Sent 7/22/99 slm

The Agriculture Program

The Texas A&M University System

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July 14, 1999

George Cooper
Deputy Administrator
USDA/CSREES/Partnerships
Mail Stop 2213
1400 Independence Ave., SW
Washington, DC 20250-2213

Dear Dr. Cooper:

Enclosed is the Plan of Work for the Texas Agricultural Experiment Station. This comprehensive statement of intended research activities for the next five years meets the requirement of the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA), as allowed under the USDA's "Guidelines for Land Grant Institution Plan of Work" (Federal Register: July 1, 1999; Volume 64, pp 35909-35919).

This package should also include the Texas Agricultural Extension Service, Prairie View A&M University Research Center, and the Prairie View A&M University Extension Service. However, at this point we do not have the other three parts available for submission. At the earliest opportunity, I will send an updated package containing all four parts.

Sincerely,

Edward A. Hiler

Edward A. Hiler
Vice Chancellor and Dean
Agriculture and Life Sciences
Director, Texas Agricultural Experiment Station
and Texas Agricultural Extension Service

EAH/saf

Enclosure

xc: John Beverly
Frank Gilstrap
Ree Kenerley
Dewey Liccioni

PLAN OF WORK

Texas Agricultural Experiment Station
Texas Agricultural Extension Service
Prairie View A&M University Research Center
Prairie View A&M University Extension Service

Texas A&M University System
Agriculture Program

Federal Fiscal Years
2000 to 2004

PLAN OF WORK

Texas Agricultural Experiment Station

Texas A&M University System
Agriculture Program

Federal Fiscal Years
2000 to 2004

Introduction:

The Texas A&M University System (TAMUS) Agriculture Program is headquartered in College Station, Texas, and consists of the Texas Agricultural Experiment Station (TAES), the Texas Agricultural Extension Service (TAEX), Prairie View A&M University Research Center, and the Prairie View A&M University Extension Service.

This Plan of Work for the Texas Agricultural Experiment Station is a comprehensive statement of intended research activities for the next five years as required by the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA), and as allowed under the USDA's "Guidelines for Land Grant Institution Plan of Work" (Federal Register: July 1, 1999; Volume 64, pp 35909-35919). The Plan is based in part on the 1999 Strategic Plan of the Texas Agricultural Experiment Station.

Point of Contact:

All correspondence regarding this plan should be directed to:

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Agriculture and Life Sciences
Director, Texas Agricultural Experiment Station
and Texas Agricultural Extension Service
Texas A&M University System
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Adoption by Reference :

We adopt by reference the Southern Region Strategic Agenda as developed by the Southern Association of Agricultural Experiment Stations and as updated February 8, 1999, for fulfillment of our obligations to the AREERA's multistate, multidisciplinary and integrated activities (see appendix B). Accomplishments reporting on our multistate, multidisciplinary, and integrated activities for our Station will be through the annual Southern impact statements and the Southern results reports.

Background

The AREERA of 1998 amended the Hatch Act of 1887, the Smith-Lever Act of 1914, and sections 1444 and 1445 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to require a plan of work be submitted to and approved by the Cooperative State Research, Education, and Extension Service (CSREES) before funds authorized under these Acts are distributed. The required process includes (1) submission of a 5-year plan of work (POW) every five years; (2) submission of an annual update of the 5-year plan of work, if applicable; and, (3) submission of an annual report of accomplishments and results. This Act also amended the Hatch Act to redesignate the Hatch Regional Research Fund as the Multistate Research Fund specifying that these funds be used for cooperative research employing multidisciplinary

approaches in which a State Agricultural Experiment Station (SAES), working with another SAES, USDA/ARS, or a college or university, cooperates to solve the problems that concern more than one state. The Smith-Lever Act was amended to require that each institution receiving funds under Sections 3(b) and © of the Act expend funds for multistate activities in FY 2000 and after that, a percentage of these funds equal to the lesser of 25 percent or twice the percentage of funds expended by the institution for multistate activities during FY 1997.

The AREERA further amended both the Hatch and Smith-Lever Acts to require that each institution receiving agricultural research and extension formula funds as noted above, expend for integrated research and extension activities in FY 2000 and after that, a percentage that is at least equal to the lesser of 25 percent or twice the percentage expended for these activities in FY 1997.

Required Background Information

1. Process for deciding short-term, intermediate, and long-term agricultural issues. This 5-year POW reflects content of program(s) partially funded by federal agricultural research and extension formula funds, and the required matching state funds. All TAES principal investigators work through a Cooperative Research Information System (CRIS) project for spending federal and state funds. The POW also addresses critical short-term, intermediate, and long-term issues in Texas and the nation, and these are related to and are part of the five national goals of established in the CSREES Agency Strategic Plans (as stated below in "Planned Programs"). In creating their CRIS instrument (i.e., Hatch and/or McIntire Stennis project), each scientist assigns portions of their work to applied (i.e., short-term), development effort (i.e., medium-term), and basic (i.e., long term). These terms link all projects to a time-frame for the five national goals of CSREES and the Research, Education, and Economics (REE) Mission area of the U.S. Department of Agriculture.

2. Process for consulting users of agricultural extension and research (stakeholders). Texas uses two major processes for stakeholder input, the Texas Agricultural and Natural Resources Summit Initiative and the Texas Community Futures Forum. These processes engage the under-served (i.e., individuals, groups, and/or organizations whose needs are not served in traditional programs) and the under-represented (i.e., individuals, groups, and/or organizations who may not have fully participated in previous programs, including women, racial and ethnic minorities, persons with disabilities, limited resource clients, and small farm owners and operators).

(1) The Texas Agricultural Summit Initiative. The Texas Agricultural and Natural Resources Summit Initiative is an apolitical forum for people concerned about Texas' food, fiber, and natural resource system to meet and plan for a future we all share. The Initiative began in 1993 on the principle that Texans can find workable solutions to any challenge if given an open forum in which to share ideas. The Initiative purpose is to identify and resolve critical issues facing Texas agriculture by bringing together representatives from every sector and interest.

