

FY 2004 Annual Report of Accomplishments and Results: Oklahoma Cooperative Extension Service

A. Planned Programs

Preamble

For much of the reporting period, the Oklahoma Cooperative Extension Service (OCES) was significantly down in personnel numbers. Budget revisions and budget reductions for State funding in FY02, FY03, and FY04 resulted in a 15%+ reduction in county professional staff and a 23%+ reduction in state and area specialists during much of the period represented in this report (Federal fiscal 2004). Some restoration of state funding occurred beginning in July of 2004 – allowing OCES to begin to rebuild to FY02 levels of field staff. Thus, the scope and breadth of total programming was negatively impacted during this period. Despite this, OCES personnel performed admirably and provided extensive science-based education, information, and technical transfer to a very large percentage of our target audiences.

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

Overview

Oklahoma key program components contributing to this goal included: improving efficiency in livestock production, improving efficiency in crop production, forage production, improving domestic marketing concepts and alternatives, sensor-based technologies, animal health, commercial horticulture and alternative agriculture opportunities, farm safety, turf production, climate and weather, cattle receiving and feeding, biosecurity, natural resource management, small farm viability, risk management, value-added food and agriculture products, home lawn and gardening, and food safety related to production. This goal constitutes a very significant proportion of the OCES effort. Approximately 3,907 demonstrations, meetings and conferences were conducted during the year. OCES personnel in agriculture-related programs conducted an additional, 36,582 visits and consultations. These activities were attended by 432,739 participants during the year. In addition, 10.5% of these participants were identified as representing non-white, minority populations as compared to 6.6% of the state's farms operated by individuals representing these populations.

Wheat is the crop with the highest gross receipts in Oklahoma. Over 5.5 million acres are planted. The largest purchased input for wheat farmers is usually nitrogen (N) fertilizer. Costs vary, but are about \$20+ per acre. An average of 65% of the applied fertilizer is lost by volatilization and leaching, equivalent to about \$13/acre per year. As a result of applying the N during the season, instead of preplant, the nitrogen use efficiency is improved, leading to decreased loss of N to the environment and improved profitability. The net economic benefit from in-season estimates of yield and topdressing all fertilizer N for grain production is estimated at \$17/acre/year for the 31 years of data from the Lahoma research trial. A new program was begun to take advantage of the sensor-based technologies developed through the Oklahoma Agricultural Experiment Station. Studies has shown that through use of hand-held sensors and Nitrogen-rich strips. Training was

conducted for 12 county agricultural educators, five area specialists and 18 pilot producers. Each county educator and area specialist was supplied with a hand-held sensor for use in demonstration projects. These will serve as the pilot program for a broader use of these in FY05. We expect over 150,000 acres will be involved in year one of this pilot program.

Beef cattle production and management continues as one of the most significant major program areas. Cattle production comprises about 47% of the \$3.8 billion in cash receipts earned by Oklahoma producers. These programs included quality marketing, reproduction, cow-calf production, quality practices, marketing tools, beef production during drought, stocker production, feeding decisions, cattle pricing, nutrition, etc. Several of these programs are highlighted in impact statements in the "themes" section. Highlights include: the Oklahoma Quality Beef Network (OQBN) program designed to take advantage of items learned from the 1995 and 2000 Beef Quality Audits – over 21,000 head of cattle from 305 cattle operations were certified in the first four years of the program. Cattle buyers paid an average of \$5.01 more per cwt for certified cattle. The higher price coupled with better gain due to preconditioning resulted in a gross increase in revenue of \$88 per head and an average increase in net income (after all documented costs) of \$24 per head. This is over \$500,000 increased net income from these sales alone. In addition, many of the producers are using the same methods on all their cattle and thus able to get premiums on those as well. Pre OQBN survey indicated that 75% of the participants did not precondition prior to the program.

The 2001 Range and Pasture survey conducted by the OSU Cooperative Extension Service suggested the misuse of common forage management practices, such as fertilization and stocking rate by forage and livestock producers. An integrated pasture management demonstration project was developed in 2003 and 2004 to illustrate the effects of fall fertilization on production of tall fescue for winter grazing, proper fertility management for legume persistence, and proper grazing management strategies. Proper stocking rates and proper pasture management are an integral part of this project because these two factors have a pronounced influence on the profitability of the forage-livestock enterprise. Small-to-medium sized forage/livestock operations can be managed as an integrated resource rather than a cattle operation to reduce input costs. Due to the amount of time and expense involved in feeding hay, the area with the greatest impact on income potential appears to be the reduction in the reliance of extended winter feeding programs. Modest savings of \$0.50 to \$1.00 per head per day could result in additional income of \$2,250 up to \$4,500 for a 75-cow beef herd by decreasing the length of the hay-feeding season from 120 days to 60 days. Over 85% of the herds in Oklahoma are 75 cows or less.

Forage and hay are extremely important to the state. Quality improvement and testing programs assist producers generate high quality, safe and low cost hay. A pre-testing program for toxic nitrate levels in forage helped producers avoid a potential \$12.1 million dollars of loss in seven counties alone in FY04. This program is available in most counties with similar results.

During 2004, a new version of the Oklahoma Beef Cattle Manual was premiered. The Oklahoma Beef Cattle Manual has been a key resource for beef cattle producers, extension professionals, veterinarians and many others in the beef cattle industry. The original Manual was a concise resource for information on beef cattle production and management, including nutrition, reproduction, animal health, genetics, and the design of cattle working facilities. In the new

manual, each topic has either been updated or completely rewritten to reflect more recent research based information. Additionally, chapters dealing with demographics of the Oklahoma beef industry, economics, marketing and risk management, business planning and tax considerations, leasing arrangements, enterprise performance analysis, livestock insurance, forage production, grazing management, drought management, beef quality assurance, waste management and biosecurity have been added. A companion Master Cattleman Program was introduced in 2004. The objective of this program is to enhance the profitability of beef operations and the quality of life of beef cattle producers by equipping them with vital information on all aspects of beef production, business planning, risk management and marketing. The Master Cattleman program includes an educational curriculum based on the Oklahoma Beef Cattle Manual and a producer certification process.

In other programs, the Oklahoma Food and Agricultural Products Center continues to assist a broad array of food and related products manufacturers in the state. These vary from startup businesses to very large manufacturers. Product design, manufacturing efficiency and food safety are among the primary outreach efforts. Four new-generation cooperative feasibility studies were supported by the center during the reporting period. Animal health, food safety and biosecurity have continued to grow in programming emphasis. The Plant Disease & Insect Diagnostic Lab (PDIDL) of the Department of Entomology & Plant Pathology at Oklahoma State University has been providing expert identification and diagnosis of crop pests to growers for many years. However, if a new pest of an important crop were introduced to Oklahoma either by an act of bio-terrorism, bio-crime, or accident, new technology, equipment and skills would be needed to handle this pest. Response time would be critical, so the infrastructure for relaying information and verifying identifications would need to be set up for such an emergency. Since 2002 the PDIDL has been a part of the Great Plains Diagnostic Network (GPDN), which includes nine states in the Great Plains region. During 2004 the focus of the PDIDL at Oklahoma State University was on upgrading equipment to assist with diagnosis of entomological problems, on implementing PDIS, on converting pathogen detection protocols using polymerase chain reaction (PCR) methods to real time PCR, on beginning to set up a biosecure lab, and on training extension educators, crop advisors, and master gardeners to recognize the major pest threats to crop security. First Responder training was completed for County Agricultural Educators. In 2004 newly developed real time protocols were used to survey for two pathogens of national importance that pose a threat for Oklahoma. These were *Xylella fastidiosa*, the cause of Pierce's Disease of grapevines in other grape producing states including Texas and Arkansas, and *Phytophthora ramorum*, the cause of the Sudden Oak Death epidemic in California, Oregon and Washington. Oklahoma was shown to be free of *X. fastidiosa* in surveyed vineyards. However, *P. ramorum* infested nursery material recently shipped from California was intercepted at a single Oklahoma nursery, destroyed, and subsequently shown to have been totally eradicated from that nursery. During 2004 the PDIDL also detected Africanized honey bees in Oklahoma for the first time. The lab has become the sole diagnostic center for processing samples of suspect honey bees using newly developed PCR methods to determine the extent of distribution of Africanized honey bees in Oklahoma.

Weather-based farm management can reduce farm inputs, increase crop yield and quality, improve farm sustainability, provide new IPM opportunities, and improve environmental quality. Oklahoma agricultural producers have the opportunity to move from calendar-based to weather-based farm management. This has been made possible by the Oklahoma Mesonet, one of the most

data rich weather networks in the world. New data is transmitted every 15 minutes in 5-minute increments from an automatic statewide system of more than 110 towers. This continuous feed of research-quality data is used to maintain a wide spectrum of weather data and agricultural decision support products accessed over the Web. One large hog producer was one of four USA pork production enterprises to win a 2004 Environmental Steward Award from the Pork Checkoff and National Hog Farmer magazine. The producer uses the Mesonet Oklahoma AgWeather site to access the Dispersion Model and the 60-hour NGM MOS forecast in making nutrient application decisions. The Oklahoma Mesonet allows them to precisely monitor air and soil temperatures, relative humidity, wind speed and direction, barometric pressure and soil moisture levels.

Positive progress was made in all Key Program Components listed under this goal in the Oklahoma Cooperative Extension Service 5-year plan of work. Total expenditures represented by programming and related support for this goal are approximately \$9.4 million with \$1.8 million from Smith Lever funds. About 83 professional and paraprofessional FTEs contributed to the goal last year. Following are some example program impact statements arranged by CSREES Key Theme.

Impact Statement Goal 1

Key Theme – Adding Value to New and Old Agriculture Products

Title: Coordinating the research efforts within the Oklahoma Food and Agricultural Products Research and Technology Center

Issue:

The Oklahoma Food and Agricultural Products Research and Technology Center (FAPC) is a value-added food processing facility having faculty and professional staff representing essentially all food and fiber production and processing disciplines in Oklahoma. The FAPC Coordinating Project ensures control and accountability of all human and facilities investment into the FAPC for economic development in Oklahoma.

What Has Been Done:

The food industry and agribusiness sectors have been serviced, totaling over 1,000 client projects, with attention given to food safety and microbiology, horticultural products processing, food process engineering, regulatory and compliance technology and training, oilseed products and processing, small grain products and processing, meat and poultry products and processing, food and ingredients processing, food preference and sensory science, economic and rural development, business planning and market development for food companies of all sizes in Oklahoma, and entrepreneurial business development in Oklahoma. Significant progress has been made in identification of strategies for the reduction of pathogens entering the food stream via meat animal carcasses and through ready-to-eat meat and poultry products. Significant progress continues in the characterization of the process and nutraceutical quality of lycopene obtained from watermelons. Significant progress has been made in the characterization of potential of harvested and field processed and fermented sweet sorghum for fuel ethanol production. Significant progress has been made in a turnkey project for the conversion of the total food manufacturing waste stream in commercial food plants in Oklahoma to a energy resource for

those plants. Significant progress has been made in food safety/HACCP training, small business start-up training, real-world marketing training, clean-in-place food systems training and best practices in quality control training. Finally, significant progress continues in the manufacture of commercially accepted wood composites from underutilized species in Oklahoma.

Impact:

The FAPC has successfully helped launch over 130 start-up businesses, has had significant impact on over 22,000 direct and indirect food processing jobs in Oklahoma and significant impact on over \$2 billion in direct and indirect food processing revenue in Oklahoma. The FAPC has contributed to a 69% increase in employment and over 40% increase in sales revenue in those companies assisted in Oklahoma. The FAPC has been the product development resource for the successful launch of a nationally marketed set of processed meat and sausage products. The FAPC has been the product development and manufacturing site resource for the successfully Oklahoma marketed grape juice beverage product.

Scope of Impact: The emphasis of work at the FAPC is economic development in Oklahoma.

Source of Funding: State funds. About \$1.5 million in national grant funds are captured for work at the FAPC.

Contact:

J. Roy Escoubas, Ph.D., Director and Professor
The Oklahoma Food & Agricultural Products Research & Technology Center
148A FAPC
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-6205
Email: escouba@okstate.edu

Title: Basic Training: A Guide to Starting Your Own Food Business

Issue:

People looking to start up a food business have wide ranges of general business knowledge and expertise as it relates to production needs. Thus, programming needs to be flexible enough to answer specific questions/needs while ensuring overall general knowledge goals and objectives are met at the same time. This workshop provides prospective entrepreneurs with the basic knowledge needed to make informed decisions before they invest capital in a new food business.

What Has Been Done:

The Food and Agricultural Products Research and Technology Center offers a monthly workshop to food business and other value-added agricultural entrepreneurs. The program is marketed through the county offices of the Oklahoma Cooperative Extension Service (OCES), Oklahoma Career Technology Small Business Assistance Program, Chambers of Commerce, Kerr Center for Sustainable Agriculture, Rural Development Team of OCES, Oklahoma's two State Fairs, through

many public speaking opportunities and by previous workshop attendees. Presenters include the Business and Economics team at FAPC and officials from the Patent and Trademark Office, the State Health Department, Oklahoma Department of Agriculture (Market Development and Division of Weights and Measures) and the Center of Home-Based Business. Industry professionals are invited as guest luncheon speakers to provide entrepreneurs insight and personal experiences.

Impact:

Over 500 entrepreneurs have taken advantage of this program since its beginning in July 1999, learning about business plan development, market evaluation, patents and trademarks, labeling and UPC code requirements, health regulations, liabilities and legalities, and the Oklahoma Department of Agriculture's "Made in Oklahoma Program." Nearly 40 graduates have successfully launched their value-added products in retail and foodservice markets as well as utilize other market arenas such as fund raisers, mail order, Internet sales, gourmet and specialty stores and special events.

Scope of Impact: State Specific

Funding Sources: State, Participant Fees

Contact:

Chuck Willoughby
FAPC Business and Marketing Specialist
141 Oklahoma Food and Agricultural Products Research and Technology Center
Oklahoma State University
Stillwater, OK 74078-6055
Phone: 405-744-6071
FAX: 405-744-6313
E-mail: Chuck.Willoughby@Okstate.edu
Website: <http://www.fapc.biz>

Title: Assistance to Producer-Owned Value-Added Enterprises

Issue:

Agricultural producers are increasingly interested in developing and participating in value-added enterprises. Producers pursue value-added activities to gain more direct access to markets and, ultimately, a greater share of the consumer's food dollar. By developing producer-owned value-added business, farmers hope to assure themselves a place in the food supply chain, which is increasingly reliant on vertical integration and coordination of production, marketing, and/or processing to deliver products with attributes that meet specific end-user needs. Agricultural producers often struggle to assess the market potential, technical and economic feasibility of a business venture and to select an appropriate business structure.

What Has Been Done:

The Bill Fitzwater Cooperative Chair program has worked closely with emerging producer-owned business efforts including American Native Beef (a cow and bull slaughter facility), Oklahoma Farmers Union Sustainable Energy (an ethanol project) and Oklahoma Farmers and Ranchers Energy Enterprises (an oilseed processing project). Producer groups have received assistance in feasibility assessment, risk analysis, project development, governance structures, and alternative business models.

Impact:

Assistance and in-kind support has assisted these groups in receiving over \$500,000 of funds through USDA's Value Added grant program. The technical assistance and educational programs offered by OSU has helped the participating producers understand potential risks and returns and to develop more effective business structures.

Scope of Impact: Approximately 900 agricultural producers.

Funding: Private, state, Smith-Lever

Contact:

Phil Kenkel
Ag Economics
516 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-9818
Email: kenkel@okstate.edu

Key Theme – Agricultural Profitability

Title: Oklahoma Quality Beef Network

Issue:

Cattle sickness costs the industry millions of dollars each year. These losses negatively impact producer profitability and they impact each and every level of the beef production chain. These losses are felt at the producer level through decreased performance, death loss, increased costs associated with treating sick animals, increased labor expenses and additional expenses for equipment, to name a few. These losses many times extend beyond the cow-calf producer to each of the other sectors of the beef economy. Chronically ill cattle place a huge financial burden on the entire industry as the cost of carrying such cattle replicates itself throughout the life of the calf. Unfortunately the cost burdens associated with cattle sickness do not stop once the cattle are harvested. There are a number of well-documented studies including the 1995 and 2000 Beef Quality Audits that clearly illustrate that sickness in cattle, at even an early age, can have dramatic impacts on carcass quality, tenderness, and in some extreme cases the condemnation of entire carcasses.

What Has Been Done:

In order to facilitate the adoption of best management practices that should result in reduced sickness and associated adverse effects, the Oklahoma Quality Beef Network (OQBN) was developed in 2001. The objective is to add value to Oklahoma's calf crop and capture at least part of the added value. During the initial phase of the OQBN, a source and process verification system has been implemented focusing on management practices around the time of weaning. In general, OQBN process verification (or certification) requires producers to wean their calves at the home ranch for a minimum of 45 days and follow specific quality assurance, vaccination and nutritional guidelines.

During the start-up phase, County Educators and Area Livestock Specialists collaborated with the Oklahoma Cattlemen's Association and producers by serving as "OQBN Representatives". In this capacity, Extension personnel provided education to the producers and inspected the cattle prior to marketing to insure that the integrity of the program was upheld. However, as the program evolves, Extension's role is gradually shifting to one of training local cattlemen, veterinarians and other industry leaders to serve as "OQBN Representatives."

Extension personnel have collaborated to collect extensive evaluation data. One evaluation data set includes just over 35,000 head of OQBN certified and non-certified cattle. These data have been used to determine the financial impact of the program. In addition, participating cattle producers (both sellers and buyers) have received a follow-up survey. This survey provides valuable feedback for the purpose of documenting the programs impact as well as strengths and weaknesses. Seven case studies were conducted to document typical program costs and changes in gross revenue. This past year, 1,711 OQBN certified calves representing 45 different sale lots from eight different OQBN sales were tracked for 90 days after the sale event. Health and death loss of these OQBN certified cattle was compared to health and death loss of CONTROL lots of cattle. The criteria for selecting CONTROL lots of cattle included the following: similar breed type, similar weight class and quality, the cattle had to be purchased during the same week, and the control cattle must have no known health history.

Impact:

Between six and eight regional OQBN certified calf sales have been scheduled and held each of the past four years. During this time, approximately 21,000 head of cattle have been certified. On average, cattle buyers were willing to pay \$5.01 more per cwt for groups of OQBN cattle compared to calves that had no documented background or management. The average price premium has been about \$32 per head, while the added value of weight gain during the preconditioning period averaged \$56 per head for a gross increase in revenue of \$88. Documented program costs have averaged \$64, resulting in an average increase in net income of \$24 per head. This increase in net income does not consider the potential improvements in animal performance or carcass quality beyond the initial marketing (cow/calf) phase. According to survey data, 75% of the participating cow/calf producers had not historically preconditioned their calves. Furthermore, over 93% of the participating producers are pleased enough with all aspects of the program that they indicate that they will participate again in the future. In the cattle tracking project conducted during the winter/spring of '03/04, the incidence of one or more treatments for sickness (expressed as mean % of the sale lot or management group) was greater ($P < .01$) for CONTROL (29.1%) compared to OQBN certified cattle (6.7%). Similarly, the incidence of death loss was significantly higher ($P < .01$) for CONTROL (3.0%) compared to OQBN certified cattle (.1%). Perhaps the most

significant impact the OQBN has had on the beef industry in Oklahoma to date cannot be measured by participation in the OQBN itself. According to Bill Barnhart of OKC West Livestock Market, Inc., and President of the Oklahoma Livestock Marketing Association, "Since producers began to see the success of the OQBN, we have seen a dramatic increase in the number of cow/calf producers weaning and preconditioning their calves before bringing them to the livestock marketing facilities across the state. It is apparent to me that the industry is finally ready to adopt this value added opportunity."

Funding Source(s): State; Smith-Lever; Oklahoma Department of Agriculture

Scope of Impact: State Specific

Contact:

David Lalman

Associate Professor and OSU Cooperative Extension Beef Cattle Specialist

201 Animal Science

Oklahoma State University

Stillwater, OK 74078

Phone: 405-744-6060

Email: dlalman@okstate.edu

Title: Summer Forage Production

Issue:

Forage producers look to find the most economical way to produce summer forage for livestock consumption. Claims in magazine can often times over state the economic advantages of forage systems and forget to look at research information, which indicates poor yields and economics. We would hope that the public would utilize research-based information in their decision making to avoid loss of forage production and in this case economic losses.

What Has Been Done:

An example of information transfer is a producer contacts James Jones, Nobel County OCES Agriculture Educator, to discuss the forage production options after an educational meeting during the previous fall. He had read in a magazine about the use of hybrid sorghums in a mix with crabgrass for summer forage production. The story failed to mention nitrate problems with forage sorghums. The article failed to mention the need for 45 plus inches of rainfall needed to produce the stated forage production and the story failed to mention the needed fertilizer components to produce the stated forage. Through conversation, the producer was convinced that single forage without the concern for nitrates and additional seeding costs would be more cost efficient than two annual grass plant in a single field.

Impact:

Through educational programming and follow up discussion the producer was able to decrease his costs by \$24.30 per acre. Though educational programming and follow up to the discussion the producer saved \$21.00 per acre seed costs and an additional \$3.30 per acre in fertilizer. While not

being able to document the reduction in nitrate problems associated with hybrid sorghums, there is a chance the producer did avoid risks associated with nitrates.

Scope of Impact:

Lower costs of forage production and decrease the impacts that nitrate poisoning could cause.

Source of Funding: County Commissioner funding for local tax base and use of state funding to provide travel dollars for area Specialist travel.

Contacts:

Roger Don Gribble
OCES NW Area Agronomist
316 E. Oxford
Enid, Ok 73701
Phone: (580) 237-7677
Email: gribble@okstate.edu

James Jones
Nobel County OCES Agriculture Educator and CED
300 Courthouse Drive #13
Perry, Ok 73077
Phone: (580) 336-4621
Email: jonjame@okstate.edu

Title: Weather-based Decision Support for Agricultural and Natural Resource Systems

Issue:

Weather-based farm management can reduce farm inputs, increase crop yield and quality, improve farm sustainability, provide new IPM opportunities, and improve environmental quality. Oklahoma agricultural producers have the opportunity to move from calendar-based to weather-based farm management. This has been made possible by the Oklahoma Mesonet, one of the most data rich weather networks in the world. New data is transmitted every 15 minutes in 5-minute increments from an automatic statewide system of more than 110 towers. This continuous feed of research-quality data is used to maintain a wide spectrum of weather data and agricultural decision support products accessed over the Web. Oklahoma State University in cooperation with the University of Oklahoma is involved in a program of product development and education to support the transition to weather-based farm management. The challenges include increasing producer comfort with computer communications, expanding grower weather knowledge, simplifying weather data display, and shaping decision support products to meet day-to-day farm management needs.

What Has Been Done:

Oklahoma State University in cooperation with the University of Oklahoma has created a multi-faceted agricultural and natural resource extension outreach program. A non-subscription website, the Oklahoma AgWeather (<http://agweather.mesonet.org>), allows weather data and product access. It is organized by agricultural commodity and natural resource area, providing access to real-time weather data, Oklahoma climate information, weather-based agricultural and natural resource decision support products, USDA commodity market information, Oklahoma agricultural producer associations, OSU programs and services, and Oklahoma Cooperative Extension Service (OCES) fact sheets. New or revised decision support products include evapotranspiration models for agronomic and horticultural crops and Spinach White Rust Model. The Spinach White Rust model is the first IPM model with a pest activity forecast. Extension and outreach efforts to inform

growers about the Oklahoma AgWeather website and introduce weather-based farm management tools have been pursued through farm show exhibits, educational programs, and development of printed educational materials. An OCES educator in-service was held in November 2004 to increase educator weather knowledge and inform them of available educational materials. Educators from 29 of Oklahoma's 76 county offices attended one of a series of Oklahoma Mesonet training sessions.

Impact:

Oklahoma AgWeather web use statistics show a substantial increase in individual data access. The data stream in 2004 averaged 2.01 GB of downloaded data per month, an increase of 56% from the 2003 monthly average of 1.29 GB. In 2004, the monthly average of unique users was 3,516, an increase of 8% from the 2003 monthly average of 3,250. These web statistics indicate a greater use of weather data in farm management decisions, although the growth in new users was lower than anticipated. An example of increased data use can be seen at the Luthi Family Farm owned and operated by Chuck and Wathina Luthi in Gage, Oklahoma. The Luthi's farm was one of four USA pork production enterprises to win a 2004 Environmental Steward Award from the Pork Checkoff and National Hog Farmer magazine. The Luthi family uses the Oklahoma AgWeather site to access the Dispersion Model and the 60-hour NGM MOS forecast in making nutrient application decisions. The Oklahoma Mesonet allows them to precisely monitor air and soil temperatures, relative humidity, wind speed and direction, barometric pressure and soil moisture levels. Wathina Luthi notes that, "being stewards of the land means balancing economics with the environment in order to be viable for years to come."

Scope of Impact: State specific, Multi-state (Oklahoma, Texas and Kansas)

Funding Source(s): Oklahoma state appropriations

Contact:

Albert J. Sutherland, CPH, CCA
Biosystems and Agricultural Engineering
828 West Choctaw Avenue
Chickasha, OK 73018-2310
Phone: 405-224-2216
Email: albert.sutherland@okstate.edu

Title: Wheat Pasture Stocker Cattle Educational Programming

Issue:

Over 1,000,000 stocker cattle, both imported and native, graze wheat pasture in Oklahoma in a typical year. Wheat forage is utilized on part of the over five million acres of small grain pasture in Oklahoma. The stocker cattle industry is the largest livestock enterprise in Southwest Oklahoma and adds millions of dollars in gross income to the economy. Stocker cattle health management, management of growing programs, forage supplementation and other general management issues, are key factors that affect the profitability of stocker cattle producers. In an effort to reduce the incidence of shipping fever diseases, some stocker producers are purchasing

calves that have been weaned from the cow and have received a series of preventive vaccinations. In order for these types of calves to be available to the stocker and feedlot operators, cow/calf producers must become informed about the concepts of preconditioning programs such as OQBN. Some cattlemen utilize the services of a commercial cattle receiving lot or starter yard to handle newly received imported stocker calves. These yards tend to manage large numbers of high risk, stressed calves and therefore require specialized educational programming. Often stocker cattle operators have an opportunity to purchase cattle at a lower price, prior to the development of adequate forage for grazing. Educational opportunities exist to assist these producers in developing holding/growing nutrition programs in anticipation of grazing.

