

Texas Cooperative Extension

FY 2001 Annual Report of Accomplishments and Results

A. PLANNED PROGRAMS

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

Overview

Texas Cooperative Extension (formerly the Texas Agricultural Extension Service) programs under Goal 1 focus on increasing the competitiveness and profitability of the agricultural industry in the state, nation, and world. Three programs representing a broad range sector of the agricultural community are represented by this goal. These programs include risk management, field and forage crop production, and, livestock quality and production.

Risk Management

Risk is inherent in the food and fiber system. For the Texas food and fiber system to become more competitive, profitable, and sustainable—in light of recent droughts and low commodity prices—farmers, ranchers, and organizations and communities that are dependent on agriculture must be better able to weigh the risks and projected impacts of alternative decisions on their operations. In response to this need, Texas Cooperative Extension has developed a multi-faceted program in risk assessment and in-depth management/marketing education. In surveys of participants conducted two years after they completed the 1997-98 Master Marketer workshops, 143 producers estimated, on average, that their annual incomes had improved by \$23,900 as a result of adopted marketing and risk management practices. If the 90 producers that participated in the two workshops received similar results, then the aggregate annual impact of this part of the program would approach \$2.15 million in added income! Since all of the Master Marketer graduates surveyed to-date have self-reported an average annual income improvement of over \$20,000, the projected gain in income for all twelve classes would be *over \$12 million per year.*

Field and Forage Production

Environmental stresses, crop pests and global market forces make profitable and sustainable production of crops and forages a continuing challenge. It is through understanding and adoption of technologies that improve productivity, profitability and global competitiveness of crop and forage production systems that Texas farmers and ranchers will enhance their competitive position to other producers around the world. The target audience includes farmers and ranchers who produce field crops and forage in Texas.

The investigations and educational programs associated with Sorghum PROFIT have had many fold impacts. In south Texas, reduced tillage systems netted \$18- to \$30 per acre more profit than conventionally used systems. Systemic insecticidal seed treatments improved crop returns from \$2 to \$24 per acre. IPM programs which encourage field scouting and pest management based upon scientifically established thresholds of insect, weed and disease pests are widely adopted in Texas.

Comments from four case studies representing 9 counties are included in the section on Field and Forage Production.

Livestock Quality and Production

Texas ranks first in the nation in total livestock value and also has the broadest spectrum producers and variation in production environments. High production costs and variable sale receipts for all livestock species necessitates adoption of best management practices to efficiently produce livestock and their resulting end-products that are cost-competitive with consumer alternatives while meeting the food quality and safety standards expected by our society. Education programs will focus on livestock genetics, best management practices and how producers can increase production efficiency while still producing high quality end products. Management practices such as selection, nutrition, reproductive physiology, livestock health, and meat science will be emphasized. Other factors that influence product acceptability in the market such as marketing methods and food safety will be stressed.

One thousand seven hundred forty-five producers from 10 states have participated in the Texas A&M Ranch to Rail program to learn more about how their calf crop fits the needs of the beef industry and what creates value in beef marketing. They learned that they could increase their net return per head by \$82 through retained ownership and health management could reduce production costs by over \$90 per head. In 2000, 229 beef industry leaders participated in Beef 706 to learn more about what creates value in beef carcasses and ways they can change management practices and genetics to enhance carcass value. Seventy-four percent (74%) indicated they would make different business decisions in their ranching operation as a result of participating in this educational program.

Programs in the areas under Goal 1 continue to provide Texas producers with research-based information in order for them to make sound decision on the implementation of best management practices and adoption of technologies. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy.

The data presented in this summary and the following section represents the efforts of Year 02 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texas producers with opportunities for increased profitability and competitiveness. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Source of Funding and FTEs

Source of Funding: Smith Lever and State Matching

	\$ X 1000
	Actual
	<u>FY 2001</u>
Program	
Program 1 – Risk Management	1,583
FTEs	28.61

Program 2 – Field Crops & Forage Production		2,439
	FTEs	138.42
Program 3 – Livestock Quality & Profitability		3,108
	FTEs	176.18
Allocated Resources Goal 1		7,332
	FTEs	345.14

State POW Programs

State Plan of Work Program 1: Risk Management

Key Theme: Risk Management, Agricultural Competitiveness, and Agricultural Profitability

A. Description of Activity

Risk is inherent in the food and fiber system. For the Texas food and fiber system to become more competitive, profitable, and sustainable—in light of recent droughts and low commodity prices—farmers, ranchers, and organizations and communities that are dependent on agriculture must be better able to weigh the risks and projected impacts of alternative decisions on their operations. Managing the increased price and income risk will be key to the future economic success of production agriculture and agribusiness firms in Texas. As economic stress intensifies, risk management—knowing what to do and what not to do—becomes even more important to the long term goal of a profitable and competitive agriculture.