In 1993, Texas held the first-ever Texas Agricultural Summit with 450 participants representing agriculture, agribusiness, food industry, natural resources, consumers, government, academia and media. That event identified 15 high-priority issues facing Texas agriculture in the 21st century. Soon after, the Summit process spawned several regional mini-summits in Odessa, Lubbock, Temple, Dallas and Weslaco to propose solutions to 15 high-priority issues identified at 1993 Summit. Simultaneously, the 21-member Summit

Executive Committee consisting of leaders from agriculture and natural resources, developed an organizational structure for continuing the work and analyzed high-priority issues to determine the initial task forces. Members represent diverse stakeholder groups and recommend action plans and implementation procedures.

Four Issue Resolution Task Forces were initiated, including Water Rights; Food, Fiber and Natural Resource Systems Education; Agricultural Competitiveness; and Agricultural Leadership. These task forces were to identify and initiate additional task forces to address unresolved issues from the 1993 Summit and future Summit meetings. The process consists of many people working together including producers, processors/manufacturers, retailers/wholesalers, distributors, scientists, educators, government officials, environmentalists, and consumers. Issue resolution task forces are created to help identify and initiate additional task forces to address unresolved issues from the 1993 Summit and other Summit meetings. Task force recommendations are then distributed to the media, public officials, educational institutions, state and federal agencies, commodity groups, producer organizations, and key business leaders.

Summits held after 1993 include the "Food Safety, Nutrition and Health Summit" held in December 1995, the "Farm Bill and Beyond Summit Conference" held in June 1996, the "Environmental and Natural Resource Policy for the 21st Century Summit Conference" held in November 1996, the "Rice Summit Conference" held in February 1997, and "Financing Texas Agriculture Summit Conference" held in May 1998. Summit Conferences scheduled include the "Texas Forestry: Preparing for the 21st Century" scheduled for June 1999, and the "Agricultural Biotechnology and Genomics Summit" scheduled for late September or early October 1999.

(2) Texas Community Futures Forum. The Texas Community Futures Forum (TCFF), is a statewide process begun in January 1999, that identifies priority issues and needs in all 254 Texas counties. A form of the TCFF has been used for long-range program planning since 1985, and is a broad assessment of needs sponsored by the Texas Agricultural Extension Service and the Texas A&M University System's network of county, district and state faculty.

The TCFF engaged citizens, experts and staff from local and state agencies to plan for the next 3-5 years. The first TCFF meeting in each County was an Open Forum that included representative citizens, and used nominal group techniques to generate issues and assess their relative importance to the County. A list of prioritized issues was created and shared with other County stakeholders. The second TCFF County meeting was a Focus Forum led by trained facilitators. This group included the same citizens participated as in Open Forum plus local resource people (experts, stakeholders, staff from other agencies and Extension staff), and further refined the prioritized County list of issues.

Calendar of Activities. Each County began TCFF with Phase I in October 1998 - January 1999 when County faculty established a plan for conducting the TCFF, set dates for Forum events, identified and talked with cooperating agencies, identified facilitators, and identified and invited participants. Phase II occurred during February - March 1999 when Open Forums assessed needs of the community, county and region and experts were recruited to participate in the Focus forum, and when Open Forum results were available and a briefing conference was scheduled to distribute the results of the Open Forum and recruit expertise for the Focus Forum. Open Forums each consisted of 30-36 individuals, though 50 individuals were occasionally accommodated, and one facilitator was used per 10 persons. In some larger counties, more than one Open Forum was held (e.g., in every precinct, or according to urban and rural delineations in the county). In this case, an additional forum was planned to aggregate the findings from the previous Open Forums. Representatives from each Open Forum were invited to the follow-up Open Forum. Open Forum participants

included county judges, executive board chairs and another designated individuals from the various communities in the county, organizations, clients of other agencies, racial/ethnic groups, women and men. In the Open Forum, the emphasis is on the end user, not necessarily the leadership of the county or community. Once needs and issues were identified, leaders and experts from the county and community were invited to participate in the Focus Forum to draft action plans to address the issues. Phase IV occurred during March - April 1999 when Focus Forums drafted action plans to address the needs identified in the Open Forum. Phase V occurred during May - June 1999 during which time Local Issue Teams worked with partnering agencies to address the needs identified for each issue, and the Planning Document was reviewed, revised, and finalized for next four years.

Open Forum Process. Nominal group techniques were used as the facilitation technique during the Open Forum. A single question was supplied by the facilitators, and individuals trained as facilitators managed the group process. All participants answered the same question, and each group identified and ranked the list of items generated by this question. The top items from each group were reported and combined in a general session where participants voted again to produce a list of priority items. Outputs of the Open Forum included a prioritized list of citizen needs and a grouping of those needs into similar categories. The categories and the ranking of items allowed comparison of issues across counties and within regions. All information was summarized into a TCFF Report and distributed to citizens who participated in the Open Forum, key individuals in community agencies and organizations, County judges and commissioners; members of the Extension Program Council's executive board, legislators who represent the county in Austin, key leaders invited to participate in respective Focus Forums, and each Extension agent serving the county. The Report publicly shared the process and the information collected from the Open Forum, described the Open Forum process in the county, listed needs and concerns of the county as identified during the open forum process, and was a starting point for the Focus Forum.

Focus Forum Process. Focus Forums were the next step to address the needs identified in the Open Forum. Additional resource people were invited, and were briefed and informed about the structure for this meeting. The Open Forum was a need identification process, and the Focus Forum was an action planning process. At the conclusion of Focus Forums, Counties had a planning document for setting directions for the next four years. Using a Small Group Option, 12-15 experts and key stakeholders and were selected to attend the Focus Forum which was scheduled for about 2.5 hours. Using a step-by-step process led by the facilitator, these groups identified goals, objectives, and action steps, reconvened for a general assembly, and then adjourned. In the Large Group Option, 30-40 key individuals participated. All Focus Forums were based on the Open Forum Report, and addressed several high priority issues. Approximately 6-8 individuals with influence or expertise for each high priority issue were invited to attend each event. For example, 35 individuals attending an event would represent the highest four priorities in the Open Forum report, and four facilitators, one per high priority issue, would facilitate small groups. Each Focus Forum was scheduled for about 2-5 hours. The Extension agent provided local trend data for the county and some information related to the high priority issues.