What Has Been Done:

Educational programming has been targeted towards wheat pasture stocker cattle operators to provide the latest and best information possible on management issues which include forage production and grazing management, nutrition and health. These topics include the OQBN program and opportunities associated with the management and marketing of cattle certified as a part of the program.

Educational programs were conducted to assist producers with information to evaluate supplemental feeding and nutrition programs for cattle grazing limited wheat pasture, general wheat pasture cattle management techniques and grazing termination. Field demonstrations were established to show producers the value of selecting the proper forage producing wheat varieties for grazing and timely establishment.

Educational opportunities associated with the OQBN program involved producers selling cattle as well as purchasers of those calves. A project to monitor the health and performance of selected lots of OQBN cattle was initiated and the results were passed back to the cow calf producer that originally sold the cattle. Educational presentations stressed health management/vaccination, and good nutrition programs for calves at weaning that were headed to a stocker or feedlot environment. The vaccination programs and nutrition guidelines have a positive impact by potentially reducing the use of antibiotics through the reduction in the number of sick calves. Research has shown that calves which are healthier through the feeding phase will produce a higher quality carcass, which should, in turn, realize a higher profit potential. A Southwest Oklahoma Stocker Cattle Conference was continued for the district which allowed area cattlemen to receive timely stocker cattle health and management information. Another major educational effort by agricultural educators in SW Oklahoma has been to keep producers up to date on the national animal identification program as initiated by the USDA. In-service trainings were held for county educators as well as several informational programs for producers.

Impact:

Producers gained key economic skills in determining the proper amount and type of feed supplements to provide to stockers on wheat pasture. Knowledge was gained for utilizing available feed grains or by-product feeds as low cost alternatives for wheat pasture supplementation and in efficient holding/growing programs prior to grazing wheat forage. Producer attitudes were improved regarding their commitment to follow beef quality assurance guidelines.

One specific result of the initiative in following the health and performance of the OQBN cattle was a change in the vaccination techniques of a producer who evaluated the feedback information he received on the cattle he sold. A relatively high number of the cattle subsequently became sick which indicated a problem in his vaccination procedure, which he corrected in the next calf crop. The producer returned to the program this year, offering calves that should have much better protection from –proper use of the vaccine products. This should result in a reduced level of antibiotic use, and healthier and better performing cattle.

Contact:

Bob LeValley, Area Livestock Specialist
Duncan Area Office
1313 W. Ash
Duncan, OK 73533
Phone: 580-255-0546
Email: rlveall@okstate.edu

Title: Extension Educational Programs for the Oklahoma Pecan Industry

Issue:

The Oklahoma pecan industry has remained a strong, viable entity for the last 10 years and even experienced a resurgence of interest during the last six years. This interest has come from a strong core of pecan growers involved in the Oklahoma Pecan Growers Association (OPGA) and from an equally strong extension/research team that interacts with the industry association very closely. The industry enjoys a great deal of popular support from the general population as many homeowners have pecan trees in their yards and located throughout their personal property. Many of these homeowners, as well as, commercial growers wish to continually gain more knowledge about pecan culture, production practices and pest management.

What Has Been Done:

For the past 9 years the Oklahoma Pecan Research/Extension Team has provided an educational opportunity for the growers of Oklahoma. This core team consists of specialists from Horticulture, Entomology and Plant Pathology. Key support has also been provided by specialists in soils, irrigation and agriculture economics who have assisted with instruction and contributed to development of educational materials. This course covers integrated pecan management throughout the season and is taught with a combination of classroom discussion, orchard exercises and orchard visits. In 2001, an effort was initiated to expand the audience base participating in the course by constructing a pecan e-learning offering on the Internet. In 2002, OSU entered into contract with Agri-Business Group to create the first pecan e-learning short course. In 2003, this dream became a reality and testing of the e-learning prototype was successful in 2004. Each of these offerings is currently being evaluated in 2005 as part of a master thesis project. This innovative Extension offering has allowed for a distance education mechanism that has reduced demands on schedules and travel by instructors. In addition, this new offering represents a multi-level approach to teaching that permits the user to determine their entry level. It is accompanied by a self analysis post-test at the end of each section.

As a result of this team effort the Oklahoma Pecan Management Course has been designed and offered 8 times in the last nine years. The course meets 8-9 times per year for a period of four hours. Even after so many years, this class still pulls in 25-40 growers per year and has witnessed the return of many of our initial students for a refresher lesson. In 2005 the enrollment currently stands at nearly 40 growers and their spouses. Pecan related articles have been added to ongoing newsletters related to fruit/nut production and the pecan e-learning offering has been made available to anyone with an Internet connection. It is currently provided to the pecan course participants as part of their package.

Demonstration/research projects have been initiated to secure reliable data on pest management and other practices that can help Oklahoma growers produce a profitable crop. Competitive grant proposals have been successfully submitted to various funding agencies including Integrated Pest Management (Oklahoma minigrant program), Southern Region IPM and CSREES Programs to procure funds.

Impact:

In the last three years OK pecan acreage has increased from about 70 to over 86 thousand acres. In addition, Oklahoma currently leads the nation in the development of new cultivar orchards. In its first offering, in 1997 over 60 people including 5 county extension educators took the Oklahoma Pecan Management Course. Nearly 150 people, including 10 county extension educators, took the course the first three years it was offered with over 35 persons currently registered for the 2005 course. The pecan e-learning opportunity has the potential to expand this educational opportunity across the nation.

Scope of Impact: State Specific

Funding: State, Smith-Lever

Contact:

Phil Mulder, Extension Entomologist
Department of Entomology and Plant Pathology
127 Noble Research Center
Stillwater, OK 74078
Telephone: 405-744-9413
Email: philmul@okstate.edu

Title: Integrating Pasture Management and Herd Size Strategies

Issue:

The 2001 Range and Pasture survey conducted by the OSU Cooperative Extension Service suggested the misuse of common forage management practices, such as fertilization and stocking rate by forage and livestock producers. Additional information suggests that many of current forage/livestock producers are part-time producers with goals and expectations that may not be completely profit motivated. There appears to be some decline in pasture productivity, especially among some producers, who oftentimes substitute proper management with purchased inputs.

This survey also indicated a heavy dependence on feeding hay during the winter. A small percentage of producers feed hay less than 30 days and less than 10% feed hay fewer than 60 days. Seventy seven percent indicated that feeding hay for longer than 60 days was common and 34% fed hay longer than 120 days.

What Has Been Done:

An integrated pasture management demonstration project was developed to illustrate the effects of fall fertilization on production of tall fescue for winter grazing, proper fertility management for legume persistence, and proper grazing management strategies. Proper stocking rates and proper pasture management are an integral part of this project because these two factors have a pronounced influence on the profitability of the forage-livestock enterprise. Almost 75% of 183 acres have been managed in a sustainable pasture system since 1988. The major purpose of this demonstration is to highlight potential means to improve net return without using excessive inputs or management strategies.

Impact:

Small-to-medium sized forage/livestock operations can be managed as an integrated resource rather than a cattle operation to reduce input costs. Due to the amount of time and expense involved in feeding hay, the area with the greatest impact on income potential appears to be the reduction in the reliance of extended winter feeding programs. Modest savings of \$0.50 to \$1.00 per head per day could result in additional income of \$2250 up to \$4500 for a 75-cow beef herd by decreasing the length of the hay-feeding season from 120 days to 60 days.

Scope of Impact: Regional, Multi-State

Funding: State, Smith-Lever

Contact:

Daren D. Redfearn, Extension Forage and Pasture Management Specialist
Oklahoma State University
366 Ag Hall
Stillwater, OK 74078
Phone: (405) 744-9648
Email: daren.redfearn@okstate.edu

Key Theme – Animal Production Efficiency

Title: Twenty Actions for Positive Returns in Small Sized Herds

Issue:

There are many livestock producers that no matter how hard they try, they can't seem to turn a profit. They might be doing all of the major things right but missing several small points that are keeping them in the red. County Extension Educators, Agriculture have long realized that although these folks are very difficult to reach, they have needs that we must continue to strive to meet. The specific target audience is cattle owners with just 25 cows and a single bull located in

Northeast Oklahoma. The predominant pasture forage is Bermudagrass and/or Fescue situated on mostly Class II Cherokee Prairie soils. Calves and cull cows are sold at a local livestock marketing facility. The questions are, for the situation described above, what could the cow owner do from a practical, economic, and quality of life standpoint and how can extension assist them to take advantage of this knowledge?

What Has Been Done:

A list of 20 Cattle or Pasture Management practices was developed that are easy and inexpensive to implement and could independently make the bottom line look better for most small sized herds. Each of these practices is compared to the operation that imposes no management and basically leaves the pastures and cattle alone. A simple, one page tip sheet accompanies each practice listed and is included in an appendix. Tip sheets were made available to the 125 in attendance at a Cherokee Prairie Producer meeting in Vinita October 26, 2004. This Cow-calf educational program was the theme of an extension session at the 2004 Tulsa Farm Show and was well received. Quantities of tip sheets are displayed in racks at hardware stores, farm and garden centers and other locations where rural residents are likely to shop.

Impact:

Local producers were very pleased with the product developed and encouraged OCES to begin on a "second list" of 20 practices. A local state legislator helped find a sponsor to pay the cost to further develop this effort. Two bound booklets and a CD are in each county of the Northeast Extension District. The booklets are used to show cooperators the 20 tip sheets available. Copies needed for distribution by county extension offices are made from the CD. Over 2,000 tip sheets were picked up at a Cherokee Prairie meeting and the Tulsa Farm Show. The benefits of these practices are additive and total \$154 per cow. As a point of interest, county educators report that cattlemen with larger numbers of cows have appreciated and are utilizing this simplified approach also.

Funding Source(s): State; Smith-Lever; Other

Scope of Impact: Northeast Extension District

Contact:

Kent C. Barnes
Area Extension Livestock Specialist
230 W. Okmulgee Suite C
Muskogee, Oklahoma 74401
Phone: 918-686-7800
E-mail: bkent@okstate.edu

Title: OK Steer Feedout

Issue:

Information transfer between different segments of the beef industry is becoming much more commonplace and potentially more valuable. Beef cattle producers that can document improved

post-weaning performance of their calves can potentially capture the added value at marketing. Key performance information would include, feedlot average daily gain, weaned calf health performance, carcass quality grade, carcass yield grade and carcass value premiums. As beef producers utilize improved genetics in their herd, they often desire to verify superior calf crop performance. Without verification, the added calf value potential can often go un-captured. The OK Steer Feedout is a vehicle that allows cow-calf producers, with small or large herds, to evaluate the performance of a sampling of their weaned calves and help assess the potential increased value due to feedlot performance or carcass merit.

What Has Been Done:

The OK Steer Feedout is an information feedback program for cow-calf producers that desire to learn more about the post-weaning performance of their calf crop. Objectives of the program include; 1) Data collection and reporting on the steers entered. 2) Assist producers with genetic change or improvement. 3) Benchmark the health status of calves produced. 4) Educate beef producers on the feedlot and meat industry, with emphasis on traits that add value.

The OK Steer Feedout was started in 1984 and has fed over 4800 steers representing over 35 different beef breeds and breed crosses. Over 330 ranches, many of which are multiple year consigners, from Oklahoma, Texas, Kansas, Missouri, Colorado, and Nebraska have utilized the program. The OK Steer Feedout consists of a fall born and spring born test with a 150 to 180 day feeding period followed by harvest in a commercial beef plant. To participate, ranchers deliver weaned steers, grouped in multiples of five head, to the host feedlot. The steers are processed, tagged and fed until harvest. The OK Steer Feedout committee oversees the feeding period, data collection, steer harvest, financial rectification and final data report. A booklet is produced with a comprehensive summary of each steer the producer entered and summary information from the current Feedout test. Educational programming is conducted in conjunction with the OK Steer Feedout.

Impact:

The fall born and spring born 2003-2004 OK Steer Feedout tested 195 steers from 10 beef breeds representing 25 Oklahoma and Kansas ranches. The gross revenue of the carcasses marketed on a premium grid program through the Feedout was \$175,976.76 for an average of \$936.05 per head. A quality grade premium was paid on 37 carcasses and averaged \$15.00 per head. A yield grade premium was paid on 131 carcasses and averaged \$24.25 per head. The total of premiums paid was \$3731.75. Grid discounts are also identified to assist producers with cow culling or bull selection changes or both. The number of steers receiving grid discounts in the 2003-2004 Feedout was: quality grade 7, yield grade 1, over-weight 1, and under-weight 1 carcass. The average calculated per-head profit for steers fed in the 2003-2004 Feedout was \$12.62, and ranged from a high of \$192.07 to a low of -\$222.14.

An educational program is held annually to review the current Feedout data and help producers apply the OK Steer Feedout information to their ranch. Over 60% of the ranches attended the 2004 wrap-up program, in addition to other interested beef producers. We distributed over 300 Feedout summary booklets to participating ranches and interested producers. Participating producers were given a digital photo of their steers before and after feeding, plus the digital image of the carcass rib eye cross-section.

Many purebred producers use the OK Steer Feedout to gain information for evaluating young sires. Other producers feed steer groups in consecutive years to measure genetic progress. In the 2003-2004 Spring born test, one western Oklahoma producer had a marked increase in the number of USDA choice steers. In the Spring 1999-2000 test, the producer had 2 out-of 5 grade choice. Following a bull selection change, steers were tested and all 5 steers graded choice with 2 steers receiving a quality grade price premium. Health of the calf crop greatly impacts profitability. In the Fall 1999-2000 test, one eastern Oklahoma producer had very poor health performance. Of the 15 head of steers on test, 1 steer died and the total medical treatment cost was \$531.43 for the feeding period. Following a ranch visit by the area livestock specialist and county extension educator to discuss preconditioning and nutrition, the producer made the suggested management improvements. In the Fall 2001-2002 test, the producer tested 10 steers with no death loss and a total treatment cost of \$86.91.

An educational field day was held in 2004 in conjunction with the Feedout. We had 105 producers and extension educators attend the educational program on carcass value, animal identification, and a fed steer evaluation demonstration. A bus tour was held in 2003 in conjunction with the Feedout. The 48 producer's rode a chartered bus to Dodge City, Kansas and toured the Excel beef processing facility including both steer harvest and carcass fabrication. Other tour stops included the Gardiner Angus Ranch and Ford County Feeders.

Scope of Impact: State Specific, some individual producer participation from neighboring states

Funding: State, Smith-Lever Act

Contact:

Greg Highfill
Area Extension Livestock Specialist
316 E. Oxford
Enid, OK 73701
Phone: 580-237-7677
E-mail: ghighfi@okstate.edu

Key Theme – Bioterrorism

Title: Crop Biosecurity

Issue:

Protecting our nation's crops against bio-terrorism has become an important aspect of homeland security. The Plant Disease & Insect Diagnostic Lab (PDIDL) of the Department of Entomology & Plant Pathology at Oklahoma State University has been providing expert identification and diagnosis of crop pests to growers for many years. However, if a new pest of an important crop were introduced to Oklahoma either by an act of bio-terrorism, bio-crime, or accident, new technology, equipment and skills would be needed to handle this pest. Response time would be critical, so the infrastructure for relaying information and verifying identifications would need to be set up for such an emergency.

What Has Been Done:

During 2002 the PDIDL became part of the Great Plains Diagnostic Network (GPDN), which includes nine states in the Great Plains region. The GPDN is one of five regions of the federally mandated National Plant Diagnostic Network. During 2004 the emphasis of GPDN was on upgrading the infrastructure and diagnostic capacity of all nine member diagnostic labs, on implementing the Plant Diagnostic Information System (PDIS), a secure, web based diagnostic platform and data base, and on training First Detectors to be able to detect and react to new outbreaks of pests of agricultural crops. During 2004 the focus of the PDIDL at Oklahoma State University was on upgrading equipment to assist with diagnosis of entomological problems, on implementing PDIS, on converting pathogen detection protocols using polymerase chain reaction (PCR) methods to real time PCR, on beginning to set up a biosecure lab, and on training extension educators, crop advisors, and master gardeners to recognize the major pest threats to crop security. In October 2004 the PDIDL also participated in a mock scenario in which Asian soybean rust, a disease caused by a select agent, was detected in Oklahoma by a First Detector. All protocols that would be carried out if this were to actually happen were executed within 24 hours. State regulatory personnel and the campus safety officer also participated in this test. During the latter part of 2004, the PDIDL fully implemented PDIS. It also began the process of converting a small lab in the PDIDL complex to a biosecure lab able to handle samples containing select agents and other regulated pests at the level of security required for these agents and pests. This process will be completed in early 2005.

Impact:

The PDIDL now has the ability to identify pathogens rapidly using new molecular technologies and to network with other labs in this region and throughout the USA. Microscope images can be transmitted directly to other labs for collaboration over this system. The new upgrades not only provide additional security against an act of bio-terrorism, but also permit more effective surveys for destructive new pathogens now occurring in other parts of the USA that may find their way here. Protocols have already been developed and tested for several pathogens not occurring in Oklahoma using extracted DNA from such pathogens. Additional protocols are currently being developed for other pathogens on the Homeland Security List of Select Agents (Plant Pathogens). A mock scenario showed that Oklahoma and the PDIDL has in place the necessary protocols and expertise to detect and respond to a pest that threatens crop bio-security.

In 2004 newly developed real time protocols were used to survey for two pathogens of national importance that pose a threat for Oklahoma. These were *Xylella fastidiosa*, the cause of Pierce's Disease of grapevines in other grape producing states including Texas and Arkansas, and *Phytophthora ramorum*, the cause of the Sudden Oak Death epidemic in California, Oregon and Washington. Oklahoma was shown to be free of *X. fastidiosa* in surveyed vineyards. However, *P. ramorum* infested nursery material recently shipped from California was intercepted at a single Oklahoma nursery, destroyed, and subsequently shown to have been totally eradicated from that nursery. During 2004 the PDIDL also detected Africanized honey bees in Oklahoma for the first time. The lab has become the sole diagnostic center for processing samples of suspect honey bees using newly developed PCR methods to determine the extent of distribution of Africanized honey bees in Oklahoma. In addition, the PDIDL continues to work closely with ODAFF on providing

diagnoses for other insects of high concern to Oklahoma, i.e. pink hibiscus mealybug, Japanese beetle, and red imported fire ants.

Scope of Impact: Multi-state national, with funding from USDA-CREES, USDA-APHIS-PPQ, ODAFF

Funding: State, grant, Smith-Lever

Contact:

Sharon L. von Broembsen and Richard Grantham
Department of Entomology & Plant Pathology
127 Noble Research Center
Stillwater, OK 74078
Phone: 405-744-9960
Email: svonbro@okstate.edu

Key Theme: Diversified/Alternative Agriculture

Title: Extension Educational Programs for the Oklahoma Wine Grape Industry

Issue:

The Oklahoma grape industry has experienced a resurgence of interest and enthusiasm during the last four years. Interest has come from wineries, grape growers, and others, e.g. chambers of commerce, interested in economic development. Much of the total economic development potential comes from tourism and spin off sales associated with the wineries which tend to be located in smaller communities. Total wine sales in OK are near 2 million gallons per year. Potential exists for Oklahoma vineyards and wineries to increase market share by producing grapes, making and selling wines locally. The industry enjoys popular support from the legislature and the general population as an initiative in 2000 which revised state laws to put OK wineries in a better competitive position received over 70% approval from the people.

What Has Been Done:

In 2000 a team of Extension specialists was assembled to develop an educational program for Oklahoma grape producers. The core team consisted of specialists from Horticulture, Entomology and Plant Pathology. Key support has also been provided by specialists in soils, irrigation and agriculture economics who have assisted with instruction and contributed to development of educational materials.

As a result of this team effort the Oklahoma Grape Management Course has been designed and offered four times. The course meets seven times per year for a period of four hours. Area meetings for grape growers and county educators were held in southwest and northwest Oklahoma. Grape related articles have been added to ongoing newsletters related to fruit production, an Oklahoma Vineyard Management Guide has been drafted and budgets have been prepared to assist potential grape growers with decision making.

Demonstration/research projects have been initiated to secure reliable data on grape variety adaptability and pest management requirements in the various regions of Oklahoma. Competitive grant proposals have been successfully submitted to various funding agencies including Integrated Pest Management (Oklahoma minigrant program) and private foundations (Kerr Center for Sustainable Agriculture) to procure funds

Impact:

In the last four years OK grape acreage has increased from about 50 to over 300 and the number of licensed wineries has increased from about 4 to 30. Over 300 people, including 13 county extension educators, have taken the Oklahoma Grape Management Course its first four years. Over 80 persons are currently registered for the 2005 course. As a result of this educational program potential grape growers from 50 counties have learned about the economic potential of wine grapes, how to reduce environmental risk through proper variety selection, how to accurately scout for insects and diseases and how to install and manage a vineyard. Initial data have been collected from demonstration plantings on grape variety adaptability as well as insect and disease incidence at four locations in OK and results disseminated to growers.

Scope of Impact: State Specific; Integrated Research and Extension

Funding Sources: State; NGO; Smith-Lever

Contact:

Becky Carroll
Extension Assistant
Department of Horticulture and Landscape Architecture
360 Agricultural Hall
Stillwater, OK 74078
Phone: 405-744-6466
Email: becky.carroll@okstate.edu

Key Theme: Home Lawn and Gardening

Title: The Oklahoma Master Gardener Volunteer Program

Issue:

Rapid urban growth in many areas of the United States coupled with increased interest in the environment and home gardening have prompted an ever-increasing number of garden and landscape inquiries. Along with this interest, comes a multitude of gardening questions needing individual explanation and too few Extension staff members to answer each question. Many of these questions are seasonal in nature and are relatively easy to answer assuming that one has horticulture training.

What Has Been Done:

Oklahoma Master Gardeners are trained, supervised and recruited to: 1) improve overall efficiency in providing one-on-one service to the non-commercial horticulture clientele in the county, 2)

provide group learning and teaching activities for non-commercial clientele, 3) allow agents to develop proactive Extension programs, and 4) form a group of Extension volunteers to support additional consumer horticulture efforts.

Trainees participate in a 10 - 13 week course receiving between 40 - 56 hours of course work on subjects including: basic plant science, vegetables, fruits, nuts, ornamentals, lawns, diagnosing pest problems, soils, and other related topics. Upon completion of the training period, satisfactorily passing an exam on materials and topics covered, and donating between 40 - 56 hours of volunteer time to the Horticulture program, the trainees are certified and awarded the title of Oklahoma Master Gardener.

Examples of Master Gardener Volunteer activities include: staffing plant clinics to answer phone and walk-in questions, manning educational exhibits, maintaining demonstration gardens, community beautification projects, serving as 4-H hort leaders and judges, speaking at club/civic meetings, teaching horticulture activities at nursing homes, etc., assisting in horticulture mailings, newsletters, etc., and appearing on TV and radio.

Impact:

The service from the Master Gardener volunteer program has proven to be a highly popular means of extending the knowledge of the Oklahoma State University Cooperative Extension Service to the residents of Oklahoma. The Oklahoma Master Gardener Program now has 33 counties participating in the program as of 2003. Approximately 323 new Master Gardeners were trained during the 2002 training season. Close to 1,000 active Master Gardeners volunteered their time, contributing approximately 21,891 hours of volunteer service and reaching over 112,900 Oklahomans with as many as 600+ educational and community programs and activities being conducted in their communities in 2002. This translates to over \$363,000 in service that was donated by volunteers (wage rate of \$16.54/hour was used, which includes a 12% estimate of fringe benefits. This hourly rate is the assigned wage for nonagricultural workers in 2002 as published in the *Economic Report of the President* (2002 edition). The Independent Sector, an organization that “serves as a national forum to encourage giving, volunteering and not-for-profit initiative,” supplied this information).

Funding Source(s): State; Smith-Lever

Scope of Impact:

The Oklahoma Master Gardener volunteer program is “state specific;” however, continued training opportunities may be multi-state, regional or national.

Contact:

David Hillock
Dept. of Horticulture & Landscape Architecture
360 Ag Hall
Stillwater, OK 74075-6027
Phone: 405-744-5158
Email: hillock@okstate.edu

Title: *Oklahoma Gardening* Television Program

Issue:

Providing the public of Oklahoma with a source of relevant, practical and reliable home gardening information. The challenges of gardening in Oklahoma's unique climates demand knowledgeable assistance. *Oklahoma Gardening* is a rich source of horticultural information, transforming it's viewers into a population of garden-smart individuals.

What Has Been Done:

Oklahoma Gardening has been providing top quality programming for 30 consecutive years, receiving several broadcasting awards along the way. Last year it was voted the 7th favorite program on OETA, and came in as the top-ranked Oklahoma produced show. It has a weekly viewer ship of around 175,000. Each year, 40 new shows are recorded with the top 10-12 rebroadcast during the winter months.

Impact:

Letters, e-mails, and comments from trade show attendees and studio garden visitors, indicate the positive effect of the program on Oklahoma's gardening public. Enhanced quality of life is achieved through successful gardening experiences, including; nutritional home food production and preparation, creation of relaxing and aesthetically pleasing outdoor environments, cultivation of air-cleaning indoor plants, and conserved resources and environment through the use of appropriate materials and practices.

Scope of Impact: State specific, with some overlap into; AR., KS., TX., and MO.

Contact:

Steve Owens
Assistant Extension Specialist
Host, *Oklahoma Gardening*
Dept. of Hort. & L. A.
360 Agriculture Hall
Stillwater, OK 74078
Phone 405-744-5404
steve.owens@okstate.edu

Key Theme – Invasive Species

Title: Testing Wheat Produced in Oklahoma for the Presence of Karnal Bunt

Issue:

Karnal bunt (KB), which is caused by *Tilletia indica*, is a fungal disease of wheat that causes minor problems with the quality of flour milled from KB-infected wheat. However, presence of KB in wheat grain can cause significant problems if found in wheat because many of the countries to which wheat is exported from the U.S. have a zero tolerance for KB. Hence, wheat produced in

the U.S. must be tested for the presence of KB in order to obtain a phytosanitary certificate stating that the wheat was produced in an area not known to be infested with KB. This phytosanitary certificate satisfies the requirement of U.S. wheat trading partners and allows wheat produced in a state like Oklahoma to flow freely into the export market.

What Has Been Done:

During harvest, wheat grain is collected from elevators in about half of the counties of Oklahoma where at least 1 million bushels of wheat are produced. In the subsequent year, the other half of the counties are tested. Personnel from the Oklahoma Department of Agriculture, Food and Forestry collect these samples and deliver them to the Department of Entomology and Plant Pathology at Oklahoma State University. These grain samples are washed, with the resulting washing passed through specific sieves to isolate in a pellet all particles between 20-50 μ . This pellet is then suspended in liquid, spread onto microscope slides, and examined for the presence of KB spores. If suspect spores are found, the grain sample is examined for bunted kernels. If bunted kernels are found, the sample is forwarded to scientists with USDA-APHIS-PPQ for positive identification. Since 1996, wheat produced in Oklahoma has been tested for the presence of Karnal bunt.