In response to this need, Texas Cooperative Extension has developed a multi-faceted program in risk assessment and in-depth management/marketing education. In the past, management and marketing changes were evaluated based on average results. But, in Texas, averages do not tell the story—the upside and downside swings also must be evaluated for long-term survivability. Educational programs were focused on 1) intensive education in group settings; 2) use of master volunteers to expand efforts; and 3) one-to-one assistance in financial and risk management: 1) In addition to numerous one-day events on risk management topics, two groups attended 64-hour classes as part of the *Master Marketer* workshop program. These 90 individuals greatly enhanced their risk management knowledge and skills. 2) These Master Marketer graduates then become marketing club leaders in their respective counties thereby teaching others about risk management tools. Over 70 marketing clubs statewide have been organized through Master Marketer volunteers and county Extension agents over the past few years. 3) One-to-one producer assistance using district based risk management specialists was facilitated through the *FARM Assistance* decision support system recently developed. Individual agricultural operations statewide, using information specific to their business, can now effectively assess the riskiness of proposed changes and the projected impact of those changes on their net worth 10 years down the road. Producers completing a FARM Assistance analysis agree to have their

information put into a confidential database for the development of educational programs to serve additional producers, some from underserved populations.

The program emphasis in risk management is targeted towards owners and operators of commercial size farms and ranches in Texas. Some of these commercial operations are geographically disadvantaged in that they are located in isolated areas of the state. Marketing clubs and the delivery of education based on the FARM Assistance database will reach underserved populations in later years of the program, such as along the border with Mexico.

Texas Cooperative Extension is collaborating with other CSREES partners, including Kansas State University, Oklahoma State University, Louisiana State University, University of Arkansas, Mississippi State University, the University of Tennessee, Montana State University, and the University of Minnesota. External collaborators include the Texas Farm Bureau, the Texas Corn Producers Board, the Texas Wheat Producers Board, Texas Cotton State Support Committee, and the Houston Livestock Show and Rodeo Foundation.

B. Impact of Programs

Master Marketer Program: One result of the in-depth Master Marketer Workshops is a few highly trained producers on the subject of risk management. In surveys of participants conducted two years after they completed the 1997-98 Master Marketer workshops, 143 producers estimated, on average, that their annual incomes had improved by \$23,900 as a result of adopted marketing and risk management practices. If the 90 producers that participated in the two workshops received similar results, then the aggregate annual impact of this part of the program would approach \$2.15 million in added income! Since all of the Master Marketer graduates surveyed to-date have self reported an average annual income improvement of over \$20,000, the projected gain in income for all twelve classes would be *over \$12 million per year.*

The training appeared to have a major impact on the participants' risk management practices. For example, prior to the in-depth training, 42 percent of the 143 producer-graduates from the 1997-98 workshops said they had marketing plans. Two years later, 91 percent said they had developed marketing plans. Prior to the workshops, 53 percent said they used breakeven costs in marketing decisions. Two years later, 89 percent indicated they incorporated breakeven price information into their plans. Similar improvements were reported for other variables.

Master Marketer graduates agree to share what they have learned with others in their respective counties through small marketing club study groups. This volunteer aspect greatly multiplies the educational impact of the program. Over seventy marketing clubs have been started—helping to extend risk management education to producers across the state. Average membership of marketing clubs has been about 14 producers.

A Risk Management Curriculum Guide has been expanded to provide information to those who cannot attend the in-depth sessions or marketing clubs. These curriculum topics also provide valuable support

to marketing club leaders. These publications are available through the National Ag Risk Library, the Texas Extension risk management web site or can be obtained in printed form from local county Extension agents. Underserved audiences could access these excellent materials either way. Of the top 20 requested publications from the National Ag Risk Library, five were part of the Texas Risk Management Curriculum Guide.