Sample Agenda. A sample agenda for the Open Forum would include (1) small groups identify their views about the future for their community and in the county; (2) small groups rank the needs and concerns they have identified; (3) large groups ranked the needs and concerns; (4) the group assesses needs by affinity areas. A sample agenda for the Focus Forum would include (1) breakout groups conducted by facilitators, (2) developing "issues" into "goals and objectives" from "goals," (3) developing "actions" from "objectives," (4) developing resources, times frames, and sources of assistance, and (5) presentations from groups.

3. Collaboration with other universities and colleges in Texas and regional and/or multistate work with institutions outside Texas. TAES scientists collaborate with many non-land grant institutions within Texas, and with land grant institutions external to Texas. Key collaborations within Texas include those with Prairie View A&M University, Texas Tech University and the University of Texas. TAES collaborations external to Texas (see Appendix A) are listed on the website for the Southern Association of Agricultural Experiment Station Directors (http://www.msstate.edu/org/saaesd/infobook/project/regpro.htm), and are termed Multistate Research Fund (MRF) supported projects. TAES collaborates in 25 of 34 MRF projects in the Southern Region, 9 of 27 in the North Central Region, 8 of 22 in the Northeast Region, and 7 of 19 in the Western Region.

4. Research and extension cooperation in addressing the critical issues in Texas and elsewhere. The TAES and TAEX routinely work together to transfer technology and knowledge to citizens of Texas. This is particularly evident in those scientist positions which are joint appointments between TAES and TAEX, and in the programming outcomes resulting from the recently established Agriculture Administrative Council which consists of Administrators of Agriculture Programs in each member institution of the Texas A&M University System. At the Southern Region level, TAES scientists also participate in many of the 31 Southern Extension/Research Activities-Information Exchange Groups (i.e., SERA-IEGs).

5. Extension, education and outreach programs to convey available research results on critical agricultural issues, including multicounty cooperation in the dissemination of research information. The TAES consists of 13 off-campus Agricultural Research and Extension Centers housing 112 TAES faculty. Most of these Centers also house regional TAEX administrators (i.e., District Extension Directors) and TAEX Extension Specialists, and all collaborate in program planning, development and delivery. The TAEX serves all 254 Texas counties through 12 district centers and 250 county offices. Research and Extension faculty and specialists are also based at Texas A&M University in College Station and they routinely work with scientists at off-campus Centers, and with County program staff to deliver information and programs.

6. Merit review and scientific peer review processes. The merit review process (i.e., evaluation whereby quality and relevance to program goals are assessed) is accomplished by regular meetings of TAES scientists and administrators with constituents and others, including regular meetings with the following groups.

EXTERNAL NON-COMMODITY GROUPS:

* Alamo Area Council of Governments
* Brazos River Authority
* Brazos Valley Council of Governments
* Capital Area Planning Council
* Lower Colorado River Authority
* Office of the Governor
* Panhandle Regional Planning Commission
* South Plains Association of Governments
* Sul Ross State University
* Texas Animal Health Commission
* Texas Cancer Council
* Texas Comptroller of Public Accounts
* Texas Dept. of Economic Development
* Texas Dept. of Health
* Texas Dept. of Human Services
* Texas Dept. of Protective & Regulatory Services
* Texas Dept. of Transportation
* Texas Dept. on Aging
* Texas Health and Human Services Commission
* Texas Healthcare Trustees
* Texas Natural Resources Conservation Commission
* Texas Railroad Commission
* Texas Rural Development Council
* Texas Woman's University
* Texas Workforce Commission
* USDA--APHIS
* West Central Texas Council of Governments

EXTERNAL COMMODITY GROUPS:

American Forest Council
American Milk Council

American Soybean Association
Associated Milk Producers Inc.
Cactus Feeders Association, Inc.
Livestock Marketing Association of Texas
Mohair Council of America
National Cotton Council
Plains Cotton Growers
Rio Grande Valley Sugar Growers. Inc.
Southeastern Poultry & Egg Association
Southern Nurserymen's Association, Inc.
Southwest Meat Association
Southwest Soybean Association
Texas Agri-Women
Texas Agricultural Aviation Association
Texas Agricultural Chemical Association
Texas Agricultural Cooperative Council
Texas Appaloosa Horse Club, Inc.
Texas Arabian Breeders' Association
Texas Association of Agriculture Consultants
Texas Beekeepers Association
Texas Cattle Feeders Association
Texas Chili Pepper Co-op
Texas Citrus Mutual
Texas Citrus & Vegetable Association
Texas Corn Growers
Texas Corn Producers Board
Texas Cotton Breeders Association
Texas Cotton Ginners Association
Texas Cotton Producers
Texas Cottonseed Crushers' Association
Texas Farm Bureau
Texas Forestry Association
Texas Grain & Feed Association
Texas Grain Sorghum Association
Texas Grain Sorghum Board
Texas Horsemen's Benevolent & Protective Association
Texas-Louisiana AgLime & Fertilizer Association
Texas Mid-Continent Oil & Gas Association
Texas Milk Producers
Texas Milk Quality Council
Texas Nature Conservancy
Texas-New Mexico Sugar Beet Growers Association, Inc.
Texas Nursery & Landscape Association
Texas Paint Horse Breeders' Association
Texas Peanut Producers Board
Texas Pecan Growers Association
Texas Pest Management Association
Texas Pork Producers Association
Texas Poultry Federation
Texas Quarter Horse Association
Texas R.I.C.E.
Texas Rice Council
Texas Rice Improvement Association
Texas Rice Producers Board
Texas Rice Research Foundation
Texas Rural Water Association
Texas Seed Trade Association
Texas Sheep & Goat Raisers Association
Texas Shrimp Association
Texas & Southwestern Cattle Raisers Association
Texas Soybean Association
Texas Soybean Board
Texas Sugarcane Producers Board
Texas Thoroughbred Breeders' Association
Texas Vegetable Association
Texas Vegetable Seed Improvement Association
Texas Wheat Producers Board
Trans-Pecos Cotton Association