Impact:

Since 1996, 1,614 samples have been tested with 60 being tested in 2004. Results from these tests are entered into a data base through the National Agriculture Pest Information System (NAPIS), and are used by the USDA-APHIS-PPQ to issue phytosanitary certificates that allow the wheat to move freely into the export market. Slightly more than half of the wheat produced in Oklahoma typically moves into the export market, so such testing is vital to continue to insure the free movement of this wheat.

Funding Source(s): Oklahoma Wheat Commission, state

Scope of Impact: State specific with national implications.

Contact:

Robert M. Hunger
Professor of Plant Pathology and Wheat Extension Pathologist
127 Noble Research Center
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-9958
Email: rmh@okstate.edu

Key Theme - Risk Management

Title: Providing Marketing Information and Education to Wheat Producers

Issue:

Wheat producers want market information and suggestions on how to sell their wheat and sources for obtaining the information are declining. Television, radio and newspapers have reduced the time and space available for agriculture market reports. Even if the reports are published, suggested marketing strategies are rarely given. About 50 percent of Oklahoma farm families have computers. Many producers now access market information on the internet.

What Has Been Done:

A “Crop Marketing and Risk Management” web site was created. The web site contains “Kim’s Soap Box,” “Market Analysis,” and “Risk Management Strategies” columns and “Market Monitor” videos that are updated weekly plus articles on risk management, wheat marketing and peanut marketing. “Kim’s Soap” contains thought provoking ideas and is used to get producers to think about or consider different approaches to marketing. “Market Analysis” is a weekly article that discusses what is happening in the market and what wheat prices are expected to do. “Risk Management Strategies” is a weekly article that discusses different marketing strategies and under what conditions each strategy might be used. The web site also contains Extension Facts and other research related publications

Impact:

During the first year, the web sit received over 11,000 hits, have received phone calls from across the nation and one from Canada requesting additional information.

Funding: Smith Lever

Scope of Impact: International

Contact:

Kim Anderson
Professor and OSU Cooperative Extension Crop Marketing Specialist
513 Ag Hall
Stillwater, OK 74078-6035
Phone: 405-744-6082
Email: anderso@okstate.edu

Key Theme – Small Farm Viability

Title: Cherokee Prairie Small Rancher Initiative

Issue:

There are over 1245 part-time producers with less than 50 acres in five counties in Northeast Oklahoma (Craig, Delaware, Mayes, Ottawa and Rogers). Due to the part-time nature of their farming operation a good source of timely, direct and clear information was hard for them to access. The personnel resources of money, land and labor committed to these part-time farms represent a significant economic resource to Northeast Oklahoma. One common factor these part-time farms have is soil type, climate and vegetative type known as the Cherokee Prairie Resource (CP).

What Has Been Done:

Eighteen different newsletters were mailed to 1,540 part-time producers in the five counties in Northeast Oklahoma. These producers were identified from tax exemption roles and soil test done for small producers. Four educational meetings were held reaching 465 part-time producers. Two of these were “Ranchers Night Out”, one was a ranch tour and the last one was an Oklahoma-Kansas Cattle Conference. In addition to the newsletters and educational meetings, a web site, news articles, sale barn inserts, and demonstration plots were also used to reach these important producers.

Impact:

With the assistance of Kathleen D. Kelsey in the Agricultural Education Department at OSU, a survey was developed and sent out to those part-time producers receiving the Cherokee Prairie newsletter. The following results were received:

“Because of the Cherokee Prairie Agricultural Project, now I”

- 78% Pay more attention to cow body condition before and after calving.
- 80% Adjust stocking rate or change fertilizer strategy.
- 75% Soil test to improve fertilizer decisions.
- 82% Pay more attention to herbicide selection, environmental conditions, and application timing.
- 76% Work toward a controlled breeding season.
- 74% Evaluate supplements for optimum reproduction and low costs.

Funding: Grand Gateway Economic Development Agency

Scope of Impact: Northeast Oklahoma, State Specific

Contact:

Bill Burton
Area Agricultural Economics Specialist
Muskogee Area Office
230 W. Okmulgee St., Suite A
Muskogee, OK 74401-7032
Phone: 918-686-7800
Email: burton@okstate.edu

CSREES Goal 2: A safe and secure food and fiber system.**Overview**

Oklahoma key program components contributing to this goal include: food safety, food preparations, food preservation, HACCP Training, and microbiological testing. During the year, 298 demonstrations, meetings and conferences were conducted under this goal. Over 6,211 participants attended these activities during the year. OCES personnel conducted an additional, 797 visits and consultations with these audiences. Mass media contacts totaled over 1.6 million.

Educational and service programming under this goal really fall into commercial categories and home/general public categories. Educational programs with commercial food processing, preparation, and retail sales make up much of our effort. The Oklahoma Food and Agricultural Product Center is a completely state-funded entity that is wholly integrated into the OCES mission in Oklahoma. The Center has conducted numerous HACCP training sessions for food processors in the state. This has resulted in many of these processors ability to develop and maintain acceptable HACCP plans to help them stay in business. The center is working closely with state and federal authorities working on microorganism food security problems. The Center also conducts training sessions for food related entrepreneurs trying to get into business or expand their businesses. Food safety laws and regulations are an important part of this training. The Center also provides educational programs such as the "Master Cannery Workshop". This program provides basic training in producing acidified and acid canned foods. Several of those attending these workshops have returned to the Center for additional business and processing assistance. Food service industry personnel in Tulsa have available to them a 12-hour food handlers' course. Local food codes require taking such a course and passing of a test. The OCES course is the only one with materials, classes, and testing also available in Spanish.

We have extended the initial work with extension educators training on biotechnology and bio-terrorism in relation to food safety. Educators have been trained as first-responders by the OCES Plant Disease and Insect Diagnostic Lab which is part of the Great Plains Diagnostic Network (GPDN), which includes nine states in the Great Plains region. The GPDN is one of five regions of the federally mandated National Plant Diagnostic Network.

The Oklahoma FoodSafe Program works primarily with consumers to increase the safety of the food supply. Statistically significant improvements in safe food handling practices observed among the 781 youth and 1,412 adult Oklahomans who participated in the "Healthy Living A-Z" Impact Program included: 1) 23% increase in hand washing, 2) 16% increase in washing fresh fruits and vegetables, and 3) 20% increase in using a separate cutting board for fruits and vegetables to avoid cross contamination.

The OCES conducts numerous nutritional programs. Most of these programs include food safety in selection and preparation of foods in the home. These nutrition programs are reported under CSREES goal 3. The OCES provides much training in the use and proper application of pesticides in food production. Again, most of these efforts are reported under CSREES goal 4. Finally, HACCP, food security and first responder training, and livestock meat quality programs often get reported under CSREES goal 1.

Positive progress was made in all Key Program Components listed under this goal in the Oklahoma Cooperative Extension Service 5-year plan of work. Total expenditures represented by programming and related support for this goal are approximately \$670 thousand with \$25 thousand from Smith Lever funds. About 6 professional and paraprofessional FTEs contributed to the goal last year. As noted above, due to the categorization of Key Themes by CSREES, closely related efforts in food safety also show up under goals 1, 3, and 4. Following are some example program impact statements arranged by CSREES Key Theme.

Impact Statements Goal 2

Key Theme – Food Handling

Title: Oklahoma FoodSafe Program

Issue:

The Centers for Disease Control estimates 76 million Americans get sick, 300,000 are hospitalized and 5,000 die each year from foodborne illness. Two to three percent of cases lead to secondary long-term illnesses such as reactive arthritis, kidney failure, or meningitis. Costs for lost productivity and health care are estimated at up to \$9.4 billion annually. Keeping food safe from farm to table requires a continuous chain of responsibility for the safety of the food. If that chain is broken at any point, foodborne illness can result. Today because of lack of knowledge and/or failure to practice safe handling procedures or to make safe food choices and decisions, the weak link in the chain is often the consumer.

What Has Been Done:

The Oklahoma FoodSafe Program works primarily with consumers to increase the safety of the food supply. By increasing their awareness and knowledge of safe food behavior and choices and by teaching them to take responsibility for the safety of their food they can reduce their risk of foodborne illness. The program has offered food safety education in a variety of projects including the Oklahoma Healthy Living A-Z Programs for adults and children, leader training for Family and Community Educators, a food safety campaign for the elderly called “Food Safety for Seniors,” and the Oklahoma Gardening public television program.

Impact:

Statistically significant improvements in safe food handling practices observed among the 781 youth and 1,412 adult Oklahomans who participated in the "Healthy Living A-Z" Impact Program included:

- 23% increase in hand washing
- 16% increase in washing fresh fruits and vegetables
- 20% increase in using a separate cutting board for fruits and vegetables to avoid cross contamination

Youth that participated in the “Healthy Living Program” were exposed to the primary food safety message that encouraged children to always check for a brown color throughout their hamburgers before taking a bite. Of the 63 children who completed the program forty-three percent increased their score when asked if they checked to see if their hamburger was brown all the way through before eating.

Twenty-two county educators were trained on the “Food Safety for Seniors” curriculum. A summary of results of the 258 evaluations returned by seniors that attended lessons showed:

- Most participants (55.2% of 58) of “Thawing Meat Safely” believed they thawed meat safely prior to the lesson. Of those that did not (44.8%), 42.3% indicated they definitely planned to change and 38.5% probably would to a safer method of thawing.

- Most participants (72.2% of 126) of “Storing Leftovers” believed they handled leftovers safely prior to the lesson. Of those that did not, 54.3% definitely planned to change the way they handled leftovers to reduce their risk of foodborne illness; 28.6% probably would change; 14.3% would think about changing their handling of leftovers; and 2.9% planned no changes.
- More than half (60.0% of 74) of participants of “Cooling Hot Foods” found the need to change the way they cool food to reduce the risk of foodborne illness. Of those, 61.4% definitely planned to change the way they cool food after attending the lesson; 29.5% indicated they probably would change; and 9.0% would think about making a change.

Other educational projects have targeted raising awareness of food safety and increasing a sense of personal responsibility for the safety of food selected and eaten. Substantial numbers of Oklahomans have been reached through such projects as the “Oklahoma Gardening” public television kitchen segments on safe food preservation and preparation reach 220,000-250,000 viewers per weekend for each of its 20 to 30 annual segments.

Funding Source(s): State

Scope of Impact: State Specific

Contact:

Barbara Brown
 Assistant Professor and OSU Cooperative Extension Food Specialist
 308 HES
 Oklahoma State University
 Stillwater, OK 74078
 Phone: 405-744-6824
 Email: bbrown@okstate.edu

CSREES Goal 3: A healthy, well-nourished population

Overview

Oklahoma key program components contributing to this goal include: nutrition, health and wellness, and community nutrition education programs. The OCES 5-year plan of work includes key program components under other goals (particularly goal 5) that CSREES chose to include as themes under this goal (goal 3), such as, health care-community health care. Thus some reporting discontinuities may exist between what is reported in the overview and under key themes. During the year, 2,661 demonstrations, meetings and conferences were conducted under this goal. OCES personnel conducted an additional, 5,951 visits and consultations. All these activities resulted in reaching more than 94,871 participants during the year. Approximately 27.7% contacts were with non-white audiences compared to 25.9% in the general population of Oklahoma. The primary non-white audiences were female/Native American and female/Black – constituting approximately 8.2% and 5.5% respectively of those reached.

Healthy living programs continue as a major focus of extension education in Oklahoma. These programs target dietary and health practices designed to reduce diet related conditions such as: heart disease, stroke, diabetes, and others. These programs touch a wide variety of clientele. Surveys have shown significant improvement in intake of fruits and vegetables, as well as improved safe handling of foods. The OCES community nutrition education programs (CNEP) reach a large and diverse audience across the state. These programs include: EFNEP Families/Nutrition Education, EFNEP 4-H Youth/Nutrition Education, EFNEP Interagency Cooperation, and the ONE Program. For example, in addition to a large number of group educational meetings, professional and paraprofessionals conducted thousands of visits and consultations with clients concerning nutrition. These programs address the full spectrum of nutrition education and information, including: food choices, selection, preparation, healthy diets, prenatal, child and adult nutrition, nutrition related illnesses, food safety, food costs, community gleaning, community nutrition, etc. A research study conducted during 2000 found that Oklahoma realizes a 36% gain on their investment in CNEP. The gains primarily come from decreases in nutrition-related illnesses resulting in lower medical costs and an increase in worker productivity (fewer sick days).

In Oklahoma, 56% of adults are overweight and 21.9% are obese. The proportion of overweight children has tripled since 1980. In Oklahoma, 13% of children between ages 6 and 11 are obese. Healthy Kids-Healthy Futures was a two-component, hands-on program addressing issues relating to different aspects of healthy lifestyle. The goal is to empower youth to make healthy choices in their everyday living that will attribute to a lifetime of healthy living. Pre and Posting in two of the counties where this program was conducted showed significant learning on the part of 3rd and 5th graders with respect to key principles.

In Oklahoma during fiscal year 2004, 12,347 allegations of child abuse and neglect were confirmed, half of which were under age six. An average of 37 children die due to maltreatment each year, about 75% of whom did not live to their second birthday. Most abuse and neglect occurs in the hands of a child's own parents. Research indicates that home visiting and parent education and support services to parents around the time of a baby's birth and in early childhood reduces the risk of child abuse, and contributes to positive, healthy childrearing practices and family functioning. OCES Healthy Family programs were conducted around the state. In a three of the counties, special state and local grant funding in excess of \$350,000 helped expand the programs and reach more families.

Family Consumer Scientists also have program targeting other groups like the Medicare Touch and Dining with Diabetes programs designed to assist particular high-risk groups with issues. A program area of rapidly growing emphasis for OCES has been rural health care. Medical facilities and services are vital to the quality of life of rural residents and the survivability of rural communities. Numerous communities have worked with OCES to maintain health care or add to health care facilities. These programs are closely related to the community health services and infrastructure programs discussed under goal 5. Together they are helping many rural hospitals find a means to remain open and to contribute to the health and economy of these communities.

Positive progress was made in all Key Program Components listed under this goal in the Oklahoma Cooperative Extension Service 5-year plan of work. Several of these programs (particularly those mentioned above) have grown over the past few years. Total expenditures represented by programming and related support for this goal are approximately \$3.6 million with \$1.4 million from Smith Lever and other federal funds. About 47 professional and paraprofessional FTEs contributed to the goal last year. Following are some example program impact statements arranged by CSREES Key Theme.

Impact Statements Goal 3

Goal 3 – Key Themes

Key Theme – Human Health

Title: Healthy Kids – Healthy Futures

Issue:

In Oklahoma, 56% of adults are overweight and 21.9% are obese. The proportion of overweight children has tripled since 1980. In Oklahoma, 13% of children between ages 6 and 11 are obese.¹ Many studies now show that adult afflictions like heart disease and high blood pressure clearly have their origins in early children. Washita and Custer Counties' (rural communities) alarming rate of deaths due to heart disease reflect the critical need to educate our youth. Washita County's heart disease death rate is 13% higher than the state rate and 29.15% higher than the national rate. Custer County's heart disease rate is 24% higher than the state rate and 41.86% higher than the national rate. In addition, the Oklahoma Health Department projects that by 2008, the combined direct and indirect financial costs of treating Oklahoma's overweight-obesity epidemic will surpass \$1.3 billion.²

What Has Been Done:

Obesity relating to unhealthy lifestyles in Washita County and Custer County (Oklahoma) is rapidly becoming a public care crisis. Therefore, our goal was to empower youth to make healthy choices in their everyday living that will attribute to a lifetime of healthy living. Healthy Kids-Healthy Futures was a two-component, hands-on program addressing issues relating to different aspects of healthy lifestyle. The first component was *Kids-Healthy Futures Day Camps, Garden Mania*, held in each county reaching approximately 60 youth focusing on the health benefits of gardening and physical activity of summer living. Participants prepared healthy snacks for lunch. The second component was a five-session program for all third grade students in Washita and Custer Counties addressing healthy and active living reaching approximately 500 students. Students also enjoy hands-on cooking and fitness activities.

Impact:

All third grade students took a pretest and posttest as part of the 5-session *Healthy Kids-Healthy Future Program*. All 3rd grade students participated regardless of individual challenges (mental or physical). The results are as follows:

- 94% of the student in 3rd grade participating in the Healthy Kids-Healthy Futures program gained knowledge in Nutrition and Physical Activity.
- 6% of the participants scored a perfect score on the pretest and posttest.
- 22% of the students answered one more question right on posttest than pretest.
- 38% of the students answered two more question right on posttest than pretest.
- 14% of the students answered three more question right on posttest than pretest.
- 10% of the students answered four more question right on posttest than pretest.
- 3% of the students answered 5 more question right on posttest than pretest.

Funding Sources: Grant (Kraft Foods and Cargill), state, Smith-Lever

Primary Contact:

Radonna Sawatzky, Custer County Extension Educator
 Box 170, Courthouse
 Arapaho, OK 73620-0170
 Phone: 580-323-2291
 Email: radonna@okstate.edu

Title: HEALTHY FAMILIES: Support & Education for Families with Infants & Young Children

Issue:

In Oklahoma during fiscal year 2004, 12,347 allegations of child abuse and neglect were confirmed, half of which were under age six. An average of 37 children die due to maltreatment each year, about 75% of whom did not live to their second birthday. Most abuse and neglect occurs in the hands of a child's own parents. Further, the most active and significantly influenced brain development period is birth to age 3. Research indicates that home visiting and parent education and support services to parents around the time of a baby's birth and in early childhood reduces the risk of child abuse, and contributes to positive, healthy childrearing practices and family functioning.

What Has Been Done:

OCES implemented home visitation parent education programs in 1991 and launched the state's first Healthy Families America site in 1995. Program goals are to assess family strengths and needs, enhance family functioning, promote positive parent-child interaction, and promote healthy childhood growth and development. Families may enroll during pregnancy or around the time of a baby's birth, and may continue until the child is age five. Participation is voluntary. Services include home visitation, center-based education and support, and referrals to health care providers and other community resources.

In FY 2004, OCES Healthy Families programs served three counties: Canadian, Delaware, and Texas. A Parents as Teachers program was also implemented in Texas County. During the year, 132 families with 139 children were provided 1,616 home visits and over 100 parent education and support group sessions. FY 2004 contracts totaling \$317,755 were received from the Oklahoma State Department of Health, Child Abuse Prevention Fund, as well as a \$35,000

subcontract with Guymon Public Schools through a grant from the Oklahoma State Department of Education. Collaboration with other community agencies is emphasized to better utilize scarce resources and provide a comprehensive array of services to effectively meet families' needs.

Participant surveys conducted during the year indicated a high level of satisfaction with the helpfulness, service quality, and increased knowledge received. Previous evaluation of the programs suggests that first-time parents made significant increases in parenting knowledge, child development knowledge, and home safety practices, and the rate of second pregnancies for adolescent parents was 5% compared to the national rate of 25%. Other studies on Healthy Families programs suggest that enrolled families are 1/3 to 1/2 as likely to maltreat their children as comparable families not enrolled. Evaluations of Parents as Teachers program participants have shown reliable gains in parent knowledge and in children's cognitive and motor development. Research suggests that for every dollar spent on such prevention efforts, at least two dollars are saved on services such as health and mental health care, foster care, child welfare, juvenile facilities and special education.

Scope of Impact: State Specific

Funding: State, Smith-Lever

Contact:

Deborah L. Richardson, Child Development Assistant State Specialist
Oklahoma Cooperative Extension Service, Family & Consumer Sciences
Oklahoma State University
333 Human Environmental Sciences Building
Stillwater, OK 74078-6111
Phone: 405-744-6231
Email: debbie.richardson@okstate.edu

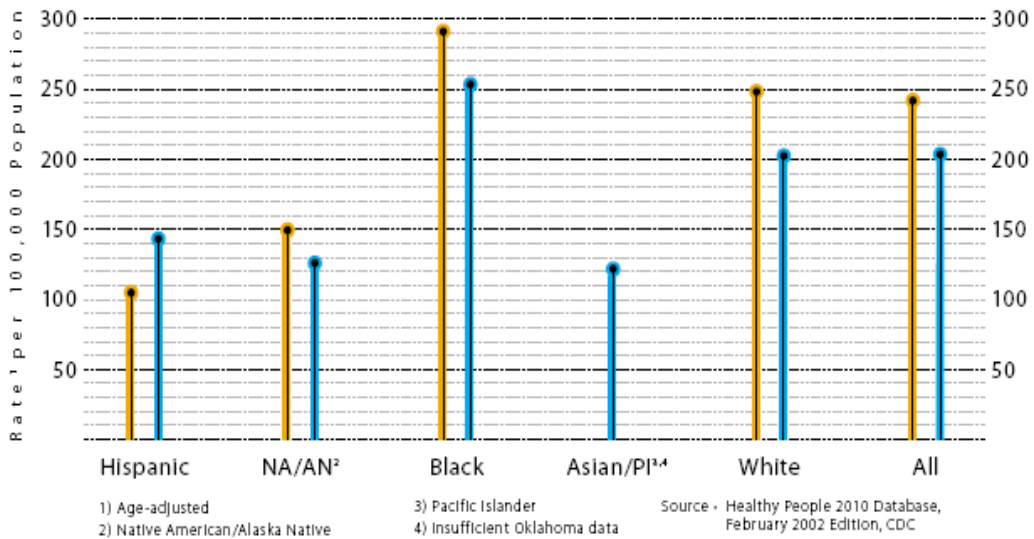
Key Theme – Human Nutrition

Title: Community Nutrition Education Programs (CNEP)

Issue:

Behavioral chronic disease risk factors are of concern for Oklahoma's low income families and youth. Behavioral Risk Factor Surveillance System (BRFSS) data from 2002 indicate that those who are living in poverty are in desperate need of nutrition education. The consequences of poor dietary quality, lack of physical activity and being overweight or obese are staggering. Oklahoma's rates for heart disease are higher than the national average, especially for our Black, White, and Native American populations as noted in Figure 1 below.

Figure 1



What Has Been Done:

Through the CNEP program, OCES has leveraged state monies to bring over \$3 million (FY04) in federal nutrition education program funds. This funding supports 109 jobs in 37 Oklahoma counties. CNEP is a voluntary program for participants of federal food assistance programs. Program participants learn to feed their families in order to promote good health and to plan and budget their food dollars so their family won't go hungry at the end of the month. In addition, healthy eating habits and food safety skills are taught to primary school students in participating counties where 50% or more of the school population receive free or reduced meals.

Impact:

CNEP has had a positive impact on the health and wellness of 5,022 low-income Oklahoma families during FY04. Over 91% of graduates demonstrate a positive change towards a healthy diet. Graduates increased their consumption of fruits, vegetables, and calcium/dairy foods. In addition, 45% of graduates less often ran out of food by the end of the month and 35% report that their children ate breakfast more often.

Through CNEP's youth component 10,475 children have learned and practiced skills in selecting low-cost healthy foods and safe habits for handling foods. Approximately 48% of participating youth were minorities. The children participated in a total of 2,214 hours of hands-on learning and activities. As a result, 18% of evaluated youth increased their ability to select nutritious foods and 12% improved their practices of handling foods safely to prevent food borne illness.

Research in Oklahoma determined that the state saves \$1.36 in future health care cost for every \$1.00 spent on this program. The gain comes from the decrease in nutrition related illnesses, thereby reducing medical costs and an increase in worker productivity (less time away from work due to illness).

Scope of Impact: State Specific

Source of Funding: Federal

Contact:

Debra Greene-Garrard, MS
CNEP State Coordinator
333 HES
Stillwater, OK 74078-6111
405-744-7186

debra.greene-garrard@okstate.edu

Stephany Parker, PhD
CNEP Nutrition Education Specialist
333 HES
Stillwater, OK 74078-6111
405-744-7186

steph.parker@okstate.edu

CNEP website: <http://www.fcs.okstate.edu/cnep>

Title: Healthy Living A-Z

Issue:

To Increase fruit and vegetable intake and improve safe fruit and vegetable food handling practices to lower disease risk.

Diet related health conditions cost society an estimated \$400 billion annually. This includes health expenditures and lost productivity resulting from illness and death. It is estimated that improved dietary behaviors might prevent at least 20% of the annual deaths from diet related health conditions. Encouraging increased fruit and vegetable consumption is a cost-effective approach to lowering disease risk and reducing health care costs. Eating plenty of fruits and vegetables can help reduce the risk of developing many diet related health conditions including heart disease, stroke, type 2 diabetes, and some types of cancer. However, according to the Centers for Disease Control 80% of Oklahomans eat fewer than 5 fruit and vegetable servings per day. Added to the problem that Oklahomans are not eating enough fruits and vegetables are reports of occasional outbreaks of foodborne disease associated with fruits and vegetables. These reports threaten to overshadow the important dietary and medical role that fruits and vegetables play in ensuring good health. According to the Centers for Disease Control 20% of all traceable foodborne disease outbreaks result from improper handling in the home including poor sanitation, improper hygiene and cross contamination.

What Has Been Done:

Oklahoma Cooperative Extension Service “Healthy Living A-Z” Impact Program educates Oklahoman youth and adults on the 5-A-Day message (fruit and vegetable intake) and safe food handling techniques. The goal of the “Healthy Living A-Z” Impact Program is to encourage more

Oklahomans, both youth and adults, to increase fruit and vegetable intake and practice safe fruit and vegetable food handling techniques thereby reducing the risk of diet related diseases.

Impact:

The “Healthy Living A-Z” Impact Program has reached 2,193 Oklahomans, 781 youth and 1,412 adults. Important dietary improvements were observed among Oklahomans, both youth and adults, who participated in the "Healthy Living A-Z" Impact Program including a statistically significant:

Increase in fruit intake 25% increase in consuming the recommended 2 fruit servings per day

Average number of fruit servings increased from 1.4 to 2.2 servings per day

Increase in vegetable intake 19% increase in consuming the recommended 3 vegetable servings per day

Average number of vegetable servings increased from 1.8 to 2.6 servings per day

In addition, statistically significant improvements in safe food handling practices were observed among Oklahomans, both youth and adults, who participated in the "Healthy Living A-Z" Impact Program including:

23% Increase in hand washing

16% Increase in washing fresh fruits and vegetables

20% Increase in using a separate cutting board for fruits and vegetables to avoid cross contamination

Statistically significant increases in eating new fruits or vegetables and trying new fruit or vegetable preparation methods were observed among Oklahomans, both youth and adults, who participated in the “Healthy Living A-Z Impact Program including:

26% Increase in “eating a new fruit or vegetable in the last two weeks

29% Increase in “preparing fruits or vegetables in a new way in the last two weeks

These outcomes represent improvements in health status and decreased risk for heart disease, stroke, diabetes, and certain types of cancer.

