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July 9, 2003

Mr. Bart Hewitt
CSREES/USDA, Stop 2214
1400 Independence, SW
Washington, DC 20250-2214

Dear Mr. Hewitt:

The following revisions to the UAPB 2000-2004 POW are submitted based on both program expansion and program redirection. Program expansion results from the addition of two new research programs. One program, Sustainable Vegetable Production (Research program 5) contributes to CSREES goal 1. The other, Health Benefits of Probiotic Bacteria (Research program 11) contributes to CSREES goal 3.

The program redirection occurs in Extension program 6. A stakeholder Focus Group meeting held in late 2002 resulted in a careful review of priority program areas in the Plan of Work. Based on the stakeholder input and the review, a decision was made to create a new program area titled, "Recreational Fishing in the Delta," under National Goal 5: Enhanced Economic Opportunity and Quality of Life for Americans" and to eliminate the previous program area, "Management of Farm Ponds and Irrigation Reservoirs." Thus, Extension program 6 under the new title moves from National goal 4 to goal 5.

Work in these areas has begun and progress will be reported in the 2003 report of program accomplishments.

Sincerely,

Jacquelyn W. McCray

Dean/Director

JWMcC/bjc
Enclosure

REVISIONS TO PLAN OF WORK (POW) 2002-2004
UNDER THE AGRICULTURAL RESEARCH, EXTENSION, AND EDUCATION REFORM ACT OF 1998 (AREERA)

University of Arkansas at Pine Bluff

Contact Person:
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1890 Research and Extension Programs
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July 1, 2003

Revised July 1, 2003

OVERVIEW OF RESEARCH AND EXTENSION PROGRAMS REPORTED IN THE 5-YEAR PLAN OF WORK BY GPRA GOALS

Function	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
1890 Research Programs	1. Crop protection systems 2. Alternative crop production 3. Catfish production and management 4. Baitfish production and management 5. Sustainable vegetable production		5. Herbs and vegetable production 6. Human nutrition and health[1] 11. Health benefits of probiotic bacteria	7. Integrated pest management 8. Small ruminant nutrition/ management	9. Economic behavior of minority farmers 10. Improving quality of life
1890 Extension Program	1. Small farm/ Horticulture management 2. Livestock management 3. Catfish production/ management 4. Baitfish production/ management	5. Nutrition education and wellness system (Food Safety)	5. Nutrition education and wellness system (Diet and Health)		6. Recreational fishing in the Delta 7. Family and youth programs Young Scholars •Adolescent pregnancy prevention •Parenting education •Child care training

National Goal 1. An agricultural system that is highly competitive in the global economy.

Goal 1 – Research Program 5 – Sustainable vegetable production

Priority Program Area: Sustainable vegetable production under sustainable cultural conditions

Key Theme: Other – Sustainable Agriculture

Statement of Issues. Lack of production efficiency, below average yields, lack of consumer appeal and low profit margins keep small farmers from growing sweet potatoes as their major crop and primary occupation. These farmers are usually small family farmers or small acreage farmers with limited resources who also grow vegetables. Vegetable acreage, especially sweet potatoes, cultivated by small acreage growers declined by more than 68 percent from 1973 to 1992. Prolonged drought, increased cost of production, including fertilizers and pesticides caused growers to reduce acreage or stop growing sweet potatoes. The adoption of improved production efficiency and identification of sweet potato varieties that require minimum cultural practices will benefit small acreage growers by –

(1) reducing the man-hour labor cost required for cultural practices
(2) providing economic opportunities for farmers with unprofitable row crop operations
(3) attracting younger producers who are seeking a profitable crop
(4) minimizing expenses of fertilizers, irrigation and pesticides

Performance Goals

1. Identify stress tolerant sweet potato varieties of superior quality that perform well under minimum cultural conditions used by limited resource growers.
2. Develop a research study to compare new improved cultural practices that enhance efficiency with old practices still in use.
3. Identify production strategies that lower production costs and increase net returns.
4. Evaluate the link between sweet potatoes grown under minimum cultural conditions and quality attributes.
5. Develop an overall approach that enhances productivity, quality living habits and sound entrepreneurial spirit.

Key Program Components

1. Comparative studies of planting dates and in-row plant spacing.
2. Studies of yield and quality of sweet potato under different fertilization levels, with or without chemical treatment.
3. Genotypes selection and breeding both in the field and greenhouse conditions.
4. Assessing eating quality of sweet potato produced under no weed control, irrigation and pesticides.
5. Investigative study of sweet potato horticultural traits tolerant to minimum cultural practices.

Output Indicators

1. Number of published abstracts
2. Number of journal articles published
3. Number of articles published in proceedings
4. Number of presentations made at professional meetings
5. Number of presentations made at any other meetings for interest groups
6. Number of articles on valuable medium used by the consumers.