INTERNAL GROUPS:

* Baylor College of Dentistry
* Prairie View A&M Cooperative Extension Program
* Prairie View A&M University
* Tarleton State University
* Texas A&M University (TAMU)
* TAMU-Commerce
* TAMU-Kingsville
* TAMU-Texarkana
* Texas Agricultural Experiment Station
* Texas Agricultural Extension Service
* Texas Engineering Extension Service
* Texas Forest Service
* Texas Veterinary Medical Diagnostic Lab
* Texas Wildlife Damage Management Service
* West Texas A&M University

A scientific peer review process is assured by TAES CRIS projects (Hatch and McIntire Stennis). This process assigns a CRIS project to all TAES principal investigators for spending federal and state funds. These projects have been consolidated as appropriate into 4 programs that address the 5 national goals established in the CSREES Agency Strategic Plans (as stated below in "Planned Programs"). Thus, they also are linked to the 5 national goals with the Research, Education, and Economics (REE) Mission area of the U.S. Department of Agriculture. Among other processes, these projects are the basis for authorizing payment for TAES portions of investigators' salary, portions of salaries or stipends for students supported in the research program, and spending for research activities in the unit. At least 3 peer scientists provide scientific peer review for each project plan, and two of these reviews must be from other universities. Copies of reviews accompany project plans when submitted to TAES Project Records.

Integrated and joint activities. These activities are jointly planned, funded, and interwoven between research and extension to solve problems. This includes the generation of knowledge and transfer of information and technology. Specific kinds of activities include joint appointments, participating in SERA-IEG's, participating in Southern Region Research Projects, .

Planned Programs:

Function	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
1862 Research	Program 1	Program 2	Program 2	Program 3	Program 4

Program 1: An agricultural system that is highly competitive in the global economy. This Program equates to the TAES Agency Strategic Plan (FY98-FY03) Goal A, i.e., Improve the competitiveness of Texas agricultural products.

Issue(s): Research inputs are needed to keep Texas producers of crops and livestock competitive. Today, with the increasingly worldwide integrated market for agriculture products, the competitive edge of producers is increasingly narrowing. Research investments in other regions continue to maintain or improve crop and livestock industry viability.

Performance Goal(s):

Objective A.1. Develop technological and research enhancements for animal systems.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy A.1.1. Conduct research on the biology, health, and management of livestock and animal systems.

Output Measures

Number of research projects.
Number of patents, disclosures, and licenses.
Number of refereed publications.

Objective A.2. Develop technological and research enhancements for plant systems.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy A.2.1. Conduct research on the biology, pests, and management of plant and crop system production.

Output Measures

Number of research projects.
Number of patents, disclosures, and licenses.
Number of refereed publications.

Key Program Component(s): Research project activities will focus on:
enhanced profitability of agricultural and forest production methods;
value-added technologies applied through processing and packaging; and
niche-market identification through economic and consumer studies.

Internal and External Linkages: Partnership will be continued with extension, federal labs, other universities, and the private sector, as appropriate to this performance goal. We will focus on shared responsibilities for the agreed research objectives of projects and we will use joint ventures with industry to facilitate technology transfer.

Target Audiences: We will be focusing on agricultural and forest product producers and processors with emphasis on small and medium sized enterprises. Special attention will be devoted to traditionally underserved sectors, such as rural poor. Care will be given to meet the needs of the geographically disadvantaged.

Program Duration: This program of approximately 233 projects will continue for the five year life of this plan. Time-frames for Program 1 are 10.9% short-term, 44.7% medium, and 44.4% long.

Allocated Resources: ($ x 1000) [SY=units])

Current (1998)	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004
Fed= 4,558 [147.3] Tx =21,423	Fed= 4,558 [147.3] Tx =21,637	Fed= 4,558 [147.3] Tx =21,854	Fed= 4,558 [147.3] Tx =22,072	Fed= 4,558 [147.3] Tx =22,293	Fed=4,558 [147.3] Tx =22,516

Program 2: A safe and secure food and fiber system, and a healthy, well-nourished population. This Program equates to the TAES Agency Strategic Plan (FY98-FY03) Goal C, i.e., Enhance nutrition, quality, safety and market efficiency while maintaining afford ability of agricultural products.

Issue(s): This goal deals with enhancing the quality and value characteristics of agricultural products from the consumers' viewpoint while improving the marketing and trade system through which these products flow. The first objective focuses on making agricultural products available to consumers in a safe, nutritious, and highly desirable form. The strategy is to apply research to achieving this objective

Performance Goals:

Objective C.l. Develop technology and research advancements to improve the quality and nutritional characteristics of foods.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy C.1.1. Conduct research on biological production, storage, and handling processes and consumer behavior relating to the safety, nutrition, and quality of products.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Objective. C.2. Develop technology and research advancements for improving marketing and trade systems and consumer awareness of agricultural products.

Outcome Measure. Number patents, disclosures, licenses, and publications.

Strategy C.2.1. Conduct research on efficient marketing, trade system, and consumer behavior relating to agricultural products.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Target Audiences: We will be focusing on the consumers of Texas and Texas produced agricultural products, with attention given to all citizens. When appropriate, special attention will be devoted to traditionally underserved sectors, such as rural and urban poor.

Program Duration: This program of approximately 23 projects will continue for the five year life of this plan. Time-frames for Program are 13% short-term, 39% medium, and 48% long.

Allocated Resources ($ x 1000; [SY=units]):

Current (1998)	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004
Fed= 70.6 [9.6] Tx = 1,197	Fed= 70.6 [9.6] Tx = 1,209	Fed= 70.6 [9.6] Tx = 1,221	Fed= 70.6 [9.6] Tx = 1,233	Fed= 70.6 [9.6] Tx = 1,246	Fed= 70.6 [9.6] Tx = 1,258

Program 3: Greater harmony between agriculture and the environment. This Program equates to the TAES Agency Strategic Plan (FY98-FY03) Goal B, i.e., "Enhance environmental quality and conserve natural resources."