The Master Marketer Program Development Team, an integral part of the Statewide Initiative on Risk Management Education, received a USDA Honor Award for Distinguished Service in June 2000. The Team also was successful in national competition for funding to expand the program concept to other states—Montana and Minnesota.

FARM Assistance: Financial and Risk Management (FARM) Assistance is a unique combination of risk management specialists working one-to-one with producers—backed up by a powerful computerized decision support system that allows risk assessment of differing strategic alternatives for the farm or ranch. As farming operations are becoming more diverse and complex, individual analysis of risk and financial factors, using research based tools, are needed. Over 600 alternative risk management scenarios have been analyzed for individual producers since 1999—representing slightly over a million acres of crop and pasture land.

One measure of the FARM Assistance program's impact is the projected net worth consequences of alternative scenarios analyzed for each subscriber. This measure indicates the gain or loss in net worth a producer could see, at the end of the 10-year planning horizon, from a decision between two alternatives under consideration. Just looking at the difference between the base situation and one alternative scenario implies that producers going through the program, on average, could expect a \$29,000 per year positive difference in net worth compared to selecting the worst case alternative under consideration. For the 10-year planning horizon, that's almost \$300,000 per participant! Seventy three percent of the FARM Assistance subscribers responding to a survey indicated that their participation in the program allowed them to make a change that will likely have a positive financial impact on their operation. Eighteen percent said the analysis helped them avoid making a decision that likely would have had a negative risk impact.

Two case examples of the program impact are provided here to show the potential: 1) A Midland area producer found that, by adopting drip irrigation technology, he could increase annual income more than \$200 per acre while using scarce water more efficiently. 2) Using the information in his FARM Assistance analysis, a Perryton area producer decided to purchase stocker cattle rather than lease his land—resulting in \$15,000 more income.

In addition to the advantage that individual producers receive for participating in this significant effort, many other producers and associated agribusiness firms also will benefit from the database that is being developed from accumulating the individual analyses. This secondary impact of the program will be used to further target educational programs. Underserved audiences should be able to glean risk

management ideas from database summaries. Publications are planned on best risk management practices, success rates under alternative debt scenarios, and policy impacts on types of operations.

Output Indicators:

No. of people completing non-formal risk management education programs – 2,710

Outcome Indicators:

The total number of people completing non-formal risk management education programs who plan to adopt one or more risk management tools or strategies after completing these programs – 1,669

The total number of people completing non-formal risk management education programs who actually adopt one or more risk management tools or strategies after completing these programs – 1,088

C. Source of Federal Funds

Smith-Lever and State Matching

D. Scope of Impact

Multi-State Extension – KS, OK, AR, LA, MS, TN, MT, MN

Integrated Research and Extension

The development and implementation of the comprehensive *FARM Assistance* computerized decision support system and the resulting accumulated database of economic and financial information is an integrated Research/Extension effort. Faculty of the Texas Agricultural Experiment Station were instrumental in developing the software platform on which the decision support system would be programmed and have been advisors to its enhancements by Extension faculty over the past three years. The structure of the database and initial uses for analytical purposes have been proposed by research faculty to facilitate a viable product. Of course, the actual delivery of the decision support system is accomplished through the network of Extension risk management specialists hired as part of the State Initiative on Risk Management funded through Extension.

State Plan of Work Program 2: Field and Forage Crop Production

Key Theme: Agricultural Competitiveness, Agricultural Profitability

A. Description of Activity

Environmental stresses, crop pests and global market forces make profitable and sustainable production of crops and forages a continuing challenge. It is through understanding and adoption of technologies that improve productivity, profitability and global competitiveness of crop and forage production systems that Texas farmers and ranchers will enhance their competitive position to other producers around the world. The target audience includes farmers and ranchers who produce field crops and forage in Texas.

B. Impact of Programs

The investigations and educational programs associated with Sorghum PROFIT have had many fold impacts. In south Texas, reduced tillage systems netted \$18- to \$30 per acre more profit than conventionally used systems. Systemic insecticidal seed treatments improved crop returns from \$2 to \$24 per acre. Reducing row intervals from wide (30- to 40 inch) to narrow (15- to 20 inches) increased yield an average of 6.7%. Proper use of foliar micronutrients netted yield increases of 11.2%. Selection of hybrids with resistance to iron chlorosis increase profits \$7 to \$21 per acre. In the High Plains a region faced with declining water supplies, corn silage was found to use 25% more water than sorghum silage, which is currently not in use in High Plains feedlots, but produces equivalent yields of equal quality forage. Feeding trials are underway to demonstrate the value of sorghum silage. Incorporation of the above practices into Texas production systems is underway and is driven by Extension educational programs.