Funding Source(s): State; Smith-Lever

Scope of Impact: State Specific

Contact:

Janice Hermann, Nutrition Ed Specialist

Coop Ext.-FCS

315 HES

Oklahoma State University

Stillwater, OK 74078-6141

Phone: 405-744-6824

Email: janice.hermann@okstate.edu

CSREES Goal 4: Greater harmony between agriculture and the environment

Overview

Oklahoma key program components contributing to this goal include: Integrated Pest Management (IPM), water quality, animal waste management, pesticide applicator training, pesticide impact assessment, natural resource stewardship, and sustainable agriculture. This goal contains many programs that are highly integrated with programs included in other goals, particularly goals 1 and 2. In the Oklahoma 5-year plan of work, IPM programs, for example, were included in goal 1, yet most are here-in reported under this goal because of the theme designations established by CSREES. During the year, 431 demonstrations, meetings, and conferences were conducted under this goal. These activities were attended by 9,385 participants during the year. OCES personnel conducted 1,674 visits and consultations related to this goal. Special efforts were begun this year to reach more minority producers resulting in 20.1% of the participants representing minorities.

Integrated pest management and related pest management teams exist for wheat, alfalfa, soybeans and peanuts, greenhouse and horticulture products, pecans, cotton, grapes, and vegetables. These teams are very active and many of their programs are truly integrated between production and pest management practices. A related emphasis area is in pest applicator education and training. These areas work together on many programs. Another highlight set of key programs under this goal are those programs in natural resource stewardship. Natural resource management programs are also reported under this goal.

Since 1997, the Pecan IPM Team has diligently strived to develop, refine and expand an educational opportunity for growers, extension educators and industry personnel. The Pecan Short Course has continued to build on the previous year's success stories to reach and even challenge the growers of Oklahoma in adopting IPM principles. Over the past five years the pecan IPM team has educated and trained nearly 300 growers, extension educators and homeowners on best management practices related to pecan. The primary direction of these classes was centered on totally integrating the separate disciplines into a concise, hands-on program of instruction for persons interested in pecan production. In a recent survey of Oklahoma pecan producers, 32% stated they used IPM techniques to manage insect and disease pests, specifically trapping for pecan weevil, scouting for pecan casebearer, and using weather forecasting models to determine optimal control timings for pecan casebearer and for pecan scab. To further expand the opportunity for participants to learn on their own, the Pecan Pest Management Home Page (<http://www.hortla.okstate.edu/pecan/>) was developed on the Internet and linked directly to advanced forecasting models for anticipating management decisions concerning pecan scab and pecan nut casebearer. A new on-line Pecan e-Learning course was developed and made available to pecan producers in 2004. This interactive course includes every aspect of pecan production, from site selection to storing the final product, with extensive pictures and management information on all pests as well as the beneficials. Short quizzes at the end of each section enhance learning as the reader proceeds through the self-guided site.

As mentioned, IPM programs comprise a significant role in education and information provided each year. The Oklahoma Boll Weevil Eradication Program is in its 7th year. The number of acres treated has steadily declined since the inception of the eradication program, from 1.4 million acres

(sprayed 10.2 times per year) in 1998 to 11,120 acres (sprayed less than once per year) in 2004. In comparison to other states, Oklahoma is right on schedule with 99.9975% of cotton fields without weevils. The Areawide Pest Management for Wheat project is in its third year, and is a cooperative effort across 6 states (OK, TX, CO, WY, NE, KS); more information is available at <http://www.pswcrl.ars.usda.gov/awpm.htm>. The Greenbug Pest Management Decision Support System is online at <http://www.pswcrl.ars.usda.gov/gbweb/index.htm>. It contains extensive information on aphid ID, state-specific economic threshold determinations, labeled insecticides, and natural enemies. Also recently developed (and available at this same site) is the Glance 'N Go sequential sampling program. This sampling strategy is based on a presence/absence method of determining aphid-infested tillers, which is a significant improvement over the previous sampling method of counting aphids. Economic thresholds are determined in advance, and specific for fall or spring winter wheat; a producer would need to sample no more than 90 tillers to make a treatment decision. This sampling protocol now incorporates specific rates of parasitism as well, to further assist producers on effectively and economically controlled greenbug on wheat. For each of the past six years, another IPM program, Statewide Alfalfa Email Advisory, has helped to reduce the number of insecticide applications for weevils and aphids on alfalfa from 2.0 to less than 1.1 annually. This results in a \$4.1 million cost saving to farmers and a 40% reduction in pesticide applied. Ecosystem restoration of native prairies, shrublands and forests was begun 16 years ago. Through education and demonstration on application of prescribe fire, Extension has increased the number of acres burned (prescribed) to approximately over 1.5 million acres improving water quality, habitat for several declining species and economically important species and beef cattle. This has resulted in improved habitat for two endangered species and several economically important species. In the last six years, eleven prescribed burn associations made up of ranchers have formed to facilitate restoration. In addition, municipal governments have begun to endorse this program and have begun to implement the "Firewise Program" to reduce wildland fuel as they try to prevent loss of life and property from wildfires in the wildland-urban interface.

Pesticide Applicator Education efforts resulted in over 2,500 applicators taught proper pesticide delivery methods. Education also helped reduce the amount of phosphide fumigants used while improving the safety of their use. Education for Oklahoma Department of Transportation Pesticide Applicators resulted in a 74.6% reduction in the use of atrazine in seven years as well as a cost saving for state and local governments. Total roadside acres treated by any pesticide have been reduced by 24% over the last five years.

Poultry Waste Management Education provided over 60 hours of education resulting in over 1,210 poultry producers and waste handlers receiving at least three hours of continuing education to maintain certification in waste management in 2004 (in addition to the 81 applicators and new growers that received the nine-hour initial training). This certification is mandatory for producers to continue in business. One result of the education is that soil nutrient testing and litter nutrient testing has increased 79%. The number of poultry producers keeping litter application records has increased from 34% in 1997 to over 92% and those using litter storage facilities tripled since the education programs began four years ago. Examples of a broad water quality education and pesticide education programs reaching underserved audiences, suburban and urban audiences are also reported in this goal in the statements to follow.

Positive progress was made in all Key Program Components listed under this goal in the Oklahoma Cooperative Extension Service 5-year plan of work. Total expenditures represented by programming and related support for this goal are approximately \$2.5 million with \$1.2 million from Smith Lever funds. About 18 professional and paraprofessional FTEs contributed to the goal last year. Following are some example program impact statements arranged by CSREES Key Theme.

Impact Statements Goal 4

Key Theme – Integrated Pest Management

Title: IPM Helps Oklahoma Landowners Fight Invasive Thistles

Issue:

Musk thistle (*Carduus nutans* L) was introduced into the eastern seaboard area of the US around 1853. Since its introduction, it has become a weed of considerable economic importance, especially in pasturelands. It reduces forage yields and forage quality by competing with the desirable forage plants for water, soil nutrients, and light. Musk thistle was first identified in Oklahoma in 1944, and by the end of 2001, 62 counties in Oklahoma reported musk thistle infestations. Infestations of musk thistle in improved pastures cause significant economic losses in Oklahoma. In 1998, Oklahoma legislators passed a law designating musk thistle, along with scotch and Canada thistles, as noxious weeds in all counties of the state. Based on a 1995 pasture survey, average acreage of improved pasture for each producer in Oklahoma ranged from 40 to 160, depending on location in the state. The average cost of controlling musk thistles for 10 years using herbicides would be \$5,200 per producer. There are about 7.1 million acres of improved pastures in Oklahoma. Thus, the statewide cost of controlling musk thistle with herbicides for 10 years, if all improved pastures were infested, would be \$461,500,000.

What Has Been Done:

An Oklahoma IPM musk thistle control program was developed in the early 1990s and has been implemented statewide through cooperative efforts of researchers, Extension personnel, and landowners. This integrated program focuses on increasing public awareness of the problem, development of educational information, demonstrating various control options, and introducing new biological control agents. Numerous demonstration and educational meetings were conducted in 2004 to landowners and NRCS employees. Extension educators and landowners collected approximately 63,050 musk thistle head weevils in Alfalfa, Craig, Garfield, Grant, Kay, and Okfuskee Counties in the Spring of 2004; these were released into 19 counties, primarily in the western portion of the state. In addition, 3,000 rosette weevils were also collected and released. Because of repeated annual releases in the north central portion of the state, we were able to sponsor weevil collections at these sites, decreasing travel time for western landowners. To date, this program released 646,550 musk thistle head weevils across the state. Detailed establishment and impact of the thistle head weevil and rosette weevil in Oklahoma were documented in a Masters thesis published in 2001, and one paper has been published in the scientific journal *American Entomologist*. A Web site was developed and maintained for OCES use, at <http://ipm.okstate.edu/ipm/weeds/muskthistle.html>; this site contains downloadable

versions of current fact sheets and reports, PowerPoint presentations, and current information on thistle round-up activities (such as maps, directions, what to bring, etc.). PowerPoint presentations (as slide sets) on integrated management of thistle are available in each District office, to assist county and area Extension educators to conduct local programming on thistle management. A fact sheet on the management of invasive thistles (F-7318), including musk thistle, is available to both OCES and landowners. A poster on invasive weed identification and management was developed and used at several Extension workshops. The following publications were distributed in 2004: a set of instructions (with color pictures) to accompany weevil release cups, a brochure on thistle management throughout the year, the fact sheet, and “weevil cards,” constructed of actual rosette and head weevils. IPM, Water Quality, NRCS, and the state Dept. of Agriculture continued to distribute the durable metal signs to designate where weevils were released, which was produced last year. As in 2002, one sign was given to participating landowners free of charge, with additional signs available for purchase.

Impact:

Landowners in NE Oklahoma have noted from 80% to 95 % decrease in number of musk thistle plants in areas where they are using an integrated approach that includes use of the musk thistle weevils. Head weevils were found on over 80% of the musk thistles checked in northeastern Oklahoma. Many landowners became concerned about controlling musk thistle after the 1998 “Thistle Law.” Significant cost saving is possible when musk thistle weevils are integrated into musk thistle management systems. Spraying of pastures could be phased out after a couple of years and no annual border spraying would be required. Cost associated with an integrated approach using weevils would be \$1,600 for spraying and \$200 associated with trips to collect 500 weevils (though Extension educators have collected weevils and provided them at no cost to many producers). This represents an average savings of at least \$3,400 per producer over the first 10 years. In addition, if the typical landowner applies 1 lb active ingredient of herbicides per acre annually, biological control has decreased the amount of herbicides applied to the environment by 7.1 million lbs per year. By making landowners aware of damaging effects of musk thistle, it is expected that they will become more involved in control and preventing spread of all invasive weeds.

Funding: Smith Lever; State

Scope of Impact: State Specific

Contacts

Patricia C. Bolin, Interim IPM Coordinator
Department of Entomology and Plant Pathology
127 NRC
Stillwater, OK 74078
Phone: 405-744-9420
Email: bolinp@okstate.edu

Case Medlin, Extension Weed Specialist
Department of Plant and Soil Sciences
368 Ag Hall

Stillwater, OK 74078
Phone: 405-744-9588
Email: mcase@okstate.edu

Title: Integrated Pest Management of Greenbugs In Wheat

Issue:

Oklahoma farmers grow more than 6 million acres of winter wheat each year, making Oklahoma the fourth largest wheat producer in the United States. Cereal aphids such as greenbug and bird cherry-oat aphid are major, but sporadic pests of wheat that can cause significant reductions in yield through direct feeding and by transmission of the virus that causes Barley Yellow Dwarf disease. In 2001-02, more than 700,000 acres of wheat were treated for greenbug infestations, costing producers an estimated \$5.6 million. Because of narrow profit margins, producers must make informed decisions on the necessity of controlling aphid populations. Correct decisions, using accurate tools for aphid population assessment, can prevent costly yield losses from occurring due to damaging greenbug infestations and increase profitability of wheat production. Eliminating unnecessary insecticide applications can preserve profitability while also enhancing environmental quality.

What Has Been Done:

A sampling tool, called “*Glance N’ Go*”, based upon research conducted in over 100 wheat fields, was developed in 2001 to provide wheat producers/crop consultants with an accurate, easy-to-use, sampling program for greenbugs. This system was improved this past year to include the simultaneous assessment of natural enemy activity as part of the decision-making process. The new system was presented to over 100 Certified Crop Advisors at a CCA workshop. The *Greenbug Decision Support Expert System*, a computer-based expert system was developed in 2002 and placed on the Department of Entomology and Plant Pathology’s web site at <http://www.pswcrl.ars.usda.gov/gbweb/index.htm> It has also been placed on the Oklahoma Ag Weather site at <http://agweather.mesonet.org/> It has continually been modified to be more accessible and easy to use. The user can estimate an economic threshold and select and print the appropriate set of “Glance ‘N Go” sampling forms for immediate use in the field.

Impact:

Preliminary evaluations of “Glance ‘N Go” suggest that it can reduce sampling time in wheat by 30% over currently recommended methods while providing accurate estimates of aphid density. Over the past year, eight county extension agents received an in-field training on the use of “Glance ‘N Go” sampling using the new form that evaluates natural enemy activity. Current results suggest that it a sampler will spend an average of 3.5 minutes in a field to make a decision. A decision to treat or not treat required the inspection of an average of 15 stems per field. This data will be summarized during the next year.

Funding Source(s): State; Smith-Lever

Scope of Impact: State Specific; Integrated Research and Extension

Contact:

Dr. Tom A. Royer
127 NRC
Oklahoma State University
Stillwater, OK 74078
Phone: (405) 744-5531
Email: rtom@okstate.edu

Title: Providing Vital Entomological and Production Information to Enhance Cotton Insect Control Decisions in Oklahoma**Issue:**

A statewide network highlighting Extension Entomology activities has evolved to provide timely information to the cotton industry. Keeping agri-business, consultants, and cotton producers informed of insect pest trends (surveillance), control strategies, applied entomological research results (local and regional), and growing degree accumulations (collected by Mesonet, Oklahoma's statewide, automated weather system) throughout the growing season helps fine-tune management strategies unique to each production region of the State – Southwest, West Central, Northern and the Panhandle. Adjusting control strategies to individual production schemes reduces environmental concerns while increasing profitability through efficient insect control.

What Has Been Done:

The challenge is to keep pace with the expanding cotton acreage across the state. To help meet this need, the Cotton Sentry (a weekly insect newsletter) is available in two formats – electronic and mail. It is delivered to interested persons throughout Oklahoma, Kansas, and Texas. Current entomological information and past Cotton Sentry issues are available at www.osu.altus.ok.us. Annually a Southwest Oklahoma Entomology Report is published highlighting entomological activities. Key field surveys are also conducted to determine population trends and pest status across the state. Bollgard™ technology (transgenic cotton) has been the focus of the applied research conducted. Regional turn-row tour and scouting workshops are held at key points throughout the growing season for hands-on training of scouting procedures and plant mapping techniques to enhance producers' and consultants' knowledge of IPM strategies.

Impact:

This educational network continues to provide key entomological information strengthening the foundation for cotton IPM across the state. The Cotton Sentry subscription list has steadily increased since its conception in 1990. In 2004, 80% of the subscribers (171) received the Cotton Sentry electronically compared to 20% of the subscribers (42) preferring the mail edition. Reducing insecticide usage is extremely difficult with an active boll weevil eradication program underway. However with the introduction Bollgard™ technology in 1996, insecticide applications have dropped sharply. A consultant's survey conducted in the fall of 1999 revealed that conventional cotton managed the same as Bollgard™ cotton received 3.7 more insecticide applications per season between 1996 and 1999. Bollgard™ cotton continues to be very popular in Oklahoma. Bt cotton represented 51% of the cotton acreage (or approximately 102,752 acres) in 2004. Growing Bollgard™ varieties was worth \$116.17 per acre in 2004. Since its

introduction in 1996, this research indicates that the value of investing in Bt transgenic technology between 1997 – 2004 was \$ 62.95 per acre (weighted average) or \$27,418,753 (Bollgard™ acreage = 435,564 acres for 9 years).

Contact:

Dr. Miles Karner
Area Ext. Entomology Specialist
Altus Area Office
16721 US Highway
Altus, OK 73521-7914
Phone: 580-482-8880
Email: karner@okstate.edu

Key Theme – Natural Resources Management

Title: Ecosystem Restoration of Native Prairies, Shrublands, and Forests

Subtitle: Wildland Fuel Reduction

Issue:

Areas of rural-urban interface have become increasingly subject to fires due to natural fuel development. Through OCES education programs, local fire departments and governments have become aware of this dangerous and costly situation. Municipal governments and rural fire departments need informational materials and demonstration areas for public education and application of Fire Wise principles.

What Has Been Done:

One demonstration site was constructed on State School Land in cooperation with the Oklahoma Department of Agriculture, Food, and Forestry; the Commissioners of the Land Office; the Payne County Conservation District; City of Stillwater, and the USDA Natural Resources Conservation Service. The demonstration site consisted of a 2,640 ft. by 100 ft. firebreak constructed on the south side of the Noddingham housing addition southwest of Stillwater. The purpose of the firebreak is to protect homes from wildfire. Four informational brochures were produced and 150,000 copies of each were printed and distributed. One scripted movie with professional actors (approximately 20 minutes) entitled Eastern Redcedar - Invasion of the Creeping Menace, was produced in both English and Spanish. Five hundred copies of the movie (DVD and VCR format) were produced and distributed to various units of government.

Impact:

Thirty meetings with home owner associations and municipal governments were conducted by USDA NRCS and foresters from the Oklahoma Department of Agriculture, Food, and Forestry. Some home owners on the south side of the Noddingham addition have implemented Fire Wise recommendations around their property. Others are in the process. Housing additions in Edmond have also implemented fuel reduction plans including prescribed burning between their addition and Lake Arcadia. Additional reports of accomplishments in other cities have not yet been received. This project received \$230,000 dollars in funding for 2004.

Funding Sources: National Fire Plan (Hazard Mitigation) through the Oklahoma Department of Agriculture, Food, and Forestry

Scope of Impact: State Specific

Contact:

Terrence G. Bidwell
Rangeland Ecology and Management
369 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-9618
E-mail: bidwell@okstate.edu

Title: Agricultural and Natural Resource Policy Education Program

Issues:

- Producers and land owners and managers need to be informed of public policy –potential and actual—to improve sustainable and profitable management of land and other natural resources
- Are government programs helping or hindering farmers and other natural resource managers in developing profit opportunities?
- Over the past decade, 25-35% of net farm income has come from direct Federal payments. Additionally, nearly 30% of land in farms is eligible for direct Federal support and much of the remaining farmland is eligible for technical and cost-share assistance to enhance the private and public benefits from farmland. Add to this the many Federal and state regulations that either require land managers to do certain things or prevent them from engaging in certain practices. Then, in another direction, global trade agreements are both providing opportunities and challenges in competitive markets. The economic evaluation of alternatives and consequences in an objective scientific manner is of direct benefit to resource managers and the public as well.
- The scope of the issue is how agricultural producers and other natural resource owners and managers can maintain and expand sustainable profit opportunities while working within a legal framework that respects the expectations and limitations of the general public.
- Some of market and nonmarket benefits include: a healthy, plentiful, affordable and varied food system; natural resources (air, land, water, ecosystems) that are sustained in an environmentally diverse and economic manner; a dynamic and profitable food production and distribution system; expanding domestic and global markets in which US agriculture maintains competitiveness; economically healthy and diverse rural communities that provide local production for local, regional and global markets, as well as a natural resource base that is sustained for future generations.

What Has Been Done:

- Policy Education

Current Farm Legislation education program: provides education on current farm policies and programs; as discussion for new programs and a new farm bill develop, providing updated information and objective impact analysis to Congress, the Oklahoma Legislature, the agricultural sector of the state, and the general public.

The Policy Process education program: provides an overview of the process and players in the development of new or changes in current policy. Focus is on how the producer can be involved in the process and affect changes.

Natural Resource Policy education program: interdisciplinary activities with other faculty to include water and water quality, enhancement of wildlife habitat, implications of land use changes in the state; and environmental hazards such as pollution and toxic waste situations.

Trade Policy education program: program to update agricultural producers, land owners, and the public on current and pending trade agreements with other countries; evaluating potential impacts to Oklahoma sectors.

Macroeconomic Policy education program: update the public on the US macroeconomy and related factors to assist them in managing financial portfolios, investments and capital holdings. These programs have evolved over 20 years with a departmental core of 2-4 faculty and 2-4 area economists. They have generally served the Oklahoma public and agricultural sector, specifically, targeting 1000-20,000 people each year through various media outlets.

- Capacities built: Targeted producers and land owners know where to go and how to evaluate government program opportunities. They also know what types of news on which to focus to improve profitable management of their operations.
- Behavioral changes and practices adopted: Targeted producers and land owners have learned to be more policy and financial news savvy, to interact directly or indirectly with their public decision makers; to maintain financial records that highlight economic efficiencies with respect to natural resource base.
- Contacts Strengthened: The education programs' record of accomplishment and respect gained by the public have strengthened ties and allowed for regular communications with members of Congress and their staff, Agriculture Committees of the House and Senate, the Oklahoma State Legislature and key representatives, Federal and state agency personnel, and farm and commodity organizations.
- Dynamic Programs: because policy is continuously evolving analysis of a program or proposal for the state or a single farm typically has a short shelf life. Consequently, updates and revisions are the norm.

Impact:

As a direct result of core faculty involvement in these educational programs, Oklahoma natural resources are being better managed; relationships and joint work with state and Federal agencies is ongoing and improved; agricultural producers and land owners and managers are either in improved profit positions or know when to change the structure of their portfolios to minimize losses. Work with the Southern Extension Public Affairs Committee, the National Public Policy Education Committee, Farm Foundation, and the USDA Farm Service Agency has provided state, regional and national in-service to state extension professionals and the public; work with partners from other countries has provided multi-national education programs on conservation, trade policy and international markets.

Source of Funding: State, Smith Lever, USDA, extramural NGOs such as Farm Bureau, Farmers Union, and commodity groups.

Contact:

Larry D. Sanders
509 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-9834
Email: larry.sanders@okstate.edu

Michael Dicks
314 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-6555
Email: mike.dicks@okstate.edu

Key Theme – Pesticide Application

Title: Pinkston Education Facility Instructs Pest Management Professionals

Issue:

Structural pests are usually unwanted and uninvited house guests, except at the newly constructed facility for structural and urban pest control. Subterranean termites do in excess of 2 billion dollars of property damage each year in the United States. Homeowners spend over 1 billion dollars annually in treatments for termite control. Figures from the National Pest Management Association indicate that the annual billing for general pest control in private dwellings, commercial restaurants, hotels, motels and commercial food outlets is 6 billion dollars.

What Has Been Done:

Recognizing the importance of structural pests, members of the Department of Entomology and Plant Pathology along with Oklahoma Pest Control Association and the Oklahoma Department of Agriculture Food & Forestry (ODAFF) envisioned a multi-state facility where hands-on training is combined with classroom teaching methods. Pest control technicians from Oklahoma and surrounding states are attending the three (3) day school as part of their certification procedure. Applicators learn minimum standards and proper liquid application techniques for subterranean termite treatments. Students also learn about the biology of termites as well as nontraditional treatment methods.

The Pinkston Education Facility (PEF) provides students access to many different construction examples and treatment problems. Students learn to identify six different types of floor slabs along with different types of piers and voids. Students also learn proper application techniques for pre-construction treatments as well as post treatment equipment selection and use.

In 2004, a one day General Pest and Food Processing Practical was added to the curriculum. This practical addresses problems and situations arising in the treatment of “general pests” such as cockroaches, ants, spiders and other nuisance pests in homes and commercial restaurants. The Food Processing practical addresses issues and problems with pest control in commercial food processing, food packaging situations. During 2004 a classroom/teaching building was constructed adjacent to the structural training facility. This building will be used for inspections,

mock pesticide applications and as a meeting room for all of the pesticide practicals.

Impact:

Presently, 180 applicators from Oklahoma, Kansas, Missouri, Arkansas and Texas, six (6) ODAFF inspectors and four (4) OSU staff have participated in nine structural classes at the structural pest training facility. The school is designed to assist applicators in learning or refreshing skills needed in treating structures for termites.

Some of the comments from class attendees have been: "I'm impressed with the amount of material covered during the class", "I've been doing termite work for 12 years and never did it that way", "I had no idea tip selection made that much difference", "I just realized that I need to charge more".

Most of the class attendees have had similar responses.

The national sales staff from Whitmire Micro-Gen attended a two (2) day training session and utilized the facility. University and state regulatory individuals from Kansas, Nebraska and Washington State have attended the workshop to become more familiar with termites, termiticides and to take back ideas to implement a school in their respective states.

One goal of PEF is to have the majority of applicators in Oklahoma attend a workshop at the facility either as a new applicator in the three (3) day class or in a one day refresher class. As of January 11, 2005, (80) applicators from Oklahoma, Kansas and Arkansas have participated in one of the four General Pest-Food Processing Practicals held at the Pinkston Education Facility

Funding: The Pinkston Education Facility is funded by monies from pesticide registration fees paid to the Oklahoma Department of Agriculture, Food & Forestry, Oklahoma Pest Control Association, and the Pesticide Safety Education Program.

Scope of Impact: Multi-state, and national

Contact:

Kevin Shelton, Facility Coordinator
Pesticide Safety Education Program
Department of Entomology and Plant Pathology
127 NRC
Oklahoma State University
Stillwater OK 74078-3033
Phone: 405-744-5531
E-mail entokts@okstate.edu

Title: Continuing Education Helps the Oklahoma Department of Transportation Manage Roadside Cost Effectively

Issue:

Oklahoma Department of Transportation (ODOT) employees are responsible for vegetation management on over 230,000 acres of interstate and state highway rights-of-way in Oklahoma. A portion of this acreage is part of the I-35 International Trade Corridor. Proper vegetation management results in vegetation that is attractive as well as functional in that it stabilizes the road surface against soil erosion and provides maximum visibility for the millions of motorists using the highway system. The natural process of ecological succession results in the colonization of the roadside by some undesirable plants (weeds) that do not offer adequate soil stabilization or maximum visibility for the motorist. Unmanaged weedy roadsides can also serve as a refuge for reinfestation into adjacent lands. Some of these weeds can be state Noxious Weeds or Federally listed Invasive Species. ODOT employees require continuing education as well as consulting expertise regarding the most cost effective vegetation management and weed control strategies. ODOT vegetation managers must not only maintain Oklahoma Pesticide Applicator Certification (PAC) status but also Equipment Competency Certification (ECC) status within ODOT.