Issue(s): Increased population growth in both urban and rural areas of Texas continues to place increased pressure on environmental and renewable natural resources. This is manifested in several areas of the state where water quality is threatened by soil erosion, chemicals, and other pollutants. In other cases, demand is outstripping historically high quality supplies of water, land, and other renewable natural resources. This problem is compounded by excessive chemical use, animal wastes, and other environmentally hazardous

activities. At risk are the quantity and quality of all natural resources upon which society depends for health and quality of life.

Performance Goal(s):

Objective B.1. Develop technology and research information for the conservation of the state's renewable resources.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy B.1.1. Conduct research to enhance the efficiency with which the state's water and other natural resources are used and managed to conserve resource stocks for future use.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Objective B.2. Develop technology and research information regarding reduced chemical usage and increased conservation practices.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy B.2.1. Conduct research to protect and enhance water, air, and soil quality and biodiversity.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Key Program Component(s): Research projects will focus on:

New, alternative technologies for managing animal wastes;

Development of options for harvesting methods that are environmentally sound and sustainable; and

Improved pest, disease, and soil nutrient management systems.

Internal and External Linkages: Partnership will be continued with extension, federal labs, other universities, and the private sector, as appropriate to this performance goal. We will focus on shared responsibilities for the agreed research objectives of projects, and we will use joint ventures with industry to facilitate technology transfer, when appropriate.

Target Audiences: We will be focusing on the most serious environmental problems of Texas, as determined through local listening sessions, surveys, and through the Texas Agricultural Summit Initiatives and the Texas Community Futures Forum. As a consequence, selected environmental sectors will receive our attention, but the intention is to have the greatest impact possible, with our limited resources. Indirect benefits will accrue to all citizens of Texas by an improved environment and sustained development of Texas' natural resources.

Program Duration: This program of approximately 101 projects will continue for the five year life of this plan. Time-frames for Program 3 are 9.76% short-term, 46.22% medium, and 44.02% long.

Allocated Resources ($ x 1000; [SY=units]):

Current (1998)	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004
Fed= 1,103 [51.15] Tx = 6,319	Fed= 1,103 [51.15] Tx = 6,382	Fed= 1,103 51.15] Tx = 6,446	Fed= 1,103 [51.15] Tx = 6,510	Fed= 1,103 [51.15] Tx = 6,576	Fed= 1,103 [51.15] Tx = 6,641

Program 4: Enhanced economic opportunity and quality of life for Americans. This Program equates to the TAES Agency Strategic Plan (FY98-FY03) Goal D, i.e., Increase value-added from processing of Texas agricultural products and enhance the socioeconomic development of communities and the economy of Texas.

Issue(s): This goal focuses on enhancing growth and development through increased value-added activities processing, and new product identification and through enhancing social, economic, and related characteristics of Texas= communities.

The first objective focuses on modifying or converting raw agricultural products available to consumers, or to be further used in agricultural or non-farm production. Value added is a concept generally applied to manufacturing. It is simply the value of the final product (i.e., "value of shipments") adjusted for the value of raw materials used or modified in the manufacturing process. The strategy is to conduct research to improve existing techniques and develop new technologies for converting raw products into higher valued products. The second objective emphasizes the various aspects of socioeconomic development and enhancement of Texas communities.

Performance Goal(s):

Objective D.l. Develop technological and research advancements of added value of agricultural products.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy D.1.1. Conduct research into value-added enhancing techniques to facilitate the efficient conversion of plant and animal materials, residuals, byproducts, and wastes into higher valued products.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Objective D.2. Develop technological and research enhancements that enhance the income, employment, service, and organizational base of Texas communities.

Outcome Measure. Number of patents, disclosures, licenses, and publications.

Strategy D.2.1. Conduct research on economic, demographic, and social factors impacting socioeconomic resources, services, and organizations in Texas.

Output Measures

Number of research projects.

Number of patents, disclosures, and licenses.

Number of refereed publications.

Key Program Component(s): Research projects will focus on:
Supplemental income strategies, especially for low income families;
Better methods for characterizing employee skills and employer needs; and
Improved methods to measure and assess the quality of life in Texas.

Internal and External Linkages: Partnership will be continued with extension, federal labs, other universities, and the private sector, as appropriate to this performance goal. We will focus on shared responsibilities for the agreed research objectives of individual projects.

Target Audiences: We will be focusing on the most economically disadvantaged citizens of our State. Particular attention will be given to the traditional underserved populations in our rural communities.

Program Duration: This program of approximately 27 projects will continue for the five year life of this plan. Time-frames for Program 4 are 6.4% short-term, 67% medium, and 26.6% long.

Allocated Resources ($ x 1000; [SY=units]):

Current (1998)	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004
Fed= 157 [9.27] Tx = 849	Fed= 157 [9.27] Tx = 857	Fed= 157 [9.27] Tx = 866	Fed= 157 [9.27] Tx = 875	Fed= 157 [9.27] Tx = 883	Fed= 157 [9.27] Tx = 892

Projected Total Resources (all sources) ($ X 1000; [SYS = units]):

Program	Current	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004	Total
1	25,981 147.3	26,195	26,412	26,630	26,851	27,074	159,143
2	1,268 9.61	1,280	1,292	1,304	1,316	1,329	7,789
3	7,422	7,485	7,549	7,613	7,679	7,744	45,492
4	1,066 9.27	1,014	1,023	1,032	1,040	1,049	6,164
Total	35,677	35,974	36,276	36,579	36,886	37,196	218,588

Projected Federal Outlays ($ X 1000)

