

**PLAN OF WORK UPDATE
FY 2005-2006**

**AGRICULTURAL RESEARCH--FORMULA
FUNDING (EVANS-ALLEN PROGRAM)**

Submitted to:

**USDA/CSREES
Washington, DC**

Submitted by:

**Alcorn State University
Alcorn State, MS 39096**

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ALCORN STATE UNIVERSITY

ALCORN STATE, MISSISSIPPI 39096-7500

OFFICE OF INSTITUTIONAL ADVANCEMENT,
PLANNING, AND RESEARCH

July 16, 2004

Mr. Bart Hewitt, Program Analyst
Planning and Accountability
Office of the Administrator
Cooperative State Research, Education,
and Extension Service

Dear Mr. Hewitt:

**RE: Alcorn State University's FY 2005-2006 Agriculture Research
Formula Research (Evans-Allen) Plan of Work**

I am e-mailing to you the Updated FY 2005-2006 Plan of Work for the
Agricultural Research Program--Formula Funds (Evans-Allen) Program for Alcorn
State University.

Please let me know if there are questions. Thank you.

Sincerely,

Franklin D. Jackson
Interim Research Director

:llb

Enclosure

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**ALCORN STATE UNIVERSITY
PLAN OF WORK FOR
AGRICULTURAL RESEARCH FORMULA FUNDS
(EVANS-ALLEN PROGRAM)**

Introduction

The last Plan of Work for Agricultural Research--Formula Funds/Evans-Allen Program covers the five-year period of October 2000-September 2004. The Plan of Work is being extended to include two additional years--FY 2005, FY 2006. Much of the background information contained in the FY 2000-2004 Plan of Work (POW) is still relevant, therefore, rather than doing a general revision of that POW, focus will be placed on the update for FY 2005-2006. The FY 2005-2006 update will therefore, primarily address the goals and projects which will be undertaken during the two-year period.

The FY 2005-2006 update contains some of the themes that are included in the FY2000-2004 POW; however, a few new themes are added, for example, a theme on nutrition, health, wellness and obesity. One significant aspect of this FY 2005-2006 POW update is the effort made to emphasize consolidation of projects and to ensure greater collaboration among research scientists, extension workers and stakeholders. Research scientists are also encouraged to collaborate with scientists from non-agricultural and food system disciplines as well as with scientists from institutions and agencies/organizations external to campus.

It should be noted once more that this updated Plan of Work for FY 2005-2006 focuses on the goals and program components which will be undertaken through the Formula Funds--Evans-Allen and related matching during FY 2005-2006.

RELATION OF FY 2005 - 2006 PROJECT

FIVE FEDERAL NATIONAL GOALS

Goal 1: *An agricultural system that is highly competitive in the global economy. The research and education, empower the agricultural system with knowledge that will improve the competitiveness in domestic production, processing, and marketing.*

During FY 2005-2006, global competition among farmers will continue even more fiercely than during the period of FY 2000-2004. This will be more evident with respect to limited resource and family farmers. One reason for the intensity of global competition among small (limited resource) and family farmers is the result of the North America Free Trade Agreement (NAFTA) which opens the U.S. market for farmers of other North American countries. If our limited resource farmers are to compete with large U.S. farmers and farmers from other countries where farm wages tend to be much lower than those paid in the U.S., the limited resource farmers must continuously improve their farming/marketing practices as well as continuously identify niches that are most suitable for U.S. limited resource and family farmers.

During FY 2005-2006, research will focus on identifying and testing a selected number of vegetables and fruits and related farming practices that may be adopted by limited resource and family farmers to position them to be competitive in the global economy. Efforts will also be made to improve the quality of meats to respond to consumers' demand. Consumers are more and more concerned about the quality of meats and other food consumed, and the effects of the food on health. The meat industry has to develop meat products that are lean, low in cholesterol and acceptable to the consuming public.

Program 1.1 Selecting and testing alternative fruits and vegetables and farming (input) practices for optimum profitability of limited-resource and family farmers.

Key Program Components:

- ◆ Selection and testing of blueberry, varieties, and related farming practices for optimizing competitive advantage and profitability for limited-resource and family farmers.
- ◆ Niche market study.
- ◆ Determine the feasibility of no-till approach to the production of blueberry and a few selected vegetables and the impact on soil conservation, yield and economic profitability.
- ◆ Evaluate peanut varieties for yield, yield components and sustainability; determine profitability.

SY: 1.00
TY: 2.50

Budget: \$250,000

Program 1.2 Improving the quality, marketability and profitability of sweet potato produced by limited-resource farmers by the selection, breeding and testing of selected varieties and the testing of different practices to control diseases/pests (Integrated Pest Management).

Key Components:

- ◆ Test and screen sweet potato breed lines, plant introduction and cultivars for soil insect and diseases resistance.
- ◆ Crop rotation with crop species that have allelopathic effect on insect pest, and interplant of resistance sweet potato cultivars with susceptible lines to suppress soil insects.

The following will be carried out in conjunction with the Biotechnology Research Program.

- ◆ Breeding and hybridizing of sweet potatoes for yield, disease and insect resistance, storage root quality and storage quality.
- ◆ Identify sources of genetic resource for resistance to the sweet potato weevil. Develop an understanding of the genes that make the sweet potato weevil cause damages to sweet potatoes.
- ◆ Develop molecular markers that are linked to important traits in sweet potatoes i.e., protein, beta-carotene, and flavolin content.
- ◆ Increase nutritional value of sweet potato by breeding/selecting sweet potato for high antioxidant content.