IPM programs which encourage field scouting and pest management based upon scientifically established thresholds of insect, weed and disease pests are widely adopted in Texas. In four survey areas in Texas (Ellis-Navarro, Hockley-Cochran, Hill-McLennan and Wharton-Matagorda-Jackson counties), IPM programs are heavily relied upon by large agricultural producers to reduce cost of production, reduce pesticide applications and increase profits in the production of field crops. Comments from four case studies representing 9 counties are included below.

Ellis-Navarro counties: In a study of IPM participants in these North Texas counties, 94 per cent of participants reduced pesticide use. The average reduction of pesticide use by these cotton farmers was 29 per cent, with an average per acre savings of \$13.88 per acre. These two counties produced slightly more than 52,000 acres of cotton in 2000, indicating that if IPM practices were used universally in these counties, savings in the cost of pest management would have amounted to \$722,000 and would have resulted in the use of several thousand pounds fewer pesticides in the environment.

Hockley-Cochran counties: Farmers in the western High Plains of Texas are in a very high production risk region due to drought and insect pests. When surveyed, 100 percent of these producers in the IPM program, and 95 per cent of the farmers receiving the *West Plains IPM Newsletter* said that IPM programs improved their ability to make pest control decisions.

Wharton-Matagorda-Jackson counties: Participants in the IPM program in this upper Gulf Coast region widely accepted IMP recommendations. Of those surveyed, 80 percent adopted at least 11 of 13 IPM recommended practices. Seventy one per cent used fewer pesticides, 79 percent reported harvesting higher yields, and 90 per cent reported higher profits using IPM recommended practices.

Hill-McLennan: County farmers produce wheat, cotton corn and sorghum. IPM participants reported that cotton scouted in the program was treated fewer times than cotton that was not scouted, and that yields of cotton in scouted fields averaged 434 pounds of lint per acre, while unscouted cotton averaged 24 percent less at 349 lbs/acre despite higher pest control costs.

While somewhat dependent upon crop species and location; herbicides are the most widely used class of pesticides. The judicious use of herbicides reduces the expense of crop production by reducing tillage and labor demands; enhances crop yield by minimizing competition with weed species, improves crop quality by reducing foreign matter and moisture in the crop at harvest and reduces spoilage in post harvest storage. The adoption of transgenic crops by Texas farmers has met with a very wide acceptance. Texas Extension faculty are to a large part responsible for disseminating information related to this change. In 1996, the first transgenic crops were commercially planted in the state. This amounted to less than 25,000 acres of soybeans, with no transgenic traits in cotton and corn. In 2000, it was estimated that 65% the state's 400,000 acre soybean acreage was transgenic, the 6 million acre cotton crop was 54% transgenic and 25% of the state's 2 million acre corn crop was transgenic. In soybeans, the only commercial genetically enhanced traits are for herbicide resistance. In cotton, some varieties are sold with herbicide resistance, others with the Bt gene for resistance for worms, and yet still other varieties have a "stacked gene" configuration where a variety has resistance to both herbicide and insects. The first transgenic corn hybrids were released with resistance to insects (the European corn borer), while in 2000, some hybrids incorporated herbicide resistance. To accomplish this large scale transition from traditional to genetically enhanced varieties and hybrids, Extension faculty initiated approximately 300 weed control trials in 2000, as well as large scale plots in the Texas High Plains to compare the value and production expense of transgenic technologies in cotton. Hundreds of educational events were conducted which discussed the new technologies, utility of the transgenic traits in aiding insect and weed control, and potential drawbacks regarding technology fees, marketing and impact on yield and quality.

The herbicide and insect resistance in these major field crops has significantly reduced crop production risk, allowing farmers to produce food, feed and fiber with less production expense, improved environmental quality by allowing farmers to use more environmentally benign herbicides as well as using thousands of tons less herbicides and insecticides, allowed the development of no-till and high residue conservation tillage crop production systems which reduce erosion, decrease consumption of fossil fuels, decrease production cost and improve wildlife habitat.