Internal and External Linkages

1. Cooperation with Plant Pathologist from USDA, Plant and Animal Health Inspection Service, located at University of Arkansas at Pine Bluff, Regulatory Science Department.
2. Cooperation with Soil Scientist, plant breeders from University of Arkansas at Pine Bluff, and vegetable crops diseases specialist from the Cooperative Extension Service
3. Cooperation with sweet potato breeders from Mississippi State University Experiment Station, Pontotoc, will continue as in the past years.

Target Audiences

1. Small acreage producers, limited resource farmers
2. Commercial sweet potato growers
3. Hubby farmers with market gardens for the fresh farmers market

Outcome Indicators

1. Increase number of farmers who use efficient production strategies and tolerant varieties to increase sweet potato production acreage with corresponding increase in profit.
2. Increase number of farmers who use efficient production strategies and tolerant varieties to hold down cost and increase net returns.
3. Increase number of row crops acreage converted to sweet potato production.
4. Increase volume of sweet potato production supplies and equipments sales and number of persons employed.

Evaluation Framework. The evaluation of this program will be based on the number of farmers who adopt production practices that increase profits and lower production costs. Success of this program will be measured by the number of tolerant varieties available to farmers.

Program Duration – Long term

Allocated Resources – CSREES Funding – **$12,065**
State Matching – **$**

Stakeholder Input. Periodic production meetings, farmers market premises and interaction during on-farm demonstration trials provide ample opportunity for the farmers, Extension agents and Extension associate to discuss production, management concerns and suggest remedies. Frequent communication with other Extension specialists, research scientists attending educational meetings, and active participation with collaborating organizations enhances responses/solutions to farmers' production problems and broadens knowledge to resolve farming

related problems.

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National Goal 3. A healthy, well-nourished population.

Goal 3 – Research Program 11 – Health benefits of probiotic bacteria

Priority Program Area: Health benefits of probiotic bacteria among pre-school children

Key Theme: Human Nutrition

Statement of Issues. Children in pre-schools have a high incidence of respiratory and gastro-intestinal infections. Prevention of infections in pre-schools is of public health and economical importance. Research conducted in the Lower Mississippi Delta have documented that children aged three- to nine-years old had an average daily intake of 301 mg of calcium, less than half the recommended dietary intake for this age group. Yogurt is a healthy and nutritious food that provides protein in a more digestible form and it is a source of a considerable amount of calcium. In addition, yogurt improves intestinal bowel movements, increases the absorption of calcium and iron, and decreases lactose intolerance. This study will determine if Lactobacillus present in yogurt can reduce the occurrence of respiratory and gastro-intestinal symptoms in pre-school children aged three- to five-years old in Jefferson County, Arkansas while simultaneously increasing their calcium intake.

Performance Goals

At the end of this study, we expect to achieve these goals in Jefferson County, Arkansas:

1. Selection of a brand of yogurt to be used for the study,
2. Increase knowledge of the health benefits of yogurt among parents and teachers of pre-school children through workshops,
3. Selection of at least five (5) acceptable flavors of yogurt by three- to five-years old pre-school children using the hedonic scale test,
4. Reduce the occurrence of respiratory problems (fever, runny nose, sore throat, cough, chest wheezes, earaches) and gastro-intestinal symptoms (diarrhea, vomiting, stomach ache) in pre-school children three- to five-years old fed yogurt containing probiotics during the feeding study, and
5. Increase consumption of yogurt and calcium among pre-school children enrolled in the project's feeding study.

Key Program Components

1. Qualitative and quantitative microbiological analysis of yogurt
2. Promotion of health benefits of yogurt among parents and teachers of pre-school children
3. Hedonic scale test of the acceptability of yogurt among pre-school children
4. Feeding study using yogurt containing probiotics
5. Follow-up consumption of yogurt in pre-school children

Output Indicators

1. Articles in peer-review journals
2. Abstracts in scientific meetings
3. Presentations in the University of Arkansas at Pine Bluff's annual research forum
4. Presentations in University of Arkansas at Pine Bluff's annual Rural Conference
5. Number of participants in attendance at educational workshops for parents and teachers in Jefferson County
6. Number of mass media articles

Internal and External Linkages

In-State

1. Department of Human Sciences, University of Arkansas at Pine Bluff
2. School Districts and Head Start Programs, Jefferson County, Arkansas

Target Audiences

1. Pre-school children in Jefferson County, Arkansas
2. Parents
3. Teachers
4. Head Start and day care center food service staff

Outcome Indicators

1. Number of pre-schools that increase the use of yogurt in meals and snacks.
2. Number of pre-schools reporting decreases in onset of respiratory and gastro-intestinal symptoms in children whose diets increased in yogurt consumption.
3. Number of pre-schools reporting decreases in absences due to respiratory and gastro-intestinal symptoms in children whose diets increased in yogurt consumption.
4. Overall increase in daily calcium intake of children in pre-schools addressing yogurt to meal and snack foods.
5. Percentage of children who increase their yogurt consumption after being exposed to yogurt during the feeding study.