What Has Been Done:

ODOT roadside vegetation managers have been trained to successfully complete PAC exams and have been provided continuing training to maintain PAC and ECC status. Additionally, they have been training and counseled on weed identification, spray equipment selection, equipment troubleshooting/calibration, herbicide selection and use, as well as identification of environmentally sensitive areas. ODOT herbicide bid specifications have been reviewed for proper technical content by OSU employees. Vegetation establishment and vegetation management reference manuals were developed and distributed to ODOT field staff and are updated yearly with the most current weed control suggestions. Roadside equipment inventory status and herbicide use surveys have been conducted yearly to track trends.

Impact:

One-hundred fifteen people received pesticide applicator certification training in 2004 with 610 pesticide applicators receiving continuing education in 15 workshops in 8 locations across Oklahoma in 2004. Roadside acreage in Oklahoma treated with atrazine, a Restricted Use pesticide, has been reduced from 35,936 acres in 1997 to 9,121 acres in 2004 (74.6% reduction). Total roadside acreage treated with herbicides has declined from 100,817 acres in 1999 to 75,339 acres in 2004 (25.3% reduction). Training directly resulted in ODOT atrazine use being gradually replaced with a General Use classified glyphosate + 2,4-D tank mix or similar combination. This treatment poses less environmental risk. Improved weed control also resulted, and in some instances an additional mowing was eliminated that would have cost approximately \$14.00 per acre. During the bid process, we provided industry sales representatives and ODOT buyers with cost-benefit analysis information regarding generic herbicide products. This resulted in an additional bid-price reduction for herbicides that saved ODOT an estimated \$50,000 per year over 2001 figures. ODOT purchased 3 precision-agriculture sprayers (PAS) since 2000 as a direct result of an "on-loan" PAS demo conducted by OSU roadside program personnel. These PAS allow for less herbicide use in vegetation encroachment control on asphalt shoulders. We developed "no spray zones" on maps for ODOT where pesticide applicators no longer treat so as to protect surface water resources. Clear zones on the roadsides contain equally healthy turf as before, which provides better pavement and shoulder stability. With fewer tall weeds comes improved visibility and thus safety for the motorist. The PAC and ECC training programs result in better performing ODOT employees and a measurable performance parameter that allows ODOT field workers

opportunities for salary improvements due to increased knowledge and skills gained.

Funding Source(s): State; Smith-Lever

Scope of Impact: State Specific; Integrated Research and Extension

Contact:

Dennis Martin, Ph.D., Turfgrass Extension Specialist
Horticulture & Landscape Architecture
360 Ag Hall
Oklahoma State University
Stillwater, OK. 74078-6027
Phone: 405-744-5419
Email: hordm1@okstate.edu.

Key Theme - Riparian Management

Title: Stream Hydrology Education

Issue:

Streams are an important and highly vulnerable part of the landscape. The great majority of landowners and managers have no concept of how streams function. They don't see the link between their actions and stream channel stability or degradation. This lack of understanding is the foundation for widespread stream degradation throughout the state. Degraded streams cause serious ecological, esthetic and economic damage by a variety of means including land loss, increased flooding, loss of fish habitat, and increased sedimentation. The costs of restoring impaired streams to properly functioning condition ranges from a bare minimum of \$100 per linear foot to as high as \$2,200 per linear foot. Viewed in these terms, prevention of stream degradation is extremely cost effective.

What Has Been Done:

Stream hydrology trailers are highly engaging educational tools in which flowing water cuts through a bed of plastic grit to model stream processes. A wide variety of audiences have received live-action instruction in stream system function and necessary stewardship practices. The four trailer models located around the state, allow audiences to observe the negative impacts of removing riparian vegetation, modifying stream channels and developing flood plains in compressed time, lending understanding of causes and effects. Photos are available at http://biosystems.okstate.edu/waterquality/Ed_Materials/Stream_Trailer.htm

Youth and adult audiences learn about streams from Extension educators at outdoor conservation classrooms, schools, landowner meetings, and other educational venues. Training sessions for Extension Service and other agency professionals have been held both in and out of state.

Impacts:

The seeds of change were sown in the minds of over 9,800 Oklahomans in 2004 by the stream hydrology education program. Increasingly as Oklahomans view degraded streams they are thinking, "Someone messed this up" instead of "It's just another sorry looking but normal Oklahoma stream". And more importantly, someday when they are faced with a choice involving streams they will recall the need to tread gently lest they set in motion a chain of destructive changes they will regret. If only 1% of the audience reached decides to implement proper stewardship practices on 1000 linear feet of stream per person, then the potential cost savings resulting from avoiding the expense of stream restoration would be \$9,800,000.

Source of Funding: Smith-Lever; State; EPA (initial funding to construct trailers).

Scope of Impact: Multi-state with southern region; extension

Contact:

Marley Beem, Assistant Extension Specialist
Department of Forestry
008C Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-3854
Email: marley.beem@okstate.edu

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

Overview

Oklahoma key program components contributing to this goal include: community economic, small business and tourism development; community infrastructure, service and facilities; local government education; applications engineers; family economic well-being; family resiliency; parenting; leadership development (youth and adult); life skill development; and club organizational development. The theme categories in this goal represent several programs that should have been included in CSREES goal 1, such as, "Agricultural Financial Management". Thus some reporting discontinuities may exist between what is reported in the overview and under key themes. During the year, 17,986 demonstrations, meetings and conferences (including 7,572 for 4-H and youth programs) were conducted under this goal. OCES personnel conducted an additional, 126,935 visits and consultations. These activities were attended by 928,056 participants during the year (including 433,821 participants attending youth activities). Approximately 22.3% of the attendees of programs under this goal represented non-white audiences. These figures might be compared to 25.9% in the general population of Oklahoma. Several programs contributing to this goal train and use large contingents of volunteers. Volunteers contributed over 22,634 days during the year to support and help deliver programs under this goal. Programs in this goal also have a very large number of person-contacts through

mass media, such as television, radio and newspapers. In addition, over 51 million person-contacts occurred through mass media educational programming under this goal in 2004.

Educational and service programming under this goal really fall into four major areas. The first is the area related to community development, local leadership development, infrastructure, government and economic development. These all represent rapidly growing areas of OCES requests and effort. Particularly high demand has been experienced in rural medical service, economic development, and through the applications engineers program. The latter is a joint program with the College of Engineering. It places masters-level engineers strategically around the state through Cooperative Extension offices. These applications engineers work with small to mid-sized manufacturing companies in rural communities to solve production, expansion and efficiency questions. This program and the rural community health services programs have been significant shifts in emphasis over the last five years. And these programs continue to grow. The other three major program areas under this goal are very high contact programs. Particularly high contacts are the consumer horticulture, home gardening efforts and the youth leadership and life skills programs. These programs result in a huge number of direct contacts every year - both in urban and non-urban communities. In order to better meet demand, OCES conducts a large Master Gardener program as well as a weekly "Oklahoma Gardening" television show. Also, the youth life skill development and leadership programs and Master Gardener program develop most of the large volunteer effort mentioned above.

Our Healthy Communities initiative began during 2004. This initiative unifies many of our existing programs as well as several new efforts. This initiative centers on community infrastructure, community economic development, and community leadership development. During 2004, the Initiative for the Future of Rural Oklahoma (IFRO) continued to develop local community leadership as well as provide local projects in economic development. This program included 13 well-funded pilot projects in 17 counties. Ten of the projects resulted in new rural community leadership programs in 14 counties. In addition, three three-year projects are still in process in 4 counties and four new multi-year projects were added in five counties. To date the IFRO program has resulted in a community-wide tourism project, significant county economic development strategic planning, leadership classes, an airport improvement project, a community primary care facility, a community marketing videotape, several training programs including Oklahoma Pride, a new economic development authority, value-added merchandising and home-based business projects, an USDA grant on value-added project planning and development, and three websites developed. In addition, economic development assistance and strategic planning has been provided to communities through several methods including training, technical assistance, and collaboration/cooperation with other agencies and groups. The training involves distinct modules or topics such as tourism, retail trade, or strategic planning. OCES provided economic base studies for 7 communities with a combined population of 428,123. It also provided 22 studies analyzing retail trade trends and sales gap analysis in communities with a combined population of 814,001 and total taxable sales for the communities of \$1.6 billion. Seventeen studies analyzing topics such as mainstreet development, agribusiness, housing, impacts of manufacturing plants, and community surveys were also completed, as well as, PRIDE customer service training program to five community groups.

The Applications Engineers program served more than 90, mostly rural, manufacturers that employ more than 3,800 citizens. The engineering assistance in the client projects resulted in over \$12 million of increased sales for these firms and another \$5.2 million of which would have been lost to the local economy due to relocation. In addition, the applications engineering program documented 172 new jobs created from assistance and 199 jobs retained. This program showed a total net impact to the state economy in excess of \$55 million in 2004.

Programs related to agricultural business management remained strong. The Federal and State Taxation Education program provided sixteen hours of continuing professional education for 2,225 CPAs, attorneys, and tax professionals. These individuals prepare between 90% and 95% of the farm tax returns filed by Oklahomans. OCES continues to provide individual farm business financial planning and management assistance through the IFMAPS program and group record accounting through its Quicken workshops. In addition, the Oklahoma Agricultural Mediation Program has requested additional support from IFMAPS for farm business analysis assistance starting in 2004.

Elected county officers have a direct impact on a local economy via the public services provided, such as county roads and rural law enforcement. It is well established that the quality and quantity of public services impacts the economic vitality of a community. However, prerequisites for holding elected office are few and many officials find themselves unaware and unprepared to execute all required duties. OCES provides training and resources to equip county officers provide better quality and quantity of public services. In 2004, officers from 70 of Oklahoma's 77 counties attended 80 courses. The courses averaged 22 persons per course or approx. 8,500 credit hours of instruction. In 2004, 73 people completed certifications. In addition, in-depth county officer handbooks and purchasing handbook are updated on a regular basis. During fiscal 2004, the Treasurer's and Commissioner's Handbooks were updated for statutory changes and upgraded to interactive CD ROM format.

County Extension Educators in Oklahoma, in partnership with the National Endowment for Financial Education® (NEFE), have assisted high school teachers with the planning, implementation, and promotion of the High School Financial Planning Program. Approximately 45,000 Oklahoma youth (since inception in 1990) have participated in the HSFPP since that time. During calendar year 2004, some 6,085 students/participants in 74 schools/classrooms/groups participated in the program in Oklahoma. Results from the 2003-2004 national evaluation* indicate that, immediately after studying the HSFPP curriculum: students showed statistically significant increases in all financial knowledge, behavior, and confidence questions; 60% of the students increased their knowledge about the cost of credit, auto insurance, and investments; 59% of the students indicated they had changed their spending patterns. The two primary ways the students changed spending habits were that they now only purchase things they really need and that they spend more wisely; and 60% indicated they had changed their savings patterns.

Family resiliency programs continued strong efforts in character education and life skills development for parents. OCES is participating in the OMI through the delivery of relationship education classes. 32 counties have certified Extension PREP trainers. As part of the commitment to the OMI, PREP-trained educators are obligated to offer a minimum of four PREP workshops free of charge to Oklahoma couples or individuals in need of relationship education.

OCES Educators receive PREP materials for each participant at no cost for as long as they provide free PREP workshops. As of January 2005, OCES Educators have provided 245 PREP workshops with approximately 2,700 Oklahomans. Audiences have included marital and premarital couples, TANF recipients, high school students, foster care parents, Head Start parents, substance abuse clients, prison inmates, and single individuals.

The 4-H Youth programs continue to serve and educate an enormous number of youth contacts. Over one hundred different club and after-school programs are available across the state. Listed below under the Key Theme Youth Development/4-H are just a few examples including: natural resources education, service learning, forestry and wildlife, literacy, youth entrepreneurship, and integrated pest management.

Positive progress was made in all Key Program Components listed under this goal in the Oklahoma Cooperative Extension Service 5-year plan of work. Total expenditures represented by programming and related support for this goal are approximately \$17.6 million with \$2.1 million from Smith Lever funds. About 171 professional and paraprofessional FTEs contributed to the goal last year. Following are some example program impact statements arranged by CSREES Key Theme.

Impact Statements Goal 5

Key Theme – Agricultural Financial Management

Title: Quicken for Farm Financial Records

Issue:

All farmers need records to facilitate tax preparation and many are seeking a low cost, easy-to-use system to better sort and summarize information for management purposes. Farmers do not need to spend a large sum of money to computerize their financial records.

What Has Been Done:

“Hands on” workshops and step-by-step instructions demonstrate how to adopt Quicken, a popular, inexpensive personal financial record keeping package for farm and ranch use. A comprehensive website includes print instructions from workshop notebooks, Frequently Asked Questions, newsletters, and short video and audio components so that audiences can see applications of the software as they do in the “hands on” workshops. The content is segmented to allow users to focus on items relevant to them. An analogous CD-ROM version is available to make the website resources available to those without Internet connections and/or dial-up modem connections where video viewing would be difficult if not impossible. An interactive quiz and website feedback form is also included.

Impact:

In the past 11 years, thousands of producers have received assistance in getting a better handle on their financial situation. Workshops are conducted on request and have been held in many counties. In addition to training for in-state educators, training for agents in other states has been provided. Workshops have also been conducted at national producer meetings. Workshop

participants and notebook purchasers continue to receive support through a quarterly newsletter with financial management tips. They also have access to instructions, newsletters, and video clips via the internet at <http://www.agecon.okstate.edu/quicken>. Through the website and CD-ROM, users have gained access to a fuller complement of the educational resources available than may be delivered in a specific time-limited workshop. Users can access topics that are timely or relevant to them. Materials are available 24 hours per day, 7 days a week to producers nationally and internationally. With web or CD delivery, users can access workshop content at their convenience and review them as many times as desired.

Having computerized financial records makes summarizing information to analyze decisions easy. Producers who have participated in workshops indicate that they gain new skills as well as confidence in using the computer in their business. They begin to think about sorting their income and expenses by enterprise to identify profit (and loss) centers on the farm. More informed decisions enhance prospects for profitability. And, certainly not least, reports for lenders and the IRS are much less painful to develop.

Scope of Impact: National. Materials are shared through regional Extension committees and to others upon request. Most recently, permission has been given to West Virginia extension staff to use materials. Support is provided to educators nationwide throughout the year via e-mail and phone calls. In addition, educators may reprint newsletters for distribution to producers.

Funding: State and Smith/Lever

Contact:

Damona Doye
Extension Economist and Regents Professor
529 Ag Hall
Oklahoma State University
Stillwater, OK 74078
405-744-9813
ddoye@okstate.edu

Title: IFMAPS Program

Issue:

Making good financial management decisions is a constant challenge for Oklahoma farmers and ranchers. Financial pressures can make farmers and ranchers feel at times as if they have no place to turn. But in Oklahoma there is help through the Intensive Financial Management and Planning Support (IFMAPS) program, sponsored by the Oklahoma Cooperative Extension Service. When producers are ready to study their personal situation critically, they can get individual and confidential help.

What Has Been Done:

The IFMAPS program was designed to provide producers with comprehensive materials and assistance plus help them prepare financial statements, farm budgets, and marketing plans.

Procedures used by IFMAPS include one-on-one assistance, workshops, cooperative efforts with non-extension agencies and groups, financial management training, resource materials, computer software, and referrals.

Area Extension Agricultural Economic Specialists plus part-time IFMAPS specialists provide one-on-one assistance in financial management and planning throughout the state. Producers call the local extension office, the IFMAPS toll-free number (1-800-522-3755), Area Specialists or IFMAPS specialists to request assistance. Agricultural lenders, attorneys, clergy, and Extension staff make referrals.

IFMAPS staff assist farm families in developing and analyzing alternative farm financial plans. Alternatives may include asset restructuring, new or different farm enterprises, adding to or reducing the size of existing enterprises, improving resource use, increasing income from off-farm work, developing more efficient management techniques, debt restructuring, liquidating the farm partially or completely.

Impact:

In fiscal year 2004, 30 farm families received individual financial analysis assistance; from FY 96-04, more than 1,695 farm families received the service. Farm families who receive individual assistance are better able to organize their financial information, evaluate this information, and make informed decisions about their operations. These skills benefit farmers and ranchers in two ways: 1) they improve management skills, which lead to improved business operations; 2) they encourage the operators to continue learning more about farm financial management.

IFMAPS staff also help families identify other resources available to help solve production and marketing problems and answer legal and tax questions. IFMAPS personnel help farm families prepare farm plans to apply for Farm Service Agency guaranteed loans or to prepare for restructuring loans. IFMAPS helps inform young and beginning farmers about Oklahoma and FSA beginning farmer loan programs through publications, meetings and individual contacts. IFMAPS staff also assist with Quicken[®] workshops which show farmers and ranchers how to use this software to keep more accurate farm financial records. IFMAPS staff help producers develop the plans needed to qualify for the Oklahoma Agricultural Linked Deposit Program (OALDP). However, during fiscal year 2004 the program was suspended due to low interest rates.

Scope of Impact: State Specific

Funding: State, Smith-Lever

Contact:

Damona Doye, Extension Farm Management Specialist or Randy True, Extension Assistant
513 Ag Hall, Oklahoma State University

Stillwater, OK 74078

Phone: 405-744-9836

ddoye@okstate.edu

true@okstate.edu

Web Site Link to Learn More about This Work:

<http://www.agecon.okstate.edu/ifmaps/index.htm>

Title: Oklahoma Farm and Business Tax Institutes**Issue:**

Frequent changes in Federal and Oklahoma State Tax Laws creates a need to keep tax preparers informed of the impact of the changes and how to best help their clients utilize the tax planning opportunities available. These educational programs are designed to update tax preparers about new laws and regulations covering farm, non-farm business and individual taxpayer issues.

What Has Been Done:

This program has been conducted for the past 43 years. It has grown from a one-day seminar to its present form of two days per location and consists of sixteen hours of continuing education credit. Topics covered range from presentation of new tax laws and their implications, agricultural issues, business issues, tax planning opportunities, professional ethics, retirement, and social security to name a few. Twelve sessions are conducted each year with two of these in the summer and ten in the fall. Total 2004 attendance for this program was approximately 2,225 tax preparers. Certified public accountants make up 43 percent of the attendance, 26 percent are tax preparers and bookkeepers, 10 percent are enrolled agents, 7 percent are public accountants, 2 percent are attorneys and the remaining 12 percent are come from a variety of backgrounds. These tax preparers file between 90 and 95 percent of the farm returns for taxpayers in the state of Oklahoma.

Impact:

High quality, professional instruction is provided to make continuing education credit available for Certified Public Accountants, Enrolled Agents, and Tax Attorneys. Many of those attending have stated that they have been coming to these programs since they began 42 years ago. Participants file more than 30,805 Federal farm tax returns and 155,372 Federal non-farm tax returns as reported by the participants in the most recent program evaluations. Most of the tax preparers that attend are from Oklahoma however there have been preparers from Kansas, Texas, New Mexico, Arkansas, Florida, and California attending the program in order to maintain their Oklahoma accreditation.

Scope of Impact: State Specific

Contact:

J C. Hobbs
Area Agricultural Economics Specialist
Northwest District
316 E. Oxford
Enid, OK 73701
Phone (580) 237-7677
Email: hobbsj@okstate.edu

Key Theme – Character/Ethics Education

Title: Character Education

Issue:

Character education was implemented by OCES in 2001 as a multi-year impact program in response to children and youth affected by the erosion of family support systems; societal influences such as television, drug and alcohol abuse, and peers; and reduced opportunities to learn self-discipline, respect, and responsibility.

What Has Been Done:

The curricula, *Character Critters*, designed for preschool and early school-age children, and *Exercising Character*, for older school-aged children and teenagers, were based on a framework of 6 pillar words: trustworthiness, respect, responsibility, fairness, caring, and citizenship. County Family and Consumer Sciences (FCS) and 4-H Youth Development educators compiled resources, distributed materials for teachers, partnered with other entities, convened program advisory committees, and disseminated program information. Program lessons were delivered directly by county extension educators as well as by those they trained, including child care providers, local Oklahoma Home and Community Education (OHCE) members, public school and Head Start teachers, vacation bible school and mother's day out programs, adult volunteers, 4-H adult and teen leaders, and high school students. The programs were most often presented in child care center, pre-school, kindergarten, or elementary school classrooms. Other venues included public libraries, churches, after-school and summer programs, civic clubs, county leadership classes, parent meetings, livestock shows, alternative schools, 4-H clubs, conferences, and camps.

Between 2001 and 2005, at least 38 counties across the state were involved with providing the character education impact program. Annual reports indicate that the *Character Critters* program reached nearly 104,000* children, parents, and teachers. *Exercising Character* reached over 31,600* more. Also notable is that volunteers contributed nearly 8,900 hours to these programs.

**Numbers may include duplicate contacts with some children, parents or teachers.*

Impact:

To assess the overall statewide impact of the character education program, county extension educators conducted a series of focus groups in Fall 2004 and early 2005. A total of 75 focus groups with 494 participants in 28 counties were conducted composed of educators and/or child care providers, parents of children who had received the program, other community members, and children and youth ranging in age from kindergarten to teens. One additional county used written surveys collected from 64 5th and 6th graders.

Key findings:

- Parents and teachers generally reported improved social behavior, communication (speaking and listening) skills, self-esteem, and attitudes among both teachers and students.
- “Kids teaching kids” proved to be an effective strategy that benefited youth teachers and students.

- Character education allowed more time on academics and less time with discipline problems.
- Children remembered the critters as long as a year and helped them recall concepts.
- Early childhood teachers found lessons were age-appropriate, user-friendly, affordable, accepted by diverse cultures, and effective in working with parents and children.
- A majority of older children indicated that *Exercising Character* concepts were recalled and applied over time.
- The program opened doors to audiences that were previously not utilizing Cooperative Extension programs and can be integrated into broader character building initiatives.
- There is general agreement that the program needs to continue in schools and communities, with increased involvement from parents and the community.

Scope of Impact: State Specific

Funding: State, Smith-Lever

Contacts:

Lani Vasconcellos
 Family & Consumer Sciences District Prog. Spec.
 Southeast District Cooperative Extension Office
 Box 1378
 Ada, OK 74821-1378
 Phone: 580-332-4100
 Email: lani@okstate.edu

Deborah L. Richardson
 Child Development Asst. Spec.
 Oklahoma State University
 333 Human Environmental Sciences
 Stillwater, OK 74078-6111
 Phone: 405-744-6231
 debbie.richardson@okstate.edu

Title: Youth Character Programming

Issue:

Many of the youth in our communities across the state are not receiving adequate character education in the home. This has been attributed to the erosion of the family support systems in our society. Many of our youth do not spend the quality time with their parents or do not have a positive role model in their home to model the behavior needed to learn the valuable life lessons that develop good character. Thus, many of our youth do not understand words such as responsibility, trustworthiness, respect, caring, fairness, and citizenship.

What Has Been Done:

The Oklahoma Cooperative Extension Service selected the Character Education program to be taught to youth 5-18 years of age so that they can become educated about the meaning of words relating to character. The six pillars used to teach good character were responsibility, trustworthiness, respect, caring, fairness, and citizenship.

“Character Critters” is an educational program being taught to 4 and 5 year olds and “Exercising Character” to youth 6-18 years old at metro elementary schools, child development centers, Oklahoma City Housing Authority Sites and 4-H activities and camps. This is our fourth year to

teach Character Education programs in Oklahoma County. “Character Critters” teaches the six pillars of character with story cards, puppets and activities: “Exercising Character” teaches the six pillars of character through games, visual aids, skits, work sheets and group activities.

Impact:

- This comment from a teacher helps indicate the impact, “These lessons have made it easier to teach character to my children because you are not just giving them a definition, but stories and activities they can understand. Too many kids are not taught any character, values, or moral these days.”
- The children remind each other about being “responsible” and “fair.”
- The children relate well to the puppets and stories.
- The children learn valuable life skills from the character workshops.
- Several comments from teachers indicate the six pillars all identified specific and separate traits that made it easy for youth to learn how to build good character.
- Teachers and parents agree that the Character Education Workshops have had a lasting and positive impact upon their children.
- Teachers stated that the values taught by the character education lessons assist the children to deal with difficult situations that occur daily in the classrooms.

Funding Source(s): State, Smith-Lever, National Colgate Youth Award, Oklahoma County Assessor’s Office

Scope of Impact: Oklahoma County

Contact:

Kyle Worthington, 4-H Youth Educator
Oklahoma County OSU Cooperative Extension Office
930 N. Portland
Oklahoma City, OK 73107-6120
Phone: 405-713-1125
Email: kworthi@okstate.edu

Key Theme – Children, Youth, and Families at Risk

Title: Love County Middle School Mentoring Program

Issue:

Many students at Marietta Middle School do not have the opportunity to interact with caring adults who will provide a good role model. These students often have problems with attendance, grades, attitude and behavior. Teachers spend an inordinate amount of time with these students, losing valuable instruction time with other students. As teachers and students become more frustrated with the problem student, that student becomes more angry, isolated, and less interested in achievement at school. These attitudes and behaviors often spill over into the community.

What Has Been Done:

A training session was developed by Cindy Clampet, FCS educator, OCES, Love County and Sherry Hallum, Mental Health Services of Southern Oklahoma for volunteers of the program. Three sessions were conducted by OCES and MHSSO for 15 adult volunteers in the community. These adults were matched with a student by his counselor. Students were referred to the program by teachers, and parental permission for participation was obtained by the school. These mentors and students met once a week with emphasis being given to character development. Mentors were given weekly reports on the student's grades and behavior. Monthly support meetings were held with updates by the counselor and more information about student behavior and development. Mentors were encouraged to share their problems and triumphs in a confidential setting.

Impact:

Seventeen 6th and 7th grade students entered the program in September of '03. During the school year, two dropped out of the program due to disinterest. Three moved out of the district, although better attitudes and fewer discipline referrals were noted on two of the students who moved.