SY: 1
TY: 2

Budget: \$160,000

Program 1.3 Conduct research on new/emerging forage sources for increasing the quality of nutrition for beef cattle while increasing the profitability of beef production for limited-resources and family farmers.

Key Program Components:

- ◆ Test ryegrass varieties for adaptability to early summer environment in southwest Mississippi while maintaining their nutritional value, digestibility and dry matter yield.
- ◆ Determine the cost effectiveness of limited resource and family farmers utilizing ryegrass during early summer as a forage for beef cattle.
- ◆ Determine the most promising varieties of ryegrass for limited resource and family farmers based on the results of the research.

SY: 0.5 **Budget:** \$81,000
TY: 1.0

Program 1.4 Studies to improve the quality of meat products.

Key Program Component:

- ◆ Evaluate the effects of selected feeding strategies, selection, environment and management practices on meat quality.
- ◆ Evaluate meat products as functional foods to improve human health.
- ◆ Conduct studies on meat derived from pork, beef, poultry, and chevon.

SY: 1 **Budget:** \$100,000
TY: 1

Goal 2: *A safe and secure food and fiber system. To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.*

Situation: No programs under this goal.

Goal 3: *A healthy, well-nourished population.*

Situation: Mississippi has the highest incidence of obesity, and obesity related diseases such as: diabetes, hypertension and cardiovascular disease (CVD), in the U.S. Efforts to intervene in the causes of obesity have been largely ineffective. The long term goal of this research is to improve the health, as defined by ‘maintaining a healthy weight, eating nutritious foods, an active lifestyle and access to medical care’, of Mississippi residents. This research seeks to identify the environmental, psychological and cultural determinants of the health of residents in southwest Mississippi. One area of great concern is obesity. Obesity remains the most pressing health issue confronting residents of Mississippi. Identifying the environmental, psychological and cultural determinants of obesity will provide data from which successful intervention efforts can be designed and implemented. Decreasing the incidence of obesity will lead to a decrease in obesity related health problems such as diabetes, hypertension and CVD and translate into a better quality of life for Mississippi residents. Another area of concern is health disparity. Health disparities such as lack of access to medical care, follow-up medical care, and lack of health information all contribute to the poor health of Mississippi residents. Mississippi is one of many states in the southeast that

comprise a region known as the ‘Stroke Belt’. A major cause of mortality in the region is lack of preventive medical care. This research will identify the causes of health disparities and design appropriate interventions to reduce health disparities.

Program 3.1 Identify and intervene in the environmental, psychological and cultural determinants of health in southwest Mississippi.

Key Program Components:

Increase the health of residents in southwest Mississippi

- ◆ Identify environmental factors that may promote obesity.
- ◆ Identify psychological factors that reduce the desire or motivation to engage in physical activity and engage in healthy eating behaviors.
- ◆ Develop and test interventions designed to increase healthy life styles.
- ◆ Identify cultural factors that promote obesity that include food preparation methods and acceptable body images.
- ◆ Reduce the incidence of obesity among residents of southwest Mississippi.
- ◆ Identify environmental factors that may cause health disparities.
- ◆ Provide data that may justify changes in public policy.
- ◆ Identify socioeconomic factors that may contribute to health disparities.

SY:	1	Budget:	\$225,000
TY:	2		

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

Alcorn State University is located in Southwest Mississippi, in Claiborne and Jefferson counties. These counties and many other counties in the delta and other regions of the state of Mississippi are part of the Southern Black Belt. Historically, the Black Belt has been characterized by high rates of unemployment, low income, persistent poverty, and a level of economic activity inadequate for a decent quality of life. The economy of the Black Belt counties in Mississippi is largely agricultural and agribusiness based. There is a need to sustain past efforts, develop new and enhanced economic opportunities for the populations of the Mississippi black belt counties, especially those engaged in agriculture, forestry and agribusiness-related activities. Research will be used to evaluate the economic impact of alternative strategic initiatives emanating from community-based organizations, government agencies, policies and programs in the context of a changing domestic and global economic setting. Furthermore, research will explore entrepreneurial skills in decision-making, domestic and international opportunities for farmers and rural agribusinesses and their economic impact.

Program 5.1 Determine factors that could improve the profitability and sustainability of limited resource farms and the maintenance of farm ownership by limited resource and family farmers in southwest Mississippi.

Key Program Components:

- ◆ Implement studies to identify/validate constraints, and explore opportunities for farmers, rural agribusinesses, and citizens of the Mississippi Black Belt.
- ◆ Categorize strategic initiatives, policies/programs, and evaluate impact.
- ◆ Identify current level of skills, practices, and critical gaps; implement outreach programs to enhance competitiveness

SY: 1.2 **Budget:** \$180,000
TY: 2.0

Other: **Administration of research supported by Section 1445, PL 95-113 funds.**

Key Program Components:

- ◆ Salary, travel, and fringe benefit support for support staff (non-scientists, non-technical).
- ◆ Support of overhead costs to the university.
- ◆ Funding of the research support farm.

SY: NA **Budget:** \$900,000
TY: NA