Educational programming and collaboration between and among several agencies have been used to increase soil testing and reduce the movement of nutrients off site in Texas between 1997 and 2000. These include:

- Soil test phosphorus (P) calibration testing to improve P recommendations in field crops and forages by Texas Extension and TAES. Similar calibration problems exist in other Southwestern states, and Texas Cooperative Extension has initiated a joint effort in arriving at better correlation between soil test P and crop response with Oklahoma State, Louisiana State and the Noble Foundation.
- County and regional meetings and workshops educated 5000 producers in 70 counties between 1997 and 2000 on soil testing issues.
- Soil Testing/Nutrient Management Campaigns in Gulf Coast counties by Texas Extension, LCRA, Sea Grant, NRCS, TNRCC and other agencies. Soil testing campaigns and questionnaires completed by 3000 producers representing 150,000 acres during the 1997-2000 years potentially reduced application of nitrogen and phosphorus by 1,400,000 and 2,700,000 pounds, respectively,

reducing potential fertilizer costs by \$840,000 and reducing potential offsite runoff on farms participating.

- Development of nutrient management planning certification program by Texas Extension and NRCS. A Nutrient planner certification program including curriculum and testing was planned and developed in 1999 and 2000. This course and exam will certify individuals affiliated with the government and private consultants to plan nutrient applications to farms to reduce off site runoff of nutrients to keep streams, rivers and lakes cleaner.
- A new method for evaluating soil N content is being tested in the major cropping regions of the state. This technique, when tested in field demonstrations has found large quantities of previously undetected, plant available N that will potentially cause a dramatic decrease in the cost of applied N to field crops and forages. Projects that are being addressed by Extension faculty in the area of cropping systems include: weed management, row spacing, plant population, benefits of seed treatments, benefits of crop rotation, irrigation management, evaluation of brown mid-rib forage sorghums for silage and in grazing systems, hybrid evaluations including the tan plant type, response to fertilizers and micronutrients and response to reduced tillage. Trials and educational programs are being conducted in the major production areas of the Rio Grande Valley, Coastal Bend, Central Texas, the South Plains and the North Plains. Almost 200 field days, tours and educational meetings have featured information generated by Sorghum PROFIT, a statewide cropping systems initiative in the last two years.

C. Source of Federal Funds

Smith-Lever and State Matching

D. Scope of Impact

Multi-State Extension – OK, KS, GA, MS, AR, TN, KT, NM

Integrated Research and Extension

State Plan of Work Program 3: Livestock Quality and Profitability

Key Theme: Agricultural Competitiveness, Agricultural Profitability

A. Description of Activity

Texas ranks first in the nation in total livestock value and also has the broadest spectrum producers and variation in production environments. High production costs and variable sale receipts for all livestock species necessitates adoption of best management practices to efficiently produce livestock and their

resulting end-products that are cost-competitive with consumer alternatives while meeting the food quality and safety standards expected by our society. Educational programs are needed to increase producer awareness of consumer concerns, advancements in production practices and developments in technologies to meet those needs while increasing net returns from livestock operations.

Education programs will focus on livestock genetics, best management practices and how producers can increase production efficiency while still producing high quality end products. Management practices such as selection, nutrition, reproductive physiology, livestock health, and meat science will be emphasized. Other factors that influence product acceptability in the market such as marketing methods and food safety will be stressed.

The target audience is composed of beef cattle, dairy, sheep, goat and swine producers, commodity group leadership, Extension educators and youth enrolled in 4-H and F.F.A. livestock projects.

Partnerships have been established with CSREES, Texas Agricultural Experiment Station, Texas A&M College of Veterinary Medicine, TAMU College of Agriculture and Life Sciences Departments (Ag Economics, Ag Engineering, Entomology, Rangeland Ecology and Management, and Soil and Crop Sciences), Texas Tech University, West Texas A&M University, Oklahoma State University, Texas Beef Council, Texas Cattle Feeders Assn., Independent Cattlemen's Assn., Texas Association of Dairywomen, Texas Pork Producers Assn., Texas Sheep and Goat Raisers Assn., and Texas Farm Bureau.

B. Impact of Programs

One thousand seven hundred forty-five producers from 10 states have participated in the Texas A&M Ranch to Rail program to learn more about how their calf crop fits the needs of the beef industry and what creates value in beef marketing. They learned that they could increase their net return per head by \$82 through retained ownership. They also learned that an effective health management vaccination program at the ranch of origin reduced bovine respiratory disease at the feedyard to reduce production costs by over \$90 per head.