Evaluation Framework

1. Measure frequency of respiratory and gastro-intestinal symptoms in pre-school children involved in the study,
2. Determine consumption of yogurt in pre-school children by use of 24-hour recall, and
3. Determine acceptability of yogurt among pre-school children.

Program Duration

Short tem: Performance goals 1, 2 and 3
Intermediate term: Performance goal 4
Long term: Performance goal 5

Allocated Resources – CSREES Funding – **$18,662**
State Matching – **$**

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National Goal 5. Enhanced economic opportunity and quality of life for Americans.

Goal 5 – Extension Program 6 – Recreational fishing in the Delta

Priority Program Area: Recreational fishing in the Delta

Key Theme: Tourism, Community Development

Specific Program Plan: Enhancing the social and economic value of recreational fishing in the Delta economy

Statement of Issues. Spending on recreational fishing generates a great deal of economic activity in the Delta region of Arkansas as elsewhere across the nation. Recreation creates over $200 million in direct revenue along the upper Mississippi River, over 3,000 jobs, and the even greater indirect effects. It is likely that the economic value of recreation in the Lower Mississippi River is of similar magnitude. In the Upper Mississippi River System, recreational fishing generated 31% of the total value of recreation, and was the most popular recreational activity. In addition to the recreational value of fishing in the rivers and streams in Arkansas, the thousands of farm ponds across Arkansas and the United States represent an opportunity to provide fishing opportunities for recreation and for profit for farm owners. Properly managed farm ponds will yield two to three times more fish than unmanaged ponds. In addition, the proposed southeast Arkansas irrigation projects designed to provide agricultural water supplies from the White River, Bayou Meto, and the Little Red River will create on-farm storage reservoirs capable of capturing and storing water for use during summer months. On-farm storage reservoirs will provide opportunities for the creation and management of quality recreational fisheries resources. Increased opportunities for young people to become involved in fishing may contribute to the development of positive attitudes towards environmental stewardship. Increased community fishing opportunities will contribute to community development.

Performance Goals

1. Recruitment and survival of hatchery-reared largemouth bass in natural waters.
2. Improve hatchery methods for largemouth bass.
3. Impact of remediation efforts on largemouth bass populations in natural waters.
4. Improve recreational fishing opportunities for farm pond/surface water storage reservoirs for recreation and supplemental income.
5. Improve hatchery methods for hybrid striped bass.
6. Improve recreational fishing opportunities for youth and urban citizens.

Key Program Components

1. Larval fish ecology program
2. Fisheries management program
3. Pond and hatchery management program
4. Farm pond management program
5. Irrigation reservoir management program

6. Youth and urban fishing education programs

Output Indicators

1. Number of refereed journal articles
2. Number of proceedings, book chapters, books published
3. Number of abstracts published
4. Number of research presentations at scientific meetings
5. Number of participants in attendance at educational meetings, field days, and workshops
6. Number of mass media articles, programs, and features prepared
7. Number of direct county agent contacts with producers, consultants on specific management issues
8. Number of producers acquiring new skills to manage farm ponds and surface water storage reservoirs for sportfishing
9. Number of participants in youth and community fishing education programs

Internal and External Linkages

Multi-State

1. Southern Regional Aquaculture Center that sponsors regional projects involving a large percentage of the land-grant universities in the southern region.
2. Cooperative research programs with USDA-Agricultural Research Service, H. K. Dupree Stuttgart National Warmwater Aquaculture Research Center.

In-State

1. Arkansas Game and Fish Commission
2. 1862 Cooperative Extension Service (for wildlife components of multi-use management)
3. Arkansas Development and Finance Authority

Target Audiences

1. Sport fishermen
2. State and federal hatchery managers
3. Private sector hatchery managers
4. Farm pond owners
5. Owners of surface water storage reservoirs
6. Youth anglers

Outcome Indicators

1. Improved survival of largemouth bass stocked in natural waters.
2. Increased hatchery production of sizes of largemouth bass of the optimal size for best survival in natural waters.
3. Improved remediation efforts to improve largemouth bass fishing in natural waters.
4. Increased number of producers who use new knowledge about managing farm ponds to improve recreational fishing.
5. Increased number of producers who use new knowledge about managing surface water storage reservoirs.
6. Increased efficiency of hatchery production of hybrid stripped bass.

7. Increased participation of youth and communities in recreational fishing activities.

Evaluation Framework

1. Population assessment of largemouth bass populations
2. Production records of state and federal hatchery managers
3. Surveys of private sector hatcheries
4. Participant assessment of knowledge, attitudes and skills
5. Surveys of practice adoption
6. Examples/success stories

Program Duration

Short term: Performance goals 2 and 5
Intermediate term: Performance goals 1 and 3
Long term: Performance goals 4 and 6

Allocated Resources – CSREES Funding – **$12,762**
State Matching – **$94,197**
Other Funding – **$29,259**

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