Of the 12 students who remained in the program, the majority of the grade point averages remained the same. Seven students had fewer absences than in the previous year. Three students had the same number of absences and one had more absences than in the previous year. Attitudes in seven of the students got better as reported by teachers and the counselor. Due to a lack of data on the 6th grade students about discipline referrals and grades from the previous year, it is hard to compare their improvement in those areas. The counselor's evaluation of the success of the program was very good. Students enjoyed the program and showed a marked favorable impact from time spent with their mentor. Mrs. Kirby, Middle School Counselor requests that this program continue and expand because of the unique benefits it provides the students. The program has been requested in two of the other three county schools for next year.

Contact:

Cynthia Clampet
Love Co. Ext. Office
405 W. Main, Suite 102
Marietta, OK 73448-2849
Phone: 580-276-3385
Email: clampet@okstate.edu

Key Theme – Community Development

Title: Improving Access to Health Care Services in Rural Oklahoma

Issue:

Rural Oklahomans access to health care is vital for the quality of life rural Oklahomans deserve, however, most do not consider the impact rural hospitals and local health care providers have on the local economy and community development. The information provided through this process alerts community leaders to the importance of utilizing local health care services in order to maintain and/or expand access to those services in the future. Local leaders are also made aware of the difficulties of retaining retirees and recruiting industry if local health care services were not

available. Rural hospitals are the emphasis of concern as they provide the foundation for the health care providers in the community.

What Has Been Done:

The Community Health Engagement Process begins by working with rural hospital to establish a committee to meet for a period of six to seven months. The initial stages of the process provide products that show the economic impact of the health sector, promote use of local services through a health services directory, provide data covering health, behavioral, traffic, crime, and education information, and a community assessment survey to determine local opinions and concerns with their health care services. Over the past ten years this process has helped sixty-eight communities state wide with products designed to improve access to local rural health care services. Many of those communities have gone on to establish “health care coalitions” to continue to address health care issues in their area and establish a plan of action for dealing with future goals. These coalitions are formed from local health care workers from a variety of facilities and local community members from all professions.

Impact:

Some rural hospitals and their communities have benefited by gaining tax support from their citizens. Other communities are able to increase awareness of local services and help change and improve those services. Examples include such things as health fairs and walking trails, as well as, kidney dialysis and outpatient rehabilitation centers. At times the impact is not truly realized until years later, for example when plans are put in place to raise money for the construction of a 1.8 million dollar wellness center in the panhandle.

Scope of Impact: County and community level due to maintaining and/or expanding health care services.

Source of Funding: State; Smith-Lever; and grant funding

Contact:

David Shelton
Assistant State Extension Specialist
526 Agriculture Hall
Stillwater, OK 74078-6026
Phone: 405-744-4857
Email: sheltor@okstate.edu

Title: Cleveland County Community Development “Community Long-Range Planning”

Issue:

Cleveland County was one of the fastest growing counties in the state of Oklahoma from the 1990 to 2000 US Census. Noble’s population is approximately 5,600. The City of Noble is located 6 miles south of Norman, Oklahoma; the largest city in Cleveland County.

The City of Noble’s location to the Oklahoma City Metropolitan Statistical Area and the desire to keep the rural atmosphere and small town charm created the concern with smart economic

development. The current comprehensive plan the City of Noble is operating with is 15 year old. Providing the City of Noble technical assistance with a long-range planning process empowered the citizens of Noble and the city to update the comprehensive 20 year plan.

What Has Been Done:

The Cleveland County Community Development Program collaborated with the Oklahoma Community Institute to facilitate a community-wide visioning process to update the comprehensive 20 year plan. Three visioning sessions were conducted reaching 35 members from a cross-section of the community.

The community members and City of Noble raised \$3000 to pay for the planning process, along with a matching grant from Oklahoma Natural Gas.

Impact:

The community-wide process gave community members a voice and the ability to make decisions about their community. The volunteer capacity has increased as a result of the vision process. More community members are excited and involved in bettering the city. Community pride is more evident.

The City of Noble now has the ability to plan and control development without straining the budget or services provided. The process allowed the citizens to express concerns and areas of importance such as park development and beautification.

The City of Noble achieved Century Community Status from the Oklahoma Department of Commerce as a result of the planning process. The Oklahoma Century Community Program is designed to take communities to the next level of economic readiness. The program focuses on implementing locally defined plans using structured training modules centered on community and economic renewal. It is also state-wide recognition, and the status increases eligibility for grants through the Department of Commerce.

Scope of Impact: State Specific

Funding: State and Smith Lever, Cleveland County Funds, Oklahoma Natural Gas, Noble Chamber of Commerce

Contact:

Leah Wall
Community Development
Extension Educator
601 E Robinson
Norman, OK 73071
Phone: 405-321-4774
Email: leahjw@okstate.edu

Title: Economic Development Options and Opportunities

Issue:

Oklahoma is a diverse state. The Great Plains counties of the northwest have economies that are still heavily dependent on petroleum and agriculture. Population loss is a serious issue. The metropolitan counties in central and northeast Oklahoma, on the other hand, are growing faster than other regions of the state. Jobs are the biggest issue in the southeast part of the state, but this region is just starting to realize what a great asset their natural resources really are. People in this region have always been concerned about the environment, but now those concerns are mixed with thoughts about how to effectively take advantage of tourism opportunities while still protecting the natural environment. The northeastern counties have long understood the asset presented by their lakes and recreational areas. This region is dealing with large numbers of tourists and retirees. Every Oklahoma community faces a different set of issues and a different set of problems related to the development of the local community and the local economy.

What Has Been Done:

Economic development assistance and strategic planning has been provided to communities through several methods including training, technical assistance, and collaboration/cooperation with other agencies and groups. The training involves distinct modules or topics such as tourism, retail trade, or strategic planning. A great deal of support material has been developed to aid in the training efforts. Much of the support material involves data reporting and analysis, computer model applications (impact analysis and retail trade studies), and use of other research based tools. This information includes three community specific reports: (1) economic and social data, including trends analysis, (2) a retail trade study, and (3) an impact analysis for the local economy. About 50 studies of these types have been prepared over the time period June 2003 to May 2004. The community specific information makes each workshop or technical report unique. The resulting strategy produced by the workshop reflects particular strengths and limitations of the community. Follow-up activities also vary, depending upon the needs of the community.

Impact:

Specific economic development efforts during the past evaluation period include:

- Provided economic base studies for 7 communities or counties or regions. These studies represent 7 counties with a combined population of 428,123.
- Provided 22 studies analyzing retail trade trends and sales gap analysis. These studies represented 20 counties with a combined population of 814,001 and total taxable sales for the communities of \$1.6 billion.
- Provided 17 studies analyzing topics such as mainstreet development, agribusiness, housing, impacts of manufacturing plants, and community surveys.
- Provided the PRIDE customer service training program to five community groups.

Jon Blankenship, Director of Economic Development for the City of Enid, comments on services provided by the Oklahoma Cooperative Extension Service including a community survey and a targeted industry analysis.

“The process was valuable because it validated some ideas about [economic development] opportunities and caused more focused efforts that have brought results.”

Funding Source(s): State, Smith-Lever, Fees

Scope of Impact: State Specific

Contact:

Mike D. Woods
Department of Agricultural Economics
Oklahoma State University
515 Ag Hall
Stillwater, OK 74078-6026
Phone: 405-744-9837
Email: mdwoods@okstate.edu

Title: Rural Development in Johnston County

Issue:

Johnston County is a rural community of approximately 10,000 citizens, 3000 of which live in the county seat, Tishomingo. As the capitol of the Chickasaw nation, Tishomingo has a great wealth of tourism opportunities. However, the sales tax base for Tishomingo was declining while smaller towns in the community were growing. Many store buildings on Main Street were empty. The volunteers in the community who provided leadership had not had the benefit of formal leadership training. With limited manpower and fiscal resources available for the community, it was determined that a strategic master plan was essential to any development planning.

What Has Been Done:

Using the OSU Extension Rural Development Initiative for the Future of Rural Oklahoma grant, the community developed an organization to meet those needs. The Tishomingo Development Team has a mission of “Making Tishomingo a place where people want to live and work.” The group began their mission by forming committees to tackle the following issues: beautification of the community, development of new businesses, promotion of our area attractions, and leadership development. At the end of the first year, the group had participated in ten leadership and economic development workshops which were open to the entire community. Leadership was developed through committee projects that resulted in cleaning up the banks of Pennington Creek, removing excess poles along Main Street and encouraging the city to enforce codes for decaying buildings on Main Street. At the end of the first grant cycle, two city blocks have been renovated and storefronts improved creating a much more visually attractive city. With the second grant cycle, we formed two leadership teams: Leadership Johnston County for adult leadership training and Youth Leadership – Johnston County as a youth leadership program. Leadership Johnston County is currently providing monthly leadership training for 17 county individuals. The youth leadership program is in its second year and twenty-three county youth have completed or are currently enrolled in the program. A county team from OSU Extension, OG&E, Murray State

College and the Johnston County Health Department provide training and leadership for the youth over a 4-month period to instill citizenship and leadership skills.

Impact:

Tishomingo is a city on the move. There are currently no empty store buildings on Main Street. We have seen new businesses started and existing buildings improved. Committees are exploring grant opportunities for development and beautification projects such as infrastructure and sidewalks. The Tishomingo Development Team is now working with a Community Task Force to develop a 10-year community plan. Members of Leadership Johnston County have taken leadership roles in task force committees.

Funding Source(s): State, Smith-Lever, County

Scope of Impact: State Specific

Contact:

Ginny McCarthick
Extension Educator, FCS, 4-H Youth, & CED
Johnston County OSU Extension Office
5 Murray Campus
Tishomingo, Oklahoma 73460
Phone 580 371 9533
Email: ginny.mccarthick@okstate.edu

Title: Health Care and Rising Cost

Issue:

Medical expenses cost Americans millions of dollars each year. This cost is a major impact on low-income families as well as elderly on fixed income. Increased medical and pharmaceutical cost to these families cause families to have to cut other living costs such as rent or food. Medical and pharmaceutical costs however are a major cost and concern of every citizen. Their dilemma is how do we afford medical cost and insurance premiums.

What Has Been Done:

The answer for Wagoner County residents will be a federal quality medical center. This would reduce medical and pharmaceutical cost to the residents. Federal quality medical care centers are not free medical care, but affordable. Residents pay on a sliding fee scale that allows families the affordable medical care. Pharmaceuticals are also at cost savings to the residents. The objective is to study the economic and health improvements this would create for Wagoner County.

Impact:

Residents of Wagoner County would be able to receive affordable medical and pharmaceutical care for their families, thus allowing families to spend more of standards of life such as food and insurance. The medical center will be governed and used by a ten-member board of directors.

This will also create jobs for management, doctors, nurses, clerical as well as janitorial. The center will also attract residents of Wagoner County causing a tax increase for the community.

Funding: Federal, state, county

Scope: Wagoner County

Contact:

Alan Parnell, EEA/4-H Youth Dev.
Wagoner County Ext. Service
P. O. Box 487
Coweta, OK 74429
Phone: 918-486-4589
Email: parnela@okstate.edu

Key Theme – Family Resource Management

Title: High School Financial Planning Program

Issue:

Young people have control over (and influence the use of) considerable amounts of money and will continue to do so throughout their lives, yet studies continue to suggest that teens lack basic economic and money management skills. Results from a recent nationwide survey (Jump\$tart Coalition for Personal Financial Literacy, 2004) indicate that on average, the 12th graders surveyed could only answer 52.3% of the questions correctly (on topics such as income, money management, saving, and spending).

What Has Been Done:

Since 1990, County Extension Educators in Oklahoma, in partnership with the National Endowment for Financial Education® (NEFE), have assisted high school teachers with the planning, implementation, and promotion of the High School Financial Planning Program. Approximately 45,000 Oklahoma youth have participated in the HSFPP since that time. During calendar year 2004, some 6,085 students/participants in 74 schools/classrooms/groups participated in the program in Oklahoma.

Impact:

A nationwide evaluation in 2003-2004 (conducted by Dr. Sharon Danes, a professor at the University of Minnesota) shows significant, positive change in personal financial knowledge, behavior, and confidence among high school students who participated in the High School Financial Planning Program.

Results from the 2003-2004 national evaluation* indicate that, immediately after studying the HSFPP curriculum:

- Students showed statistically significant increases in all financial knowledge, behavior, and confidence questions.

- About 60% of the students increased their knowledge about the cost of credit, auto insurance, and investments.
- About 40% of the students began to write goals for managing their money, to save money for their needs and wants, and to track their expenses.
- 41% of the students increased their confidence in making financial decisions.

Further, three months after completing their study of the curriculum:

- Students showed statistical increases on all questions except one about their investment knowledge.
- 59% of the students indicated they had changed their spending patterns. The two primary ways the students changed spending habits were that they now only purchase things they really need and that they spend more wisely.
- 60% indicated they had changed their savings patterns. Of those who reported having changed their savings habits, 80% said they now save for what they really need or want and 20% indicated they now save every time they receive money.

Source of Funding: State and mini-grant from National Endowment for Financial Education

Contact:

Joyce E. Jones, Ph.D.
 Personal Finance Specialist
 Cooperative Extension - Family & Consumer Sciences
 333 HES, Oklahoma State University
 Stillwater, OK 74078-6111
 Voice: 405.744.6282
 Fax: 405.744.1461
 Email: joyce.jones@okstate.edu

*Excerpted from Evaluation of the NEFE High School Financial Planning Program Curriculum, 2003-2004, available at www.nefe.org/hsfppportal/index.html

Key Theme – Home-based Business Education

Title: Economic Development Through Micro, Home-Based and Family Businesses

Issue:

Enhancing the well being of individuals, families and communities through successful home-based and micro businesses. The number of people working at home grows annually by 5-10% (Link Resources, 1995). One reason for this growth is the economic situation (OCES, 1989, 1994, 1999). In Oklahoma, those economic reasons develop from our ranking of 43rd in individual per capita income and 36th in the number of people at or below poverty (2001 Statistical Abstract). Other reasons are: lifestyle changes, increased family time, being one's own boss, and entrepreneurship.

What Has Been Done:

Since 1985, OCES has recognized the growing trend of entrepreneurship through home-based and/or micro businesses. Through the statewide network of Extension Educators OCES provides written materials that help a business owner get started and market their product or service. Specific materials for specific needs are available. Numerous workshops on a wide variety of topics have been developed. One-on-one assistance is offered.

Impact:

- Based on a 2003 survey, 20% of households own and operate a business. 68% of those business are family owned and operated, 66% are home-based businesses, and 92% are micro (employing 10 people or less) in size. Averaging nearly \$40,000 in gross income, these potentially 175,000 home-based businesses add \$6 billion to Oklahoma's annual economy with family businesses generating a similar amount.
- 80% of businesses assisted by the program are still in business after four years.
- 30 new food-based businesses have started after participating in "Basic Training"
- In a 1998/99 survey, 28% of respondents have started a business. With an average income, this means over \$1,500,000 annually has been added to local economies.

Funding: Smith-Lever; State

Scope of Impact: State Specific

Contact:

Glenn Muske, Assoc. Professor

DHM

333 HES

Stillwater, OK 74078-6111

Phone: 405-744-9931

Email: glenn.muske@okstate.edu

Key Theme – Jobs/Employment**Title: FY2004 Impact Statement for the Applications Engineering Program****Issue:**

The 2004 Oklahoma Department of Commerce Manufacturers database lists about 5,700 manufacturing firms in Oklahoma. Only 47 of these manufacturers have more than 500 employees (1%) and 86% employ fewer than 50. Approximately half of these small firms are located in rural areas and are extremely important to their local economies. The loss or downsizing of even one of these wealth-generating small or mid-sized companies can have devastating consequences for the host and surrounding communities. While products are quite diversified, there is limited global perspective with respect to markets and technology. These rural firms face particular difficulty in getting relevant and usable information and technical assistance that will keep them abreast of the rapid changes in manufacturing technology.

What Has Been Done:

To address the difficulties faced by our small rural manufacturers, the College of Engineering, Architecture and Technology and the Division of Agricultural Sciences and Natural Resources at Oklahoma State University work in partnership to provide technical assistance through the Applications Engineering program. Since 1997, Applications Engineers have been deployed in the state in collaboration with the Oklahoma Cooperative Extension Service.

During FY 2004, the Applications Engineers, in cooperation with the Manufacturing Extension Agents of The Oklahoma Alliance for Manufacturing Excellence, served more than 90 small, mostly rural, manufacturers that employ more than 3,800 of our citizens. This effort included more than 3,700 hours of direct engineering assistance and technology transfer activities. Examples of engineering projects include assisting small manufacturers in implementing processes and procedures to comply with OSHA and EPA rules and regulations, process and product development, manufacturing facility layout, and manufacturing cost analysis.

In addition, the Applications Engineers mentored several senior engineering class design project teams during the fiscal year. These senior design team projects allow the students to work with a small manufacturer on a real world problem, and at the same time, provide the manufacturer access to some of our best and brightest soon to graduate engineers at virtually no cost. These project activities provide a win-win situation for both students and manufacturers.

Impact:

In order to receive engineering assistance the client must agree to a post-project impact assessment. This impact assessment is done using procedures developed by the National Institute for Standards and Technology for the Manufacturing Extension Partnership. The client is contacted some months after the completion of an activity and is asked a series of questions designed to assess the impact of the effort.

The impact of this program is measured in several ways. One is the economic value of the service to the company as reported by the client. Another measure is the number of jobs created or retained. Both impacts are measured by an independent survey of the client. Number of jobs created or retained is translated into economic impact using an income multiplier to compute the direct, indirect, and induced effects due to a change in the number of jobs in the manufacturing sector.

The multiplier was developed from data collected from two different sources. First, the average salary for manufacturing in Oklahoma (\$34,323) was taken from the U. S. Bureau of Labor Statistics published information for 2001. Secondly, the income multiplier of 2.2 was obtained from IMPLAN data for Oklahoma. The total economic impact can be computed by multiplying the average annual salary times the income multiplier to arrive at \$75,511 for each new or retained job in the manufacturing sector.

In FY 2004, the Applications Engineers client projects had the following impacts:

Sales increase	\$12,590,600
Sales retained that would have otherwise been lost	\$5,315,000
Cost savings	\$2,842,931
Costs avoided	\$934,100
172 new jobs created at \$75,511 per job	\$12,987,892
199 jobs retained at \$75,511 per job	\$15,026,689
0 jobs lost at \$75,511 per job	-\$0
Investment in new plant facilities and equipment	\$6,290,500
Total impact	\$55,987,712

Scope of Impact: State specific

Source of Funding: Grant; State; Smith-Lever

Contact:

Doug Enns
Applications Engineer
Oklahoma State University
111 Engineering North
Stillwater, OK 74078-5016
Phone: (405) 744-3740
Email: enns@okstate.edu

Key Theme – Leadership Training and Development

Program Title: Citizen Engagement Through Public Deliberation (CEPD)

Issue:

Stories abound of angry, frustrated citizens who feel they have little power to influence important public decisions affecting their lives. This frustration is often characterized as apathy with little effort made to look deeper at the desire of regular people to express their views on public issues but believe they do not have a venue to do so.

Deliberative forums and study circles provide a safe, non-partisan venue for citizens to struggle with challenging public issues. These deliberations are based on the idea that in a democracy citizens have the responsibility to get together to talk through their common concerns, to weigh possible alternative actions to address these problems, and inform policy makers and other community leaders about the desired direction for public action. Public deliberation provides a means by which citizens make choices about the basic purpose and direction for their communities and country. As conveners, moderators, and recorders/reporters of deliberative forums, Extension professionals and other community leaders perform a non-biased, non-advocacy role in engaging citizens in building community.

What Has Been Done:

Founded in 2000 by Daugherty and Williams, the Oklahoma Partnership for Public Deliberation (OPPD) has sustained continuous operation, pursuing its mission to foster participation in reasoned and informed decision making for the public good. The OPPD has conducted six Moderators & Recordors Academies (OMRA) to prepare approximately 225 Oklahomans to convene, moderate, record and report deliberative forums and study circles. These persons are prepared to give leadership to deliberative forums. To date, nearly 200 public forums have been conducted in Oklahoma on a wide range of topics.

Three communities are implementing pilot projects: Carter County Speaks; Norman NIF Network; and Stillwater SPEAKS (Stillwater People Expressing Attitudes and Knowledge): *In Search of Common Ground*.

Impact:

In 2004, in-depth personal interviews were conducted with 13 community leaders, revealing four themes addressing the ways public deliberation helped them in their leadership roles:

- Becoming better listeners
- Improving comfort level and confidence in being a moderator of deliberative forums on contentious issues
- Becoming less sensitive during contentious discussions, less likely to take comments personally
- Increasing open-mindedness

A study conducted in June, 2003, involved telephone interviews with **OMRA participants**.

Findings:

- Facilitated local forums (65%); additional forums conducted (44%)
- Organized a committee or network to support local forums (32%)
- Common ground reached or a shared sense of direction (65%)
- Contact made with office holders (64%)
- Community taskforce/study group was organized to address the issue (37%)
- Stories about the issue were featured in the local media (67%)
- Issue is now “on the table” in the community (53%)
- Participants began to network with others on the issue (84%)
- Used the deliberative approach in work settings (79%); civic life (75%); family (55%); religious life (35%); and in dealing with public issues (76%)

Comments from respondents: “I’m the mayor . . . I used [the forums] to help decide the direction of our community.”; “I work with a social/civic organization and they refer to [the forums] when working with legislators and the rest of Oklahoma. It kind of gives a pulse of the general public.”

Each year, the OPPD conducts 25-30 deliberative forums involving 1200-1400 people. Based on a joint study conducted by Oklahoma Cooperative Extension and Missouri Outreach and Extension in 2001, the following impacts are projected for Oklahoma **forum participants**:

- Contact made with office holders (62%)
- Community taskforce/study group was organized to address the issue (42%)
- Issue is now “on the table” in the community (38%)
- Participants began to network with others on the issue (52%)

Conclusions: Persons who participate in OMRAs use this leadership development experience to foster public deliberation in their communities. Further, citizen engagement increases as a result

of public deliberative forums. The economic impact of convening, conducting, reporting, and participating in deliberative forums is projected to be \$63,905/year.

Scope of Impact: Multi-state with Missouri

Funding: Grant (NGO), state

Contact:

Renee A. Daugherty, Ph.D.
Leadership and Educational Methods Specialist
Dept. of Human Development & Family Science
342 HES
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-6231
Email: renee.daugherty@okstate.edu

Sue E. Williams, Ph.D.
Family Policy and Leadership Dev. Spec.
Dept. of Human Dev. & Family Science
333F HES
Oklahoma State University
Stillwater, OK 74078
Phone: 405-744-6282
Email: sue.williams@okstate.edu

Title: Initiative for the Future of Rural Oklahoma – Leadership Development Component

Issue:

Preparing Oklahomans to identify and act on public issues affecting individuals, families, and the community. Many rural communities face challenges on several fronts. In Oklahoma, these challenges often include declining population, competition with more populated areas for economic development, and inadequate infrastructure and community services to support economic development and population growth. There is also concern about the short supply of community leaders prepared to meet those challenges. The development of local community leaders has been identified and emphasized on the state and national level. One Oklahoma study identified the need to provide opportunities “at the local level to develop community leaders and assist with community improvement”.

What Has Been Done:

Initiative for the Future of Rural Oklahoma (*Initiative*): Launched in 2002 by an interdisciplinary team including the departments of Agricultural Economics, Human Development & Family Science, and Design, Housing & Merchandising. The effort includes 13 projects encompassing 17 counties and features educational programming in two areas: Leadership Development (addressed in this Impact Statement) and Economic Development. The purpose of the *Initiative* is to enhance and develop the effectiveness of community leaders and county Extension Educators to identify and address critical issues confronting the community, especially those relating to leadership and community development.

LeadershipPlenty (LP): Created by the Pew Partnership for Civic Change and designed to address the shortage of adult and youth community leaders. Only certified faculty may teach the curriculum (Daugherty and Williams are the only persons in Oklahoma with LP certification). A vision of LP embraces the belief that there is no lack of leadership in our communities – rather, there is lack of opportunity for people from different backgrounds to work together to tackle tough issues.

The Leadership Development program area is grounded in the concept of local management and implementation. The curriculum includes a menu of leadership topics prepared in modules for use at the local level.

Through the *Initiative*, a variety of leadership strategies and skills were development and used to address community needs including:

- Creation of strong, enduring multi-county/multi-community leadership teams
- Development of mission statements for community leadership teams
- Utilization of citizen engagement approaches
 - Surveys
 - Deliberative forums
- Involving youth to plan and conduct community development projects
- Creation and implementation of strategic plans
- Seeking additional resources through grantsmanship
- Learning more about other communities by conducting study tours

Impact:

A variety of community development projects were implemented. Examples included the following:

- Community-wide tourism project
- Community pride programs
- Shop-at-home program
- Airport improvement project
- Building sidewalks
- Main Street improvement
- Visual merchandising seminars
- Community marketing video
- County sister-city program
- Primary care facility
- Home-based and small business assistance projects
- County-wide economic development team
- Economic and community development conference
- Community economic development resource binder
- Community beautification through fire training
- County-wide high-speed internet access
- First-ever community-wide long-range plan
- County-wide clean-up and beautification
- Business development/expansion project
- Value-added merchandising

In May, 2004, a follow-up evaluation of community leaders participating in the *Initiative* revealed the following:

- 57% stated that they increased their community involvement.
- 39% indicated that their attitude toward local leaders had improved.
- 67% said that the power structure in their communities was more inclusive and diverse.

- 54% reported that their attitudes about the future of their communities had improved.

The economic impact of the 57% of community leaders who increased their community statewide involvement is projected to be \$152,113/year.

Funding: State, Smith-Lever

Contact:

Renee A. Daugherty, Ph.D.
 Leadership and Educational Methods Specialist
 Dept. of Human Development & Family Science
 342 HES
 Oklahoma State University
 Stillwater, OK 74078
 Phone: 405-744-6231
 Email: renee.daugherty@okstate.edu

Sue E. Williams, Ph.D.
 Family Policy and Leadership Dev. Spec.
 Dept. of Human Dev. & Family Science
 333F HES
 Oklahoma State University
 Stillwater, OK 74078
 Phone: 405-744-6282
 Email: sue.williams@okstate.edu

Title: Local Government Officers Training

Issue:

Elected county officers have a direct impact on a local economy via the public services provided, such as county roads and rural law enforcement. It is well established that the quality and quantity of public services impacts the economic vitality of a community. However, prerequisites for holding elected office are few and many officials find themselves unaware and unprepared to execute all required duties. Understanding of open meetings laws, purchasing regulations, county finances, personnel policies, and risk-management are vital to avoid inefficiency and/or mismanagement. Training and resources will provide better quality and quantity of public services.