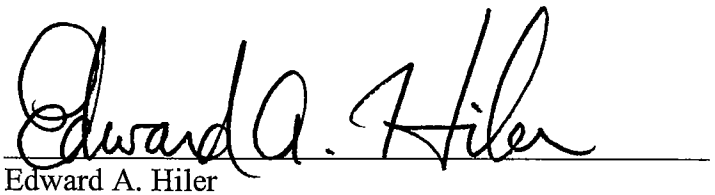
Program	Current	FFY 2000	FFY 2001	FFY 2002	FFY 2003	FFY 2004	Total
1	4,558	4,558	4,558	4,558	4,558	4,558	27,348

2	70.6	70.6	70.6	70.6	70.6	70.6	423.6
3	1,103	1,103	1,103	1,103	1,103	1,103	6,618
4	157	157	157	157	157	157	942
Total	5,888.6	5,888.6	5,888.6	5,888.6	5,888.6	5,888.6	35,331.6

Equal Employment Opportunity Reporting: (see Adoption by Reference section)

The Texas Agricultural Experiment Station complies with applicable federal and state regulations with respect to equal employment opportunity for applicants and employees in the areas of employment, promotion, training, compensation, and all other job related activities. Also, it has an Affirmative Action Plan in accordance with Executive Order 11246, Revised Order No. 4 and provides workforce composition reports on request from federal and state organizations. Additionally, it has an affirmative procurement program with respect to historically underutilized businesses. Annually, the CEO publishes a memorandum to all employees with regard to the Station's position on maintaining a diversified workforce free of discrimination on the basis of race, national origin, gender, religion, age, disability, or veteran's status.

Certification:



July 16, 1999

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Date

Appendix:

A. Southern Region Plan of Work

Southern Association of Agricultural Experiment Station Directors

SOUTHERN EXTENSION/ RESEARCH ACTIVITIES (SERAs)

To check the progress on modification of terminating activities, see Status.

ACTIVITY # (link to objectives) [Assignment to REE Goal1]	PROJECT TITLE	DATE BEGUN	REVIEW DATE	ADMIN. ADVISOR ES - Exp. Station EX - Extension (To contact the AES AA, see Directory.)
SERA Information Exchange Groups				
SERA-IEG-1 [Goal 1]	Southern Region Pesticide Impact Assessment Program (IEG-27)	1991	2004	ES - R.L. Jones, FL EX - C.M. French, AR
SERA-IEG-2 [Goal 2]	Food Safety	1991	1999	ES - J. M. Johnson, VA EX - M.J. Mixon, MS
SERA-IEG-3 [Goal 4]	Integrated Pest Management	1991	2004	ES - D.H. Teem, AL EX - B.E.Caldwell, NC
SERA-IEG-4 [Goal 1]	Mechanization and Post Harvest Technology of Fruits and Vegetables (IEG-64)	1991	2004	ES - C. Schoulties, SC EX - S. Cotner, TX
SERA-IEG-5 [Goal 1]	Sweet Potato Collaborators Conference (IEG-14)	1991	2003	ES - W.H. Brown, LA EX - C. G. Depew, LA
SERA-IEG-6 [Goal 4]	Nutrient Analysis of Soils, Plants, Water, and Waste Materials (IEG-18)	1991	2003	ES - M.S. Smith, KY EX - C.W. Jordan, GA

SERA-IEG-7 [Goal 1]	Biology and Management of Peanut Insects and Other Arthropods(IEG-23)	1991	2003	ES - P.R. Utley, GA EX - W. Lambert, GA
SERA-IEG-8 [Goal 1]	Fescue Endophyte Research and Extension (IEG-37)	1991	2003	ES - G.J. Weidemann, AR EX - M.D. Ouart, MS
SERA-IEG-9 [Goal 1]	Aquatic Food Animals from Warm Water Aquaculture (IEG-41)	1992	2003	ES - D.H. Teem, AL EX - T. Grove, NC
SERA-IEG-10 [Goal 5]	Housing in the Rural South (IEG-58)	1991	2004	ES - H.A. Shaw, NC EX - B.G. Hicks, TN
SERA-IEG-11 [Goal 1]	Review and Coordination of Oilseed Rape Research Programs in the Southern Region (IEG-55)	1992	2002	ES - A.E. Smith, GA EX - C. Schoulties, SC
SERA-IEG-12 [Goal 1]	Southern Forest Insect Worker Conference	1992	2002	ES - G.L. Jubb, VA EX - S. Jones, AL
SERA-IEG-14 [Goal 1]	Development and Evaluation of Bunch and Muscadine Grapes for Fresh Market, Juice, Wine and Other Products (IEG-52)	1993	2003	ES - W.A. Dozier, AL EX - J. Morris, AR
SERA-IEG-15 [Goal 1]	Competitiveness and Sustainability of the Southern Dairy Industry (S-217)	1993	2003	ES - T.R. Scott, SC EX - K. Esbenshade, NC
SERA-IEG-16 [Goal 5]	Rural Infrastructure as a Cause and Consequence of Rural Economic Development and Quality of Life (IEG-53)	1993	2003	ES - L.J. Beaulieu, SRDC EX - L. Myers, VA
SERA-IEG-17 [Goal 4]	Minimizing Agricultural Phosphorus Run-off Losses for Protection of the Water Resource	1993	2003	ES - C.A. Jones, TX EX - M.D. Ouart, MS
SERA-IEG-18 [Goal 1]	Rice Technical Workers Group (IEG-6/S-223)	1993	2003	ES - W.H. Brown, LA EX - M. French, AR
	The Changing Rural Health			ES - H.A. Shaw,

