock species. Fish are raised in aquatic environments and are not easily visible to the farmer. Proper diagnosis of fish diseases prevents catastrophic losses to the producer. Healthy fish used as foodfish or baitfish ensures the safety of seafood for human consumption and prevents the spread of diseases to other aquatic systems.

**What has been done**

The UAPB Fish Health Diagnostics lab in Lonoke, AR conducts routine health inspections, issues health certificates for fish being shipped to other states and countries, conducts inspections for the baitfish certification program in Arkansas and analyzes water quality.

**Results**

In 2009, personnel at the lab conducted 570 disease cases, 175 water quality cases, and 40 health certifications for interstate or international transport of live fish. Technical assistance to clientele was also provided through more than 20 farm visits, 150 phone consultations, and 54 office visits. The certifications obtained by farmers, enables the shipment of more than \$100,000 fish.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
311	Animal Diseases

**Outcome #19**

**1. Outcome Measures**

Number of producers who learn project results

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	55

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Reducing catfish mortalities associated with toxic algal poisoning in the high salt area of Chicot County. Catfish losses due to toxic algal poisoning, caused by the algae, *Micracystis marinae*, can be staggering. During 1999 to 2001, massive losses of catfish occurred in the high salt area of Chicot County, estimated at 2 million pounds for each of those years. This equates to approximately \$1.5 million in fish value. In subsequent years, losses have been in the 100,000 to 250,000 pound range in that area of Chicot County. Establishing an algal monitoring program could eliminate the vast majority of these fish mortalities.

**What has been done**

The UAPB Aquaculture/Fisheries Program met with producers and proposed an algal monitoring program, especially for those producers in the high salt area of Chicot County, the area between the Boeuff River and Big Bayou. Producers were provided sampling vials to collect water samples from ponds on a weekly to an as needed basis. Aquaculture specialist analyzed these samples noting the presences of the target algae, *Micracysts marinae*. When populations of this algal species reached a certain level, specialist recommended application of an approved algaecide to reduce the algal populations. Initially, the program involved monitoring algae in over 1,000 ponds from approximately October through April of each year. Currently 568 ponds participate in the program.

**Results**

For 2009, producers participating in this program suffered no fish mortalities associated with toxic algae poisoning. This was the first year since the mid 1990's that no fish losses could be attributed to the toxic algae. It is estimated that this program saved the producers up to \$200,000 worth of fish.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

**Outcome #20**

**1. Outcome Measures**

Number of producers responding to project results

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	135

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Record high fish feed prices caused baitfish farmers to dramatically reduce feed inputs to their crops, reducing yields and profits, given the high fixed costs in baitfish production

**What has been done**

Research studies on baitfish production using fertilizer only and feeding were summarized and the effects of high feed prices and reduced feeding were analyzed. Results clearly demonstrated that farmers were still better off feeding fish to maintain yields, even with the high feed prices. This information was presented at the baitfish farmer's association meeting, and in a newsletter article. In addition, information on reduced-cost diets developed for catfish that should provide similar baitfish yields to more expensive traditional diets was also presented.

**Results**

Anecdotal reports indicate that farmers are planning to feed more this year, and one farmer has requested assistance with a feed tracking system as well as adding scales to his feed wagon.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

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

#### **Brief Explanation**

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

#### 1. Evaluation Studies Planned

- During (during program)

### **Evaluation Results**

### **Key Items of Evaluation**

**V(A). Planned Program (Summary)**

**Program # 29**

**1. Name of the Planned Program**

Food Safety in Aquaculture

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components		100%		0%
	<b>Total</b>		100%		0%

**V(C). Planned Program (Inputs)**

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.0	0.0	0.0

Actual	0.0	0.0	0.0	0.0
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2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

1. Brief description of the Activity

The 2008 Farm Bill provides for inspection of U.S. catfish to be moved from FDA to USDA-FSIS. FSIS has no experience with seafood and requested technical assistance in the development of the Catfish Inspection Program. When implemented, catfish farmers and processors will need assistance to gear up for the new program requirements.

2. Brief description of the target audience

There are three target audiences for this program: 1) USDA-FSIS personnel who need assistance in understanding catfish farming and processing; 2) catfish farmers who will need to adopt new monitoring and record-keeping practices; and 3) catfish processors who will need to adopt new monitoring and record-keeping practices.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>Actual</b>	58	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan:

Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>			
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Briefings to catfish farmers and catfish processors

Year	Target	Actual
2009	{No Data Entered}	2

**Output #2**

**Output Measure**

- Number of presentations to catfish farmers and processors

Year	Target	Actual
2009	{No Data Entered}	2

**Output #3**

**Output Measure**

- Number of emails, phone calls, and conference calls to catfish farmers and processors

Year	Target	Actual
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2009

{No Data Entered}

50



**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	We will provide technical assistance to USDA-FSIS by continuing to serve on panels and focus groups with FSIS
2	Number of contacts with catfish farmers and processors related to the new Catfish Inspection Program

**Outcome #1**

**1. Outcome Measures**

We will provide technical assistance to USDA-FSIS by continuing to serve on panels and focus groups with FSIS

**2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	48

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

The technical assistance provided to USDA-FSIS has helped them to develop the program for submission to OMB. The Vulnerability Assessment completed with involvement of technical experts. Drafts of the Food Defense Guidance and Plans have been developed.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

**Outcome #2**

**1. Outcome Measures**

Number of contacts with catfish farmers and processors related to the new Catfish Inspection Program

**2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
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2009 {No Data Entered} 8

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

### V(H). Planned Program (External Factors)

#### External factors which affected outcomes

- Other (Political opposition to the program from importers has slowed the process down.)

#### Brief Explanation

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

#### 1. Evaluation Studies Planned

- Other (USDA-FSIS does plan to do an evaluation of the program several years after implementation.)

### Evaluation Results

### Key Items of Evaluation