The database on the 17,000 entries in Ranch to Rail revealed that administration of specific viral vaccines, the timing of their administration and the days weaned prior to marketing greatly impact production efficiency and carcass quality. The outcome of this result led to development of the Value Added Calf Vaccination Management program (VAC). The four largest cattle marketing organizations in the state have adopted the VAC guidelines and have special feeder calf sales that have resulted in increased values for ranches in excess of \$70 per head due to industry demands for healthier cattle.

In 2000, 229 beef industry leaders participated in Beef 706 to learn more about what creates value in beef carcasses and ways they can change management practices and genetics to enhance carcass value. Seventy-four percent (74%) indicated they would make different business decisions in their ranching operation as a result of participating in this educational program and 100% said they would recommend attending 706 to other beef industry members.

The Texas Pork Quality Assurance Youth Program was created and a curriculum was developed to educate the 26,000 youth swine project exhibitors at livestock shows on food and pork quality wholesomeness. Over 500 County Extension Agents and Vo-Ag instructors have been trained to deliver the curriculum. The National Pork Producers Association has adopted the curriculum and created a handbook to be distributed nationally.

Output Indicators:

The total number of people **completing** non-formal educational programs to improve the production efficiency and end product quality of livestock products was 3,840.

Total number of people completing these non-formal educational programs to improve the production efficiency and end-product quality of livestock products who plan to adopt one or more production practices or management strategies after completing strategies after completing these products was 3,400.

<u>3,840</u>	Number of Participants Served by Group Methods
<u>1,400</u>	Number of Participants Served by Individuals Methods
<u>20,000</u>	Number of Participants Served through Mass Media
<u>201,000</u>	Number of Participants Served through Website Access

Outcome Indicators:

The total number of people completing these non-formal educational programs who actually adopt one or more new practices or strategies taught at these programs within six months. **To be determined.**

C. Source of Federal Funds

Smith Lever and State Matching

D. Scope of Impact

Multi-State Extension – OK, AR, LA, TN, FL, and NM

Integrated Research and Extension

Extension faculty worked with research scientists to identify technologies that could enhance production efficiencies, improve data collection and optimize meat quality. Research on electronics and its adaptation to livestock production was implemented. Electronic individual ear tags were used in Ranch to Rail to facilitate computer assisted data collection. Also, ultrasound technology developed by researchers was used to determine body composition as it relates to carcass quality.

Research faculty updated producers in Beef 706 on how electrical stimulation of carcasses and controlled aging can be used to improve tenderness of retail cuts.

Goal 2: A safe and secure food and fiber system

Overview

The Centers for Disease Control and Prevention estimate that foodborne diseases cause 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year. More vulnerable populations for foodborne diseases include the very young, the elderly, and immunocompromised individuals. Medical costs and productivity losses associated with foodborne diseases are estimated in the billions of dollars each year, and in Texas, the costs are in the millions of dollars annually.

Statistics indicate that approximately 50% of all foodborne illnesses are attributed to improper food handling in restaurants. Because 43-50% of all food dollars are on food prepared outside the home, food safety is a top concern among consumers. Research shows that approximately \$750 can be saved for every foodborne illness prevented.

Educational training programs on safe food handling and foodborne illness are conducted by county Extension agents using the ServSafe curriculum of the Educational Foundation of the National Restaurant Association. The programs include food service manager certification and recertification programs, and front-line employee programs. Basic training and update instructor training is provided or facilitated for those county Extension agents who choose to participate in the program.

As a result of taking the Texas Cooperative Extension Food Protection Management course, food managers were expected to train their employees in safe food handling practices. Results indicate numerous increases in the knowledge and adoption of proper food handling practices.

Programs in the areas under Goal 2 continue to provide research-based information to commercial food handlers, as well as lay citizens in the state. Educational programs are designed in order for participants to make sound decisions on the implementation of best management practices and adoption of technologies. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy.