SERA-IEG-19 [Goal 3]	System: Education for Consumers and Providers (SERA-TF-5)	1993	2003	NC EX - R. Maurer, KY
SERA-IEG-20 [Goal 1]	Southern Conservation Tillage Conference for Sustainable Agriculture	1994	2004	ES - G.J. Weidemann, AR EX - B. Harris, TX
SERA-IEG-21 [Goal 1]	Use of Forage-Animal Models in Resource Management	1994	1999	ES - C.O. Little, KY EX - J.F. Ort, NC
SERA-IEG-23 [Goal 1]	Cotton Insects (SERA-IEG-13)	1994	2004	ES - J.D. Harper, NC EX - R.E. Frisbie, TX
SERA-IEG-24 [Goal 4]	Composting and Compost Utilization in Land Management Systems (DC 94-06)	1995	2000	ES - L. Verma, LA EX - D. Beasley, NC
SERA-IEG-25 [Goal 1]	Turf (IEG-16)	1996	2001	ES - J.C. Wynne, NC EX - B.E. Caldwell, NC
SERA-IEG-26 [Goal 3]	Fire Ants (IEG-34)	1996	2001	ES - R.E. Frisbie, TX EX - J.L. Bagent, LA
SERA-IEG-27 [Goal 1]	Nursery Crop and Landscape Systems (IEG-63)	1997	2002	ES - D.L. Ingram, KY EX - W.J. Walla, KY
SERA-IEG-28 [Unclassified]	Image Enhancement (SERA-TF-10)	1998	2003	ES - R.L. Rogers, LA EX - C.C. Jones, VA
SERA-IEG-29 [Goal 3]	Black Fly Biology, Economic Problems, and Management	1998	2003	ES - C.L. Schoulties, SC EX - T. Mack, VA
SERA-IEG-30 [Goal 4,5]	Southern Natural Resource Economics Committee (IEG-10)	1999	2004	ES - L. Johnson, AL EX - tba
SERA-IEG-31 [Goal 4,5]	Economics and Management of Risk in Agriculture and Natural Resources (IEG-70)	1999	2004	ES - M. Salassi, LA EX - tba

SERA Task Forces

SERA-TF-11 [Goal 2]	Utilization of University-Based Food Processing Centers	1997	2000	ES - D.C. Coston, OK EX - R.A. Brown, MS

Research, Education, and Economics (REE) Goals:

1. An agricultural system that is highly competitive in the global economy.
2. A safe and secure food and fiber system.
3. A healthy, well-nourished population.
4. Greater harmony between agriculture and the environment.
5. Enhanced economic opportunity and quality of life for Americans.

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SOUTHERN PARTICIPATION IN NORTHEAST RRF SUPPORTED PROJECTS

ACT. #	PROJECT TITLE	DATE BEGUN	EXPIR. DATE	CURRENT ADMIN. ADVISOR	SOUTHERN COOPERATORS
NE-060	Genetic Basis for Resistance to Avian Diseases	7/68	9/98	K.M. Kerr, CTS	NC
NE-103	Postharvest Physiology of Fruits	10/76	9/98	R.C. Seem, NYG	GA, NC
NE-112	Mastitis Resistance to Enhance Dairy Food Safety	~	9/02	K.M. Kerr, (CTS)	KY, LA, TN, VA
NE-123	Functional Properties of Food Proteins	4/78	9/98	J.A. Stewart, NH	KY, MS, NC
NE-124	Genetic Manipulation of Sweet Corn Quality and Stress Resistance	10/78	9/99	W.R. Coffman, NYC	FL
NE-127	Biophysical Models for Poultry Production Systems	10/78	9/99	W.W. Saylor, DE	AR, TX
NE-132	Environmental and Economic Impacts of Nutrient Flows in Dairy Forage Systems	~	9/99	(pending)	TN
NE-138	Interactions Between IBDV, IBV, and E. Coli in a Respiratory Disease Complex in Chickens	~	9/01	W. W. Saylor, DE	AL, TX
NE-140	Biological Improvement of Chestnut and Management of the Chestnut Blight Fungus	10/81	9/98	J.F. Anderson, CT-NH	GA, KY, TN, TX, VA
NE-144	Forage Crop Genetics and Breeding to Improve Yield and Quality	~	9/02	C.R. Krueger, PA	KY
NE-148	Regulation of Nutrient Use in Food Producing Animals	10/83	9/00	W.W. Saylor, DE	NC

NE-162	Rural Economic Development: Alternatives in the New Competitive Environment	~	9/02	D. Rossi, NJ	GA, KY, NC, NC, SC, TX, VA
NE-164	Controlled Environment and Facilities Engineering for Greenhouses	~	09/98	T.A. Fretz, MD	GA
NE-165	Private Strategies, Public Policies, and Food System Performance	~	9/01	D. Rossi, NJ	AR, FL, GA, LA, NC, TX, VA
NE-169	Integrated Turfgrass Management for Environmental Enhancement and Resource Conservation	10/87	9/98	R. Coffman, NY-C	VA
NE-171	Biological and Cultural Management of Plant-Parasitic Nematodes	~	9/99	L.A. Magnarelli, CTH	FL
NE-176	Characterization and Mechanisms of Plant Responses to Ozone in the Northeastern U.S.	10/90	9/00	P. Logan, RI	AL, TX, VA
NE-177	Organizational and Structural Changes in the Dairy Industry	12/90	9/01	A.M. Shelton, NYC	KY, TX
NE-179	Technology and Principles for Assessing and Retaining Postharvest Quality of Fruits and Vegetables	~	9/02	M. Mount, MA	AR, GA, NC
NE-183	Multidisciplinary Evaluation of New Apple Cultivars	~	9/99	R.C. Seem, NYG	AR, GA, NC, VA
NE-184	Development of New Potato Clones for Environmental and Ecological Sustainability in the Northeast	~	9/02	(pending)	NC, VA
NE-185	Commodities, Consumers, and Communities: Local Food Systems in a Globalizing Environment	~	9/02	(pending)	LA, NC, PR, TX