What Has Been Done:

- ◆ Cooperative Extension partners with OSU’s Center for Local Government Technology to offer a wide range of training and materials.
- ◆ Detailed handbooks, certification curricula, and custom workshops have been provided to county assessors, commissioners, clerks, treasurers, sheriffs, and employees of these elected officers.
- ◆ Programs and resources have been provided since 1982. Beginning in 1992, certification curricula were developed. In recent years, 80 courses per year averaging 21 persons per course or approx. 8,400 credit hours of instruction are being provided. Approximately 70 people per year complete certifications.
- ◆ In addition, the in-depth county officer handbooks and purchasing handbook are updated on a regular basis. During fiscal 2004, the Treasurer’s and Commissioner’s Handbooks were updated for statutory changes and upgraded to interactive CD ROM format.

Impact:

- ◆ County officers from 70 of the 77 counties attended training.
- ◆ All counties received updated Handbooks.

- ◆ County Clerks are investigating a statewide, online system of providing real estate records. Savings will be enjoyed by banks, title companies, abstractors, appraisers, real estate agents, and others.
- ◆ Elected officials will escape costly and embarrassing lawsuits (payable by the public) through hiring, firing, interviewing, and supervisory skills training.
- ◆ Elected officials will save money and illegalities through purchasing procedures training.
- ◆ Elected officials, especially new ones, often comment on the breadth and depth of information provided. Further, they often mention the helpfulness of interaction with other elected officials during training sessions resulting in implementation of new methods of achieving duties.

Scope of Impact: Statewide

Source of Funding: Legislative appropriation through the State Auditor and Inspector in partnership with the Center for Local Government Technology, OSU.

Contact:

Notie Lansford
311 Ag Hall
Oklahoma State University
Stillwater, OK 74078
Phone: (405) 744-6555
Email: nlansfo@okstate.edu

Key Theme - Parenting

Title: Parenting and Marriage Education

Issue:

During 2002 Bryan County ranked 62 out of 77 counties in the number of confirmed cases of child abuse and neglect. Bryan County's rates of birth to single women and the number of births to teenage girls are much greater as compared to the state average. For example, during 2002, more than 4 out of 10 births were to single women, and 1 out of 5 births were to teenagers. When Oklahoma's divorce rate along with Bryan County's relatively high juvenile arrest rates as compared to the state average is factored in, it is clear that many Bryan County children are not the recipients of quality parenting.

What Has Been Done:

Since 2002 Bryan County Cooperative Extension has embarked on an aggressive and proactive set of programs designed to strengthen family relationships and parenting skills. Two marriage education workshops, The Prevention and Relationship Enhancement Program (PREP) with the Oklahoma Marriage Initiative, and two parenting education workshops, Guiding Young Children have been taught in Bryan County since July 2004. Each workshop has a series of six classes. Currently, there are 3 PREP workshops in session. Two of them are at a local high school. Also, at the high school level, there were 5 classes taught at 2 different high schools about what it cost to raise a child. Many of the programs have been delivered through partnerships with The Bryan

County Youth Services, Inc., Choctaw Nation of Oklahoma, The Department of Human Services, Durant High School, Lifespan Counseling, and a local counselor.

Impact:

Program participants came from a variety of sources; referrals from the Department of Human Services, newspaper articles, flyers from child care centers, high school students, Southeastern Oklahoma State University Child Resource & Referral, TV ad on our local channel, Choctaw Nation of Oklahoma, TANF clients, and referral from former students. The Department of Human Services and local judges are requiring PREP and Guiding Young Children certificates by program clientele.

Ninety percent of the participants in the Guiding Young Children Program rated the class as much better than other forms of parenting programs to which they have been exposed. Virtually, all participants indicated that skills learned during the classes were being applied consistently in the home. One hundred percent of the participants believed that expenditures of tax payer dollars for this program were appropriate.

The majority of PREP participants felt that the program was beneficial to their relationships. Of the topics covered, relationship coping, communication skills and problem solving skills were cited more often as being the most helpful in the program.

Of the 70 participants that participated in the "Babyopoly" class, 85% completed the written evaluation, and 100% of those rated the program as valuable and informative. Most students reported in their evaluations that they learned that it is far more expensive to raise a child than they assumed. Most of them indicated that they were going to wait until they completed their education before having children.

Scope of Impact: State Specific

Contact:

Glenda Wiley
Bryan County
OSU Extension Educator
Family and Consumer Science/4-H
P.O. Box 749
Durant, Oklahoma 74702
Phone: 580-924-5312
Email: wileygg@okstate.edu

Key Theme - Tourism

Title: Enhancing Tourism and Stimulating the Economy in Alfalfa County

Issue:

Alfalfa County is located in the Northwest region of Oklahoma and is surrounded by several tourist attractions. Alfalfa County natural resources are one of its strongest assets. These natural attractions are extremely enticing to nature tourist, bird watchers, hunters, fishermen, history buffs and selenite crystal diggers. We are a premier bird watching location in the state and often host rare and endangered birds. The County also has the only remaining original sod house in Oklahoma. We have tourism at its finest. With all this rich natural diversity, we have an abundance of assets to promote and market tourism as an economic tool.

What Has Been Done:

The Initiative for the Future of Rural Oklahoma in Alfalfa County is a three-year grant to promote tourism and economical opportunities. We have completed the second year of the three-year grant. The second year continued on-going projects with the duplication of the video “Alfalfa County All That and More” and the completion of the kiosk panel. Other projects included networking with other agencies securing additional grant funds, “Discover Oklahoma Travel Show” and the PRIDE Training program. During this past year, several communities in Alfalfa County had the opportunity to be a first time host for the Oklahoma Freewheel and hosting a bus tour for the National Rural Development Partnership. Additional planning meetings have been conducted to provide resources for the mini videos which will provide more in-depth information for our County. Visual Merchandising students from Oklahoma State University visited Cherokee to give a new look to three stores. On-going efforts are being made by the application of a license for the Travelers Information Station.

Impact:

- Web site enhancement
- Video duplication /distribution
- Apprentice/mini videos
- Agencies networking
- Communities working together
- PRIDE Training 24 trained
- PRIDE Training 12 programs reaching 353 residents
- Discover Oklahoma Travel Show
- Oklahoma Free Wheel
- 407 contacts sessions/programs
- 724 Contacts one-one/activities
- Team Planning Meetings
- Visual Merchandising 3 stores
- License application TIS

Scope of Impact: County, State

Funding Source: State, Smith-Lever

Contact:

Shelly Davis
Alfalfa County Oklahoma Cooperative Extension Service

EEFCS/4-H Youth Development & CED
300 South Grand, Courthouse
Cherokee, Oklahoma 73728
Phone: 580-596-3131
Email: daviss@okstate.edu

Title: Strategic Plan for Sustainable Tourism and Economic Development in Murray County

Issue:

Murray County, located in the heart of the Arbuckle Mountain Region, is a Mecca of beautiful natural resources, geological formations, clear springs, and pristine waters. Over two million visitors a year enjoy the county's attractions and recreational opportunities. Tourism is Murray County's number one source of income, generating tax dollars to support our county infrastructure along with many of our services. This scenario sounds wonderful, however it soon becomes a nightmare when groups and communities do not work together, do not communicate with each other, pull different directions in attracting tourists, and are not totally aware of the resources available to capitalize on for the opportunity to enhance further economic diversity of increased tourism to the county?

What Has Been Done:

Through the "Initiative for the Future of Rural Oklahoma" grant dollars the following items have been established, completed, or designed to promote tourism coordination efforts in Murray County

- An office was set up to house a newly hired Tourism Development Assistant and to serve as a place for the community to contact regarding questions on tourism development and treatment. This office and position are totally new to the county and have never been tried before.
- A county planning retreat was conducted with over 40 community leaders setting down at the table for the first time in the history of the county to begin planning "together"
- Three committees of work were identified at the retreat: (1) Strategic Plan development (2) Beautification of county (3) lodging fee research and initiation for county.
- Strategic plan has been developed and work continues on items in the plan
- Two joint Chambers of Commerce annual banquets have been held
- Joint Chambers of Commerce newsletter is being designed and mailed on a quarterly basis
- The Murray County PRIDE program has trained over 200 people to date and continues to train groups across the county
- Leadership Murray County has been established with a partnership between the Murray County OSU Extension Service and the Southern Oklahoma Technology Center. Class I has graduated 30 members, Class II will graduate 22 members in May 2005.
- Leadership classes have both participated in the county beautification plan. Class I landscaped the Sulphur and Davis new Chambers of Commerce buildings; Class II has purchased and had painted two fiberglass buffaloes to place in each of the two cities.

- Lodging tax was taken to a vote of the people in May of 2004 and was defeated by 59 votes. Issue is under refinement to take back to the people by the end of 2005.
- First ever “Long Range Planning Summit” was held in February 2005 with over 60 community leaders and groups identifying and prioritizing plans for the future of the county.
- Plans have been made to begin framing the issue of annexation and zoning. Once framed it will be presented to the public for deliberation.

Impact:

- Over 600 people voted on the lodging tax
- Over 60 people attended and participated in the long range planning summit
- Over 200 people have been trained in the Murray County PRIDE program
- Fifty-two students have been through the Leadership Murray County program
- Thirty active Leadership Murray County Alumni are conducting the program for Class II
- A \$500 grant was received to assist with financing a Leadership Class II overnight retreat
- Over \$4,000 of private dollars were gathered to finance the lodging tax vote
- Over \$20,000 of private dollars have been gathered to support the IFRO grant and its identified areas of work in the county
- A social change has taken place from the aspect of people in key leadership roles are beginning to think of ways the two communities can continue to work together.

Funding: State, Smith-Lever

Contact:

Debbie Sharp, Extension Educator FCS/4-H & Youth Development
 Murray County Ext. Office
 4000 Highway 7 West
 Sulphur, OK 73086
 Phone: 580-622-3016
 Email: sharpd@okstate.edu

Key Theme – Workplace Safety

Title: Poison Ivy Identification Training for County Workers

Issue:

Local governments have a recurring problem with workers contacting poisonous plants. Tulsa County Safety Supervisors tell us the greatest generator of workers’ compensation claims and resulting time off from work is contact with poison ivy. This is an issue for our County road maintenance and park workers who routinely work in brushy areas. Their supervisors asked Extension to address this issue.

What Has Been Done:

Three days were made available during the winter and early summer of 2004 to teach poison ivy identification to county highway and park workers. Our office prepared a “Power Point” presentation, purchased color posters and laminated color photos of poison ivy in different season

and situation. This was used in teaching along with collected and preserved samples of the plants for passing around the group. The samples were pressed and dried, then sealed in laminate and labeled. Attendees then had life like, yet guarded, samples to handle without the concern of getting a rash. They were each given a handout on poison ivy prepared by this office. It has a life-size drawing of all parts of the plant featuring summer and winter appearance. The backside gives tips on avoiding contact via hands, clothing and tools used on the job.

Workers were then taken to a site where poison ivy is prevalent. They ran through an exercise to get them familiar with the difference in poison and ivy and other vine like plants that do not cause a rash, such as Virginia creeper. Particular effort was made to teach them all forms of the plant: seedling, shrub, vining and dormant appearance. The oils in poison ivy are active year round.

Impact:

Tulsa County Government informed us that, as a direct result of this training, no workers present at the training filed workers compensation claims or required time off due to contact with poison ivy. The savings to the County in 2004 was \$1500.00 due to a reduction in such claims. This is the usual cost of exposure to this plant over the course of work year due to worker contact. Over 65 workers have been trained.

Another result is that our office has been invited to train local oil and gas pipeline company field workers in identification of this plant. This is a very simple idea that is readily adaptable nationwide by other Extension offices. It provides a real service at a local level.

Finding Source: State; Smith-Lever

Scope of Impact: County Government Field Workers

Contact:

Sue Gray, Extension Educator, Horticulture
Tulsa County OSU Extension Center
4116 E. 15th Street
Tulsa, OK 74112
Phone: 918-746-3717
Email: sgray@okstate.edu

Title: Oklahoma AgrAbility Project

Issue:

Disabling injuries have a significant impact on the agricultural population. In a recent survey of Oklahoma farmers and ranchers, 26% of the respondents reported a disability. This translates to over 17,000 individuals who have a disability that limits their ability to perform certain work-related tasks as well as difficulties with tasks associated with daily living. To remain actively engaged in agricultural-related work, these rural families must overcome significant barriers – isolation from rehabilitation technology, lack of information by disabled individuals, excessive distance to travel to obtain adequate services, and lack of financial resources. To address these barriers, Oklahoma agricultural families affected by disabilities need to be aware of new services;

learn about low-cost modifications to the farm, home, equipment, and work site operations; and obtain technical assistance to make appropriate modifications.

What Has Been Done:

A four-year AgrAbility grant from USDA-CSREES was secured by the partnership of Oklahoma Cooperative Extension Service, Langston University through the Center for Outreach Programs, and Oklahoma Assistive Technology Foundation with services provided through Oklahoma ABLE Tech. The mission of the Oklahoma AgrAbility Project is to provide education, assistance, and support to farmers, ranchers, and their families who have a disability or debilitating injury that limits their ability to perform essential farm tasks. Project awareness activities include: articles in regional and local newspapers, Ag at OSU, and various other media sources; booths at the Oklahoma Farmers Union Convention, FFA State Convention, Oklahoma Farm Bureau Annual Meeting, Tulsa Farm Show, and the Enid KNID Agrifest; presentations to various groups within extension; and a quarterly newsletter highlighting health and assistive technology issues. A workshop, co-sponsored with INTEGRIS Jim Thorpe Rehabilitation, was held to educate occupational therapists and physical therapists on special needs to consider when rehabilitating Oklahoma farmers and ranchers.

Impact:

Over 50,000 individuals have been made aware of the program through trade shows and media sources. AgrAbility partners have attended over 60 public awareness events. Thirty-six therapists, occupational and physical, attended the workshop receiving 11 continuing education contact hours. Over 150 individuals, who have a variety of injuries and/or impairments, have been provided a variety of resources, including possible farm site modifications to make daily tasks easier and safer.

Funding Sources: USDA-CSREES, State, Smith-Lever

Scope of Impact: State specific

Contact:

Dr. Raymond L. Huhnke, Professor
Biosystems and Agricultural Engineering
223 Ag Hall
Oklahoma State University
Stillwater, OK 74078-6012
Phone: 405-744-5425
Email: rhuhnke@okstate.edu

Key Theme – Youth Development/4-H

Title: Roger Mills County Outdoor Classroom

Issue:

In 1992, the 4-H Youth Development Program Advisory Council identified the need to provide conservation programs for youth. This was a time when recycling solid waste and water

conservation were priority issues for people statewide. The PAC decided that the best way to educate adults was to first teach youth and encourage them to share what they learned with the significant adults in their lives.

What Has Been Done:

The Extension staff made contact with the Natural Resource Conservation Service and a partnership was formed. These two agencies established a common goal of establishing an outdoor classroom for third grade students in our county.

The partnership between NRCS and Extension has conducted an annual outdoor classroom experience for youth for 12 years and shows no sign of ending. It has survived personnel changes, funding challenges and stormy weather.

We have reached about 2,253 third grade students with the help of 595 adult volunteers over the past 11 years. The program has expanded to include schools from Beckham, Washita and Dewey Counties along with the Roger Mills County students.

Impact:

At least 10 state agencies besides the original partners are involved in the outdoor classroom each year. The students rotate from one workshop to another every 20 minutes throughout the day. They are exposed to subjects related to recycling, water conservation, animal tracking, wildlife identification and conservation, identification of soil types, soil conservation practices, natural resource management, water pollution, career opportunities, etc.

As the students enter high school, they often contact the Extension office for resource information when they are writing research papers. They remember a hands-on activity from their third grade outdoor classroom experience and want to know about a certain subject now that they are capable of handling more knowledge.

As a result of conducting the annual outdoor classroom, a Wetland Outdoor Classroom Advisory Committee was established several years ago. We wrote and received a Learn and Serve America grant that started the construction of a permanent wetlands outdoor classroom. We have numerous partners on this project with well over \$150,000 dollars invested in the classroom. It is a very involved project with completion expected by 2005. It will completely be handicapped accessible and the only classroom of its kind in Western Oklahoma and the Texas Panhandle.

Funding Source(s): State; Smith-Lever

Scope of Impact: State Specific

Contact:

Danny P. Cook
Ext. Educator/Ag/4-H Youth Development
Roger Mills County Extension office
Box 9, Fairgrounds
Cheyenne, OK. 73628 0009

Phone: 580-497-3339

Email: cookdp@okstate.edu

Title: Educational Programming in Horticulture for Teachers, 4-H Leaders, and Youth

Issue:

Elementary- and secondary school teachers, 4-H leaders, and youth need access to current horticultural information to teach scientific concepts and design principles. Implementation of horticulture in school curriculum and club activities develops civic pride, community responsibility, scientific inquiry, and lifelong skills.

What Has Been Done:

Hands-on, horticultural workshops and tours for 4-H youth are provided annually during 4-H Round-Up. 4-H members are challenged to compete with one another at the annual 4-H Horticulture Contest, hosted at the Great State Fair of Oklahoma in Oklahoma City.

Hands-on, horticultural workshops for FFA Instructors are provided annually during the summer. FFA students are challenged to compete with one another at the annual FFA Career Development Events and Junior Career Development Events in Floriculture and Nursery/Landscape. Tours of the OSU Teaching Greenhouses and the OSU Botanical Garden are provided throughout the year for Stillwater area teachers, their students, and the Upward Bound Program. Web-based educational programming is provided via OCES Fact Sheets

(<http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-215>), especially the “Gardening with Kids” series; the Horticulture 4-H website (<http://www.hort4h.okstate.edu>); the Horticulture FFA Career Development Events website

(http://www.okstate.edu/ag/asnr/hortla/needham/extension/ffa/ffa_cde.html); and the OKPLANTid website (<http://okplantid.okstate.edu>).

Impact:

Fifty-two FFA youth participated in last spring’s FFA Career Development Event in Floriculture. Sixty-four FFA youth participated in last fall’s FFA Junior Career Development Event in Floriculture. Thirty-eight 4-H youth participated in last fall’s 4-H Horticulture Contest at the Great State Fair of Oklahoma in Oklahoma City. Forty-one Upward Bound students toured the OSU Botanical Garden last summer and learned about career opportunities in horticulture and landscape architecture. Over four hundred teachers and students visited the OSU Teaching Greenhouses and/or the OSU Botanical Garden in 2004.

Funding Source(s): State; Smith-Lever

Scope of Impact: Workshops and tours are “state specific;” however, web-based programming is “multi-state national.”

Contact:

Douglas C Needham, Ph.D.
Dept. of Horticulture & LA
360 Ag Hall
Oklahoma State University
Stillwater, OK 74078-6027

Phone: 405-744-6462

Email: doug.needham@okstate.edu

B. Stakeholder Input Process

The Oklahoma Cooperative Extension Service (OCES) has a well-defined program advisory committee system that provides grass roots input for program planning. Each January or February, county extension staff seeks input from program advisory committee (PAC) members on program needs related to OCES strategic program priority areas. Advisory committee members are selected to represent various geographic areas of each county. They are representative of agricultural and natural resources interests, youth, families, community and government leaders, and the general public. Committee members also represent the ethnic diversity of the county, as well as different socioeconomic groups. These PACs continue as described in the Plan of Work.

During the period, the Division of Agricultural Sciences and Natural Resources updated its strategic plan. This meant that OCES also updated its strategic efforts in relation to the Division's plan. This process required considerable introspection as well as working with various groups representing the publics served by OCES. This process was in addition (but related to) the annual program advisory process mentioned above.

Considerable stakeholder input is also received through other means. 1) The state legislative and administrative branches frequently make laws, conduct hearings, empower taskforces and committees, make regulations, conduct interim studies, and directly express needs and problems which result in priority program issues. Input comes from Extension personnel participating in these processes as well as official directives. 2) Extension also regularly seeks input from commissions, agencies, groups, foundations and other organizations representing various segments of the Oklahoma public. 3) Many key program components and programs within those components have advisory groups made up of stakeholders. 4) The Director has a statewide advisory group representing a wide array of interests relevant to our mission. This group has a three-year rotating membership and meets twice a year. It is also called upon at other times to provide input to items such as extension planning and the Division strategic plan.

C. Program Review Process

No significant changes were made to the program review process stipulated in the Oklahoma five-year plan of work. However, we have begun to consider means of better reviewing and verifying some reports and departmental papers offered as research and extension information in fulfillment of grants and contracts.

D. Evaluation of the Success of Multi and Joint Activities

1). The planned integrated activities reported in section F addressed many of the critical issues of strategic importance to stakeholders. Several of these programs directly addressed issues of cattle

production and forage/hay production. These issues were consistently among the highest priorities included in input from Oklahoma agricultural producers. Similarly, several multi-state activities concentrated on production, management and economic programming related to cattle production, economic situation of farmers and public policy alternatives and actions. Each of which consistently surfaced as an important issue. Both integrated and multi-state planned activities addressed many of the community and economic development issues addressed in the listening sessions mentioned in prior section. Several of these planned activities concerned issues around alternative products - another high priority identified. The cropping integrated activities were very high priorities identified by groups representing some of the leading crops produced in the state - wheat, cotton and peanuts. Many of the pest, pesticide application, invasive species, animal waste management, and water quality issues important to Oklahoma producers don't know state boundaries and the multi-state activities are important in these efforts. National programs such as income taxes, forage testing, water quality, fire training, and youth and school programs improve efficiencies of programming over each state re-inventing the curricula. Rural health care issues are among the most often identified by groups representing communities. Integrated and multi-state activities in this area addressed this issue. Other integrated and multi-state activities addressed high priority areas of IPM and water quality.

2). Integrated activities related to alternative crops (vegetables, watermelons, peaches) particularly addressed and were conducted in areas of the state where small farm, Native American and African American audiences are particularly targeted. Several integrated programs in community and economic development particularly served geographic areas with concentrations of African American and Native American populations. Multi-state programs in alternative crops, policy and structural issues of agriculture, water quality, rural health care, home-based business, and youth also impact traditionally under-served audiences.

3). The integrated research and extension activities and multi-state activities described expected outcomes and impacts.

4). Oklahoma Cooperative Extension Service (OCES) has a long history of integrated planned programs and multi-state planned programs. Those programs reported in sections E and F are only a portion of all programs OCES conducts that are integrated between research and extension and/or are multi-state. Integrated and multi-state programs are conducted because they address the issues, problems and needs expressed by our public and they are more effective or efficient than would be the case otherwise. Thus the answer is yes. Without the closely integrated research, many of the issues and questions raised for and through the extension would not be addressed. Likewise the obviously close relationship created by joint appointments makes the feedback to research from the extension of knowledge and technology immediate. Multi-state planned activities allows extension professionals to rely on one another in the development and sharing of resources, ideas, educational materials, and the development of new and innovative programs. Those planned activities presented in sections E and F are examples of efforts that result in programs that are better and more effective.

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution OSU Cooperative Extension Service

State Oklahoma

Check one:
 Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Competitive/Sustainable Agricultural Production System</u>	<u>421,568.35</u>	<u>839,007.94</u>	<u>927,752.75</u>	<u>774,194.08</u>	<u>730,996.79</u>
<u>Healthier, More Well Nourished Population</u>	<u>28,018.95</u>	<u>62,130.99</u>	<u>40,432.29</u>	<u>-</u>	<u></u>
<u>Protected & Sustained Environment</u>	<u>26,771.31</u>	<u>62,220.45</u>	<u>39,419.93</u>	<u>42,469.82</u>	<u>51,370.78</u>
<u>Enhanced Economic Opportunity & Quality of Life</u>	<u>60,756.96</u>	<u>106,287.66</u>	<u>121,287.35</u>	<u>131,413.09</u>	<u>160,297.43</u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
Total	<u>537,115.57</u>	<u>1,069,647.04</u>	<u>1,128,892.32</u>	<u>948,076.99</u>	<u>942,665.00</u>

Director

Date

Reports

CSREES Goal 1: Integrated Activities

Name of Planned Program/Activity: Livestock Production-Marketing Decisions

Progress Report: Cow-calf producers need to know the factors influencing cow-calf enterprise performance. Economic performance can be measured in several ways. Data from 394 SPA (Standardized Performance Analysis) cases in the southern plains between 1991 and 2001 enabled studying factors affecting cost of production, pounds of calves produced, and return on assets. Costs increased with increasing feed fed, calf death loss, and investments in real estate, livestock, and machinery and equipment. Lower costs were associated with larger cowherds, higher calving percentage, shorter breeding season. Higher pounds produced was related to investment in livestock and higher calving percentage, while production was reduced by a higher calving death rate and a longer breeding season.

Captive supplies have been a divisive issue in the beef industry for fifteen years. Implementation of mandatory price reporting by packers was intended to increase information on captive supplies and improve price discovery. Data were collected from USDA mandatory price reports for the first three years following implementation of the new price reporting procedures. Indeed, additional information is available, both on prices and quantities of captive supplies, since mandatory price reporting began. The new data, now more timely and more detailed, allowed estimating the relationship between types of pricing methods for fed cattle and cash market prices. Consistent with previous research, a small negative relationship was found between increasing quantities of formula priced fed cattle and cash market prices. A positive relationship was found between negotiated priced trades and cash market prices. And surprisingly, a positive relationship was also found between the quantity of packer-owned fed cattle and cash market prices.

Previous research has found small price premiums paid by buyers for preconditioned calves. Data were collected at twenty sales from 2001 to 2003 where preconditioned calves from the Oklahoma Quality Beef Network (OQBN) were sold. Models were estimated to determine the price premium (if any) at these sales for preconditioned calves. Buyers at some sales did not distinguish between preconditioned calves and those managed in another manner. However, at several sales, price premiums ranged from \$1.87 to \$13.73/cwt. Premiums were more consistent when compared with calves not weaned and where no information was known by buyers regarding vaccinations. When comparing OQBN calves to this calf-management group, the average price premium increased each year, from \$1.51/cwt. in 2001 to \$3.95/cwt. in 2002, to \$5.89/cwt. in 2003. This research enables producers to assess the marginal costs and returns from preconditioning programs.