The data presented in this summary and the following section represents the efforts of Year 02 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texas food handlers with opportunities for increased food safety knowledge and skills. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Source of Funding and FTEs

Source of Funding: Smith Lever and State Matching

	\$ X 1000
	Actual
	<u>FY 2001</u>
Program	
Program 4 – Food Protection Management	678
FTEs	32.50
 Allocated Resources Goal 2	 1,234
FTEs	58.10

State POW Programs

State Plan of Work Program 4: Food Protection Management

Key Theme: Food Handling, Food Safety, and Foodborne Illness

A. Description of Activity

Background

The Centers for Disease Control and Prevention estimate that foodborne diseases cause 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year. More vulnerable populations for foodborne diseases include the very young, the elderly, and immunocompromised individuals. Medical costs and productivity losses associated with foodborne diseases are estimated in the billions of dollars each year, and in Texas, the costs are in the millions of dollars annually.

Statistics indicate that approximately 50% of all foodborne illnesses are attributed to improper food handling in restaurants. Because 43-50% of all food dollars are on food prepared outside the home, food safety is a top concern among consumers. Research shows that approximately \$750 can be saved for every foodborne illness prevented.

Food Protection Management Educational Program:

Educational training programs on safe food handling and foodborne illness are conducted by county Extension agents using the ServSafe curriculum of the Educational Foundation of the National Restaurant Association. The programs include food service manager certification and recertification programs, and front-line employee programs. Basic training and update instructor training is provided or facilitated for those county Extension agents who choose to participate in the program.

Educational lessons and activities in the Food Protection Management program focused on the following areas:

- Enhanced use of temperature control measures in food service, such as thermometer use, time and temperature control, safe internal cooking and holding temperatures, thawing procedures and general storage temperatures.
- Increased adoption of proper hygiene and hand washing practices of food service employees and managers.

- Increased adoption of practices to avoid cross-contamination such as proper storage, washing and sanitizing of utensils and equipment between use, and employee hygiene practices.
- Increased adoption of receipt and labeling of foods to prevent food waste and spoilage.

Target Audience for Food Protection Management Program:

The target audiences for this program were managers and front-line employees in food service institutions, companies, and small “mom and pop” businesses who needed or desired training. These contacts included those in both urban and in the underserved rural areas of the state where public health oversight is limited. Care was given to meet the geographically disadvantaged.

Linkages:

Internal linkages partnerships and cooperative relationships for the Food Protection Management program included academic and research faculty members from Texas A&M University. External linkages included the following: private sector partnerships such as the National Restaurant Association Educational Foundation, corporate industries such as fast food chains and bed and breakfasts, and food distributors. Interagency cooperators included the Texas Department of Health, local public health jurisdictions and trade organizations such as restaurant and convenience store associations.

B. Impact of Program

Output Indicators:

In 2000, a total of 40 Food Protection Management (FPM) 16-hour certification training programs and two FPM 6-hour re-certification training programs were conducted throughout the state. A total of 477 food service managers and food service employees completed the training. Of these food service managers and employees, 411 or 86% were from underserved rural areas of the state where public health oversight is limited.

Specific targeted data was not available for the number of front-line and occasional quantity cook education programs conducted.

Outcome Indicators:

As a results of taking the Texas Cooperative Extension Food Protection Management course, food managers were expected to train their employees in safe food handling practices. A statewide telephone survey of a sample of individuals who participated in the FPM certification course was conducted to determine the practices of food service employees both before and after the food service managers and employees had taken the course. This survey found that 94% of the participants had shared the information gained from the course with their employees. Other results reported by out come indicators were as follows:

Food safety practices of employees:	Before Taking the Course:	After Taking the Course:
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<p>Outcome Indicator: Using thermometers and other control measures to adequately monitor temperatures of foods.</p> <p>Employees use a thermometer to determine if foods have reached a safe internal temperature.</p>	40%	61%
<p>Employees always reheat leftover or cooked food to 165 ° F or until boiling.</p>	40%	53%
<p>Employees use a thermometer to check foods for proper holding temperatures.</p>	43%	65%
<p>Employees never thaw foods at room temperature or on the counter.</p>	42%	60%
<p>Outcome Indicator: Training and encouraging employees to use proper hand washing procedures.</p> <p>Employees wash their hands with soap and water for 20 seconds.</p>		
<p>Employees always wash their hands with soap and water for 20 seconds after handling raw meat or poultry.</p>		
<p>Outcome Indicator: Adopting practices to prevent cross-contamination.</p>	49%	74%
<p>Employees never use the same cutting board for preparing all types of food.</p>	45%	70%
	49%	68%