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SOUTHERN PARTICIPATION IN NORTH CENTRAL RRF SUPPORTED PROJECTS

ACT. #	PROJECT TITLE	DATE BEGUN	EXPIR. DATE	CURRENT ADMIN. ADVISOR	SOUTHERN COOPERATORS
NC-007	Plant Germplasm and Information Management and Utilization	10/56	9/01	D.G. Topel, IA	MS
NC-107	Bovine Respiratory Diseases: Risk Factors, Pathogens, Diagnosis, and Management	09/71	9/01	F.A. Cholick, SC	LA, NC, OK, TN, TX
NC-119	Management Systems for Improved Decision Making and Profitability of Dairy Herds	7/72	9/02	P.O. Larsen, MN	GA, TN, VA
NC-129	*Fusarium* Mycotoxins in Cereal Grains	1/75	9/00	B.R. Durgan, MN	GA
NC-131	Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation	7/75	9/00	C.G. Scanes, IA	AL
NC-136	Improvement of Thermal Processes for Foods	7/75	9/00	J.I. Gray, MI	FL, NC, TX
NC-140	Rootstock and Interstem Effects on Pome- and Stone-Fruit Trees	10/77	9/02	J.I. Gray, MI	AR, GA, KY, NC, SC, TN, VA
NC-142	Regulation of Photosynthetic Processes	10/77	9/02	P.O. Larsen, MN	FL
NC-167	Role of n-3/n-6 Polyunsaturated Fatty Acids in Health Maintenance	10/82	9/02	J.I. Gray, MI	LA, TX
NC-168	Advanced Technologies for the Genetic Improvement of Poultry	10/82	9/02	(pending)	NC

NC-170	Occupational Safety and Health Through the Use of Protective Clothing	10/82	9/02	J.K. Laughlin, NE	GA, OK
NC-185	Metabolic Relationships in Supply of Nutrients for Lactating Cows	10/87	9/02	M.F. Brugger, OH	KY
NC-189	Foraage Protein Characterization and Utilization for Beef Cattle	10/88	9/98	S.S. Waller, NE	OK
NC-191	Farm Information Systems	12/88	9/98	M.A. Johnson, KS	GA, NC, OK
NC-193	Spatial Dynamics of Leafhopper Pests and Their Management of Alfalfa	10/88	9/98	L.R. Nault, OH	KY, OK
NC-197	Research in Support of a National Eradication Program for Pseudorabies	10/89	9/99	G.M. Buening, MO	NC
NC-205	Ecology and Management of European Corn Borer and Other Stalk-Boring Lepidoptera	12/90	9/00	E.E. Ortman, IN	KY, NC, SC, TX
NC-208	Impact Analyses and Decision Strategies for Agricultural Research	10/91	9/01	M.V. Martin, MN	AL, FL, GA, LA, TX, VA
NC-209	Genetic Improvement of Dairy Cattle Using Molecular Genetic Information	9/92	9/02	(pending)	NC
NC-212	Ecology and Impact of Gypsy Moth Invasion	05/93	9/98	A.D. Sullivan, MN	AR
NC-213	Marketing and Delivery of Quality Cereals and Oilseeds	~	9/98	T.L. Payne, OH	AR, TX
NC-214	Economic and Environmental Implications of Expiring Conservation Contracts	03/94	9/98	F.A. Cholick, SD	OK, TN, TX
NC-215	Overwinter Survival of *Heterodera, Pratylenchus*, and Associated Nematodes in the North Central Region	10/94	9/99	R.L. Todd, ND	AR
NC-217	The Role of Housing in Rural Community Vitality	10/94	9/99	K. E. Craig, NE	LA

NC-220	Integration of Quantitative and Molecular Technologies for Genetic Improvement of Pigs	10/96	9/01	D.G. Topel, IA	AL, GA, NC, OK, VA

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SOUTHERN PARTICIPATION IN WESTERN RRF SUPPORTED PROJECTS

ACT. #	PROJECT TITLE	DATE BEGUN	EXPIR. DATE	CURRENT ADMIN. ADVISOR	SOUTHERN COOPERATORS
W-045	Environmental Transformation, Exposure, and Effects of Pesticide Residue	~	9/00	R.S. Pardini, NV	FL
W-082	Pesticide and Other Toxic Organics in Soil and Their Potential for Ground and Surface Water Contamination	7/64	9/00	R.D. Heil (ED)	AR, FL
W-102	Integrated Methods of Parasite Control for Improved Livestock Production	7/68	9/99	R.G. Sasser, ID	FL, LA
W-112	Reproductive Performance in Domestic Ruminants	7/73	9/01	C.C. Kaltenbach, AZ	TX
W-128	Micro-Irrigation: Management Practices to Sustain Water Quality and Agricultural Productivity	10/89	9/99	V.V. Volk, OR	TX
W-130	Freeze Damage and Protection of Fruit and Nut Crops	7/73	9/98	M.H. Jensen, AZ	GA, FL, LA, MS, VA
W-133	Benefits and Costs of Resource Policies Affecting Public and Private Land	~	9/02	H.J. Vaux, CA	GA, TN
W-150	Genetic Improvement of Beans for Yield, Pest Resistance and Food Value	10/77	9/00	H.P. Rasmussen, UT	AR, FL, PR, VA
W-168	Seed Biology and Technology Investigations	10/88	9/98	R. Heimsch, ID	KY, LA, NC, VA

W-170	Chemistry and Bioavailability of Waste Constituents in Soils	10/84	9/99	L.E. Sommers, CO	FL
W-171	Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock	10/89	9/99	L.J. Koong, OR	AR, LA
W-173	Stress Factors of Farm Animals and Their Effects on Performance	10/85	9/01	C.C. Kaltenbach, AZ	LA, MS, TX
W-180	Identification, Behavioral Ecology, Genetics, and Management of African Honeybees	10/88	9/99	E.H. Erickson, AZ	FL, GA, LA, TX, VA
W-181	Modifying Milk Fat Composition for Improved Manufacturing Qualities and Consumer Acceptability	12/94	9/99	R.S. Pardini, NV	SC, VA
W-186	Genetic Variability in the Cyst and Root-Knot Nematodes	10/93	9/98	C.W. Laughlin, CO	AR, GA, NC
W-187	Interactions Among Bark Beetles, Pathogens, and Conifers in North American Forests	10/93	9/98	G.L. Cunningham, NM	FL, GA, LA, MS
W-189	Natural Products Chemistry as a Resource for Biorational Methods of Insect Control	10/94	9/99	R.S. Pardini, NV	AR, FL, TX
W-190	Water Conservation, Competition and Quality in Western Irrigated Agriculture	10/94	9/99	G.L. Cunningham, NM	OK, TX

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