Contact: Clement Ward

Name of Planned Program/Activity: Expanding value-added calf management in Oklahoma

Progress Report: Research and educational efforts were continued to encourage further adoption of value-added calf management throughout Oklahoma. The objective is to add value to Oklahoma's calf crop and capture at least part of the added value for both producers and their customers. One example of this effort is the Oklahoma Quality Beef Network (OQBN). The

OQBN is a collaborative effort between the Oklahoma Cattleman's Association and the Oklahoma Cooperative Extension Service. The OQBN includes a source and process verification system and marketing alternatives for producers. The process verification system is focused on standard health and management procedures that occur around the time of weaning. In general, OQBN process verification (or certification) requires producers to wean their calves at the home ranch for a minimum of 45 days and follow specific quality assurance, vaccination and nutritional guidelines. Faculty and extension personnel have collaborated to collect extensive evaluation data.

One evaluation data set now includes just over 35,000 head of OQBN certified and non-certified cattle. These data have been used to determine the financial impact of the program. Results from these research projects have been published in two students' thesis and a portion of the data has been published in a peer-reviewed journal. This past year, 1,711 OQBN certified calves representing 45 different sale lots from eight different OQBN sales were tracked for 90 days after the sale event. Health and death loss of these OQBN certified cattle was compared to health and death loss of CONTROL lots of cattle. The criteria for selecting CONTROL lots of cattle included the following: similar breed type, similar weight class and quality, the cattle had to be purchased during the same week, and the control cattle must have no known health history. The incidence of one or more treatments for sickness (expressed as mean % of the sale lot or management group) was greater ($P < .01$) for CONTROL (29.1%) compared to OQBN certified cattle (6.7%). Similarly, the incidence of death loss was significantly higher ($P < .01$) for CONTROL (3.0%) compared to OQBN certified cattle (.1%).

Contact Name: David Lalman

Name of Planned Program/Activity: Effect(s) of the Bird Cherry-Oat Aphid (*Rhopalosiphum padi*): Barley Yellow Dwarf Virus Complex on Winter Wheat

Progress Report: The effect of bird cherry-oat (BCO) aphids carrying barley yellow dwarf virus (BYDV) or not carrying BYDV on five winter wheat varieties (Karl 92, 2174, Ok 102, Coker 9663, and Roane) was studied in a replicated field trial during 2003-2004. Following infestation with aphids, insect cages were used to retain and separate viruliferous (VIR) from aviruliferous (AVR) BCO aphids and to protect non-infested controls from being infested with aphids. Aphid counts were made 9 and 14 days after infestation. After the 14-day count, cages were removed, and aphids were killed with an insecticide. Subsequently, plots were sprayed as needed to exclude reinfestation by aphids. Forage production was measured twice, once in November and again in January. BYDV incidence (percentage of plot showing BYDV symptoms, number of fertile heads, yield and thousand kernel weight (TKW)) were determined in 2004. None or few aphids (< 5 /plot) were found in non-infested control plots, but counts of $> 1,000$ aphids/foot of row were typical in infested plots. For all varieties, forage production from plots infested with AVR or VIR BCO aphids was reduced compared to non-infested controls. BYDV incidence was greatest (27-35%) in Karl 92, which is considered susceptible to both aphids and BYDV. However, BYDV symptoms were observed in all plots. No effect by the BCO aphid:BYDV complex was observed on production of fertile heads, yield or TKW, which may indicate that these wheat varieties were able to recover from the early-season infestation of AVR BCO aphids. However, the lack of significant reductions by VIR BCO aphids is not clear. Further, these effects may have been confounded by the presence of wheat soilborne mosaic virus, which was severe throughout the trial.

Contact Name: Robert M. Hunger

Name of Program/ Activity: Potential impact of *Phytophthora ramorum*, cause of the Sudden Oak Death epidemic in California, for Oklahoma ornamental nurseries

Progress Report: During 2001 a new plant pathogen, *Phytophthora ramorum*, was found killing oaks and forest understory plants at an alarming rate of coastal forests in California and Oregon. It was subsequently found in ornamental nurseries in California, Oregon and Washington. These nurseries routinely ship plant material long distances to other parts of the USA, including Oklahoma, raising fears that the pathogen could be spread to other regions by ornamental nursery material. Preliminary surveys of Oklahoma wholesale nurseries were conducted by Oklahoma State University in 2002 and 2003, but *P. ramorum* was not detected. During 2004 a more comprehensive survey was mandated by USDA-APHIS and the nursery sampling was carried out by the Oklahoma Department of Agriculture, Food and Forestry. The Plant Disease & Insect Diagnostic Lab assayed all of these samples using real time PCR and culturing. *P. ramorum* was found in one Oklahoma nursery in a block of plant material that had recently been shipped from California. The block was destroyed and repeated sampling showed that *P. ramorum* had been completely eradicated from the nursery. In addition to presenting educational programs to Oklahoma's nursery industry, Oklahoma State University participated in a national USDA program, *Phytophthora ramorum* – Educate to Detect, delivered to Master Gardeners throughout Oklahoma.

Contact: Sharon L. Von Broembsen

Name of Planned Program Activity: Cooperative Projects 2004

Progress Report: Projects during 2004 included efforts directed at evaluation of vegetable germplasm, screening of new weed control materials for use in vegetable crops. Detailed results of these studies are included in the 2004 Vegetable Trial Report MP-164 and are available through the Department of Horticulture at Oklahoma State University.

Contact: Lynn Brandenberger

Program Title: Pecan and Beef Cattle Production Systems.

Progress Report: The annual Oklahoma Pecan Management Course is now in its 7th offering and has reached over 250 growers since 1997. The course continues to be the standard for excellence in pecan extension programs for commercial producers. Started in January 2004, a web based pecan management course was launched to reach producers unable to take the resident course.

Contact: Dean McCraw and Becky Carroll

Program Title: OK Wine Grape Cultural Systems and Cultivar Evaluation

Progress Report: A grape research/demonstration cultivar trial consisting of 13 cultivars of wine grapes with potential for production in OK as well as two rootstock evaluation trials was established in April 2001 at the Oklahoma Fruit Research Station. Entries are under evaluation for hardiness, vigor, growth characteristics and wine quality. On farm test plantings have been established with commercial vineyards at three locations to compare grafted with own root vines of 12 varieties under varying climatic conditions in Oklahoma. Likewise, pest management programs including insect and disease scouting and assessment are underway on station plots as well as grower vineyards in at least three locations.

The Extension program accompanying this project includes the Oklahoma Grape Management Course now in its fourth offering. The course that consists of 7 monthly meetings utilizes the research station plots throughout the year and has included over 300 present and prospective grape growers.

Contact: Dean McCraw and Becky Carroll

Name of Planned Program/Activity: Organic Vegetable Production

Progress Report: Scientists at the Wes Watkins Agricultural Research and Extension Center in Lane, Oklahoma have initiated a project involving certified organic vegetable production in Oklahoma. Research and extension personnel from Oklahoma State University, as well as scientists from USDA/ARS/SCARL, are working jointly in this program. In 2003, land that previously had been planted with Virginia Pine was cleared, and preparation began for future organic vegetable research studies. Soil tests were taken, and lime was applied according to recommendations. Poultry litter was used as a fertilizer, and a cover crop of turnips was planted. In 2004, the land was partitioned into four sections, with tomatoes, sweet corn, southern peas, and watermelon being grown on respective quadrants of the land. All cultural practices and all materials used on the designated land are in compliance with the National Organic Program.

Records were kept of pest problems, severity of problems, cultural techniques used, and crop yields from each quadrant of the field. A field day was held in June, 2004 to demonstrate the problems and solutions associated with each crop to growers and consumers. Results were also presented at the Oklahoma-Arkansas Horticulture Industries Show in Fort Smith, Arkansas in January of 2005, at the SR-ASHS meeting in Little Rock, Arkansas in February, 2005, at the East Texas Fruit and Vegetable Convention in Tyler, Texas in February, 2005, and at the Oklahoma Organic Growers Association meeting in Oklahoma City in March, 2005. Written results are being published in the Horticulture Industries Show Proceedings, and in HortScience. Various scientists from the Lane Agricultural Center are working with the Oklahoma Organic Growers Association to determine the major obstacles to organic vegetable production, to determine solutions to these obstacles, and to present this information to growers and association members.

Contact: Warren Roberts

Name of Planned Program/Activity: Increased Use Of Better Adapted/More Appropriate Turfgrasses That Are More Resource-Use-Efficient

Progress Report: The turfgrass industry remains under intensive scrutiny to reduce labor, pesticide, fertilizer and other cultural inputs while providing cost effective i) sod or sprig

production, or in the case of maintained turf, ii) soil erosion control, high visual quality and/or functional quality for the playing of sports. We have tested some 1,395 commercially available and 3,075 experimental turfgrass varieties across 21 species for adaptation to lawn, roadside, parks & grounds, golf course and sod production applications in OK during the last 15 years. Research continued in 2004 regarding cultivar testing and proper management. Research results can be used directly by the turfgrass specialist or end user when making recommendations concerning turfgrass selection for a given site. Over 435 consultations were conducted in 2004 via phone, fax, US mail, email and site visits concerning selection, installation and management of the best adapted turfgrass varieties. During phone consultations, approximately 73% of consultees indicated that they would pursue purchase and installation of the best adapted cultivars as indicated by the turfgrass specialist. This percentage is expected to rise once addition stocks of newly released cultivars increase to fill market demand. Over 610 individuals received training on proper turfgrass selection and management in 9 workshops and conference conducted in the region during 2004. During new construction and renovation of speciality turf areas such as golf courses and athletic fields, better-adapted turfgrass varieties are being utilized in over 75% of cases in Oklahoma. Fungicide use for dollarspot disease control has been reduced by at least 10% when L-93, A-1, A-4 and G-2 creeping bentgrasses have been implemented on golf course putting greens in Oklahoma.

Contact: Dennis Martin

Name of Planned Program/Activity: Integrated Strategies For Management Of Spring Dead Spot Disease Of Turf Bermudagrass

Progress Report: Spring dead spot (SDS) is the most serious disease of turf bermudagrass in Oklahoma and in the transition zone states where the temperate and subtropical climate zones converge. Six multi-year trials that screened 80 bermudagrasses for SDS disease resistance have been completed. Three trials testing 52 varieties remained underway in 2004. Ten varieties with good or very good SDS disease resistance have been identified thus far in our joint state cooperative effort with Kansas State University and Colorado State University, with five of these varieties commercially available in the region. Patriot bermudagrass, a vegetatively propagated variety with improved cold hardiness and increased SDS disease resistance, was developed at Oklahoma State University (OSU) and commercially released in 2002. The first commercial sales of Patriot were made in Maryland (late 2003) and acreage was sufficient in Oklahoma for commercial sales to begin in 2004. An additional sod production licensee (Missouri) for Patriot was secured in 2004. Riviera seeded bermudagrass, developed and released by Oklahoma State University continues to gain in popularity in the US and has now been used on athletic facilities in Japan and Italy. Three licensees of Riviera sod are now in place across the US in order to meet the demand for sod of this variety when high erosion potential of sites precludes the use of seed. Four high visibility college stadium fields in Oklahoma have now been converted to the newest and best adapted bermudagrass varieties over older common types. Proper varietal selection information as well as integrated management strategies for SDS management was transferred to 350 turf industry leaders at 2 state/regional conferences 7 master gardener training sessions, the 4th AR-OK Turfgrass Short Course, and the 59th Annual Oklahoma Turfgrass Conference. All attendees (100%) indicated that they would integrate our recommendations into their existing programs to manage the disease. Following our recommended practices will not eliminate but rather reduce severity of the disease, decrease time to recovery, and reduce disease management costs relative to use of fungicides alone.

Contact: Dennis Martin

Name of Program/Activity: Palmer Amaranth Duration of Competition

Progress Report: Two field experiments were conducted at the Oklahoma Panhandle Research and Extension Center in Goodwell, OK to examine the effect of duration of Palmer amaranth growth on corn yield. Weeds that germinate and emerge with the crop are more competitive than weeds that germinate and emerge later. As long as the weeds that emerge with the crop are removed within a short period of time after crop emergence, crop yield is not significantly reduced. The amount of time that the weed can grow with the crop before competition reduces yield varies among crop and weed species. The experiment was established as a randomized complete block design with three replications. The plot size was 10 feet by 25 feet. Corn was planted at the rate of 31,000 seed per acre in May. The sites were heavily infested with a natural population of Palmer amaranth. The Palmer amaranth germinated and emerged at the same time as the corn and was removed by hand at 1, 2, 3, 4 and 6 weeks after emergence. Corn yield was not affected by Palmer amaranth provided the weed was removed within 3 weeks after emergence.

Contact: Curtis Bensch

Name of Program/Activity: Evaluation of Various Herbicides and Timing of Application in a Roundup Ready Corn System

Progress Report: A field experiment was conducted at the Oklahoma Panhandle Research and Extension Center in Goodwell, OK to examine efficacy of various herbicides and herbicide tank mixes in a Roundup Ready corn system. Herbicides examined were Cinch ATZ, Steadfast, Callisto, Atrazine, Distinct, Matrix, and Roundup weather max. All herbicides were applied at labeled rates. The experiment was a randomized complete block design with four replications. The plot size was 10 feet by 25 feet. Palmer amaranth was the only weed species on which control data was taken., and control ranged from 96 to 100% control.

Contact: Curtis Bensch

Name of Program/Activity:

Evaluation Of Palmer Amaranth Control With Various Pre Herbicides And Glyphosate In A Roundup Ready Corn System

Progress Report: A field experiment was conducted at the Oklahoma Panhandle Research and Extension Center in Goodwell, OK to examine Palmer amaranth control in corn with various herbicides and herbicide tank mixes. Herbicides examined were Lexar, Bicep II Magnum, Lumax, Princep 4L, Guardsman Max 5SC, Harness Xtra 5.6L, and Keystone 5.25 SE. All herbicides were applied at labeled rates. The experiment was a randomized complete block design with four replications. The plot size was 10 feet by 25 feet. Palmer amaranth was the only weed species on which control data was taken. Palmer amaranth control ranged from 79 to 99% control.

Contact: Curtis Bensch

Name of Program/Activity: Evaluation of Various Herbicides for Fallow Weed Control Following Wheat

Progress Report: A field experiment was conducted at the Oklahoma Panhandle Research and Extension Center in Goodwell, OK to examine efficacy of various herbicides for weed control in a no-till summer fallow period. Herbicides examined Balance Pro, Valor, Callisto, Axiom, Ally XP, Atrazine 4L, Roundup Ultra Max, and Spartan. All herbicides were applied at labeled rates. The experiment was a randomized complete block design with four replications. The plot size was 7 feet by 25 feet. Treatments were applied 3 weeks after wheat harvest with a CO₂ sprayer, and weed control ratings for Palmer amaranth and volunteer wheat were taken 4 and 8 weeks after application. Balance Pro and Ally XP were the only two herbicides that provided better than 90% control of Palmer amaranth.

Contact: Curtis Bensch

Name of Planned Program/Activity: Alfalfa Integrated Management

Progress Report: The AIM Team works in an integrated research and extension fashion to improve the information available for alfalfa production. Oklahoma Alfalfa on the Web <<http://alfalfa.okstate.edu>> is a web page designed to supply practical and timely alfalfa production information. It contains applied information to assist in profitable production of high quality forage desired for marketing and use in Oklahoma and the surrounding area of the southern Great Plains. Information supplied has long-term applications such as stand longevity and immediate utility such as updates on current insect infestations. The ultimate audience for the Oklahoma Alfalfa is alfalfa producers; however, much of the information may reach them through County Extension Educators, Agricultural Consultants, and Crop Scouts. The site contains several distinct parts. One part is the Oklahoma Alfalfa Production Calendar. Other parts include Alfalfa Production Key Words, Links to Other Alfalfa or Forage Sites, Alfalfa Variety Test, Oklahoma Alfalfa Hay & Seed Association, and the Alfalfa Alert. This web site also includes a link to a 1909 Ag. Expt. Station Bulletin, describing alfalfa production in Oklahoma around the turn of the century. These web pages link users to Fact Sheets, Current Reports, Production Technology Reports, OSU Extension Circulars, and Other References, both on-line and others. Several hundred photos are provided to help understand problems and opportunities for alfalfa production. The web site has users from all alfalfa producing areas of the world. It has been on-line since 1997 and has received a Certificate of Excellence from the American Society of Agronomy, Educational Materials Program.

Contact: John Caddel

Name of Planned Program/Activity: Agricultural Law

Progress Report: Research was conducted related to estate planning, contract law, marketing orders, liability issues, biotechnology regulation and controlled burning regulation. Information was provided to extension clientele in the form of written materials that were developed, presentations and responses to phone questions. Information was provided directly to clients in some cases as well as to county agents or others who then used the information to serve their

clients. Estate planning workshops were conducted and an on-line website entry for controlled burning regulation was developed and is currently in the review process.

Contact: Marcia Tilley

Name of Planned Program/Activity: Integrated Research and Extension Activities for Cooperatives

Progress Report: A research project investigated the feasibility of cooperatively owned high speed (60 bale hour) cotton gin. The project was conducted in conjunction with Producers Cooperative Oil Mill, one of Oklahoma's largest and most successful processing cooperative. The research determined that a efficient cotton ginning operation, organized as a closed cooperative, would achieve a return on investment comparable to an ethanol plant or other high-profile value-added projects. The research results were presented at cooperative industry meetings and have been submitted for presentation at the 2005 Annual Meeting of the NCR-194 Regional Research on Cooperatives. Output from the research project included a feasibility template that was made available through the Agricultural Resource Marketing Center, a national clearing house for value-added information. A producer group in Northern Oklahoma/Southern Kansas is currently using the feasibility template to analyze the feasibility of a major gin expansion.

Contact: Phil Kenkel

Name of Program/Activity: Using the Oklahoma Mesonet for Decision Support in Agriculture and Natural Resources

Progress Report: A continuing emphasis which integrates research with extension is the development of weather-related management tools for agriculture and natural resources and their implementation on the Oklahoma Mesonet, the statewide network of over 115 automated stations reporting weather and soil data every 15 minutes. These management tools consist of various useful maps of data derived from the Oklahoma Mesonet as well as various weather-based models which use Mesonet data. With respect to the latter, products include models for fire danger, atmospheric dispersion, evapotranspiration, insect pests, disease pests, and livestock heat/cold stress. In 2004 a new model for spinach white rust was implemented (including a forecast component). In addition, irrigation scheduling products for agronomic and horticultural crops were revised and implemented. Programming support for these products is provided by the Oklahoma Climatological Survey in Norman, OK. These products are available on the Oklahoma AgWeather web site (<http://agweather.mesonet.org>). Educational and promotional activities for the Oklahoma Mesonet and its Web-accessible products continued in 2004, with a series of three regional computer workshops in November.

Primary Contact: Dr. J. D. Carlson, Biosystems and Agricultural Engineering

Name of Program/Activity: Evaluation of a New Dead Fuel Moisture Model in a Near-Real-Time Data Assimilation and Forecast Environment

Progress Report: This has been an ongoing project with the US Forest Service, but with

extension implications for Oklahoma and the nation. Since 2003 we have been testing a new numerical model for dead fuel moisture (important for fire danger modeling). Early in the project, the model was tested against observed Oklahoma dead fuel moisture measurements from 1996-97; model parameters were optimized for best agreement. In 2004 we began integrating the model into the Mesonet data stream, and lately we have integrated it with the 84-hour Eta model forecast of the National Weather Service. The ultimate goal is to integrate this numerical model into the National Fire Danger Rating System as well as the Oklahoma Fire Danger Model, which is one of our most frequently used products on the Oklahoma AgWeather site. This new model will replace current algorithms for dead fuel moisture that were developed in the 1970s, making fire danger calculations more accurate. Integration of an 84-hour forecast component will permit fire danger predictions for Oklahoma over the next 3.5 days (as of now, only current fire danger is modeled).

Primary Contact: Dr. J. D. Carlson, Biosystems and Agricultural Engineering

CSREES Goal 4: Integrated Activities

Name of Planned Program/Activity: Managing Arthropod Pests on Vegetable Crops in the South Central U.S.

Progress Report:

1. Evaluate alternative insecticides for use in IPM programs on watermelon and leafy greens crops and develop databases sufficient to serve as support for registration and use on the crops.

Integration with extension: During FY2004 we conducted nine insecticide evaluation trials in small plots at the WWAREC. Results will be published in *Arthropod Management Tests*. Results were summarized for producers and presented as written technical reports and circulated to producers at the annual HIS meeting in Fort Smith, AR and vegetable producers meetings in Oklahoma City and Hydro, OK. The reports were also circulated nation wide to supporting ag industry leaders and representatives. Results were used to support recommendations made to IR4 during the annual prioritization conference and will be used to support Section 18 and 24c labeling for Oklahoma producers.

2. Developing management strategies for key pests of crops grown under 'organic' certified production methods.

Integration with extension: During 2004 we initiated studies to determine key pests of vegetable crops grown under 'organic' production methods and evaluated pest management strategies. Comparative research projects were conducted in small replicated plots at the WWAREC and effective methods were demonstrated in large plots at the Center.

Contact Name: Jonathan Edelson

Name of Planned Program/Activity: Joint Research and Extension directed at Pest Management Technology Transfer Concerning Biology, Ecology, and Control of Wooden-Structure-Destroying Subterranean Termites – CY 2004

Progress Report: Field and laboratory studies on termite foraging, food preferences, taxonomy, distribution, and life habits are in their second year of study. These studies are centered in Oklahoma, but are national and international in scope and include environmentally safe termite baits, new technology non-repellent termiticides, physical exclusion barriers, termite-resistant building materials, and fate of termiticides in soil. Pest management professionals continued to be trained at the Pinkston Education Facility for Structural and Urban Pest Control. Eleven conferences and workshops were conducted. Additionally, 15 Oklahoma “Experimental Use Permit” (EUP) structures are in a program to evaluate new termite control methodologies that could lead to reduced pesticide use. This is a USEPA and State (ODAFF) approved program that is run by Kard (OSU) to evaluate new methods in protecting wooden structures from termites. Two scientific papers were published, one on termite distribution across Oklahoma, and one on genetic variation within a destructive species. Teaching IPM improved sanitation practices and building practices around structures and improved building monitoring and inspection to eliminate conditions that are conducive to termite infestation, leading to cost reductions for termite control.

1. 72 Oklahoma structural pesticide applicators received training at OSU, achieving certification.
2. 1,700 pest management professionals received training at 11 Conferences and Workshops across the state (including one in Kansas).
3. A field survey to search for the exotic and very damaging Formosan termite, as well as indigenous termites was planned and funded in 2004; initiated 2/05.
4. 2 scientific, 3 extension, and 5 technical papers were published, reaching more than 12,000 readers.

Contact: Brad Kard, Dept. of Entomology and Plant Pathology

Name of Planned Program/Activity: Biology and Management of Pod Decay Diseases on Processing Snap Beans

Progress Report: Snap beans are an important vegetable crop grown for processing in Oklahoma where about 5,000 acres are grown, and in the surrounding states of Missouri, Arkansas, and Texas. Because snap beans are machine harvested in bulk with non-selective cutters, the crop is intensively managed to be nearly free of blemishes from disease, weeds, and insect contaminants. An emerging constraint production across the four-state region is pod decay. Lower pods, particularly those near the soil, develop a wet rot with profuse growth of white, fluffy mold. The disease appears to increase within the canopy through direct contact of diseased pods and leaves with adjacent, healthy pods. Plants in areas with dense foliar growth appear to be most severely affected. Severely affected fields are rejected at a total loss to the grower (production costs) and processor (seed costs). Harvest may proceed in fields with a low level of disease, but the disease often increases dramatically in bulk containers used for transit and storage prior to processing, where the pathogen (s) continue to grow and cause “nested” areas of decayed pods.

With support from the USDA/CSREES Southern Region IPM, Allen Canning Co., several seed companies, and the IR-4 minor use program, studies have continued to determine the causal agent(s) and develop disease management strategies. In addition to the two species of *Pythium* previously identified to cause cottony leak of snap bean, *Phytophthora drechsleri* has been identified as an additional cause of pod decay with cottony leak-like symptoms. Work is underway to develop a standardized pathogenicity test on snap bean pods. Fungicides continue to

provide marginal disease control despite the sensitivity of the pathogens to the fungicides in culture. Snap bean cultivars were evaluated in 2004 for their reaction to pod decay in the field in 2004 with and without the fungicide metalaxyl-M + copper. Fungicide reduced the incidence of pod decay by only 5%, but several cultivars had low levels of pod decay compared to commercial standards. Levels of pod decay were associated with resistance to lodging and reduced canopy density. Field trials that evaluate cultural practices such as planting into no-till stubble to increase plant height and reduce water splash, reduced nitrogen fertility to retard the development of a lush canopy and lodging, and cultivar selection for upright plant architecture are being evaluated. Results obtained thus far have been transferred to clientele in grower and industry educational programs. While a complete solution to this disease has not yet been developed, cultivars with reduced pod decay are now being planted on a trial basis and fungicide use has been discontinued.

Contact: John Damicone

CSREES Goal 5: Integrated Activities

Name of Planned Program/Activity: Preparing Community Service Tools for Rural Decision Makers

Progress Report: This research project continues to develop tools that Extension personnel can use in Oklahoma and across the U.S. The tools can be classified into two categories; (1) impact models and (2) community service budgets. The impact models have been developed to measure the economic impact of the health sector components on the economy. State and local impact models have been developed. These models have been shared with health professionals across the U.S. through the National Rural Health Works Center, which is managed by OSU. Additional health impact analyses were completed for measuring the impact of all hospitals on a state's economy and measuring the impact of the Medicaid program on a state's economy. Community service budgets have been completed for rural health clinics (physician and dentist portion) and are underway for specialty physicians. These tools allow Extension to work with community leaders in determining how to provide essential services within their financial constraints. Budget studies were completed in about 25 communities in Oklahoma in 2004.

Contact: Gerald A. Doeksen

Name of Planned Program/Activity: Economic Implications of the Spatial Allocation of Land.

Progress Report: Oklahoma contains roughly 34 million acres of farmland that is managed by approximately 86 thousand farmers. Each farm contains many fields and each of these fields is managed separately. The USDA's Farm Service Agency has developed a Common Land Unit (CLU) file that enables each field to be located within the landscape global coordinates. We have identified cost functions and profitability measures to apply to the fields in Oklahoma to identify a baseline level of environmental and economic performance.

The type of crop and how that crop is used determines impact of the farming activity on the environment and the level of economic activity for the community the land surrounds. Programs such as the Conservation Reserve, Environmental Quality Incentives, and Wildlife Habitat

Incentives may be better targeted through the use of the CLU to maximize both environmental and economy-wide gains.

Contact: Michael R Dicks

Name of Planned Program/Activity: Retail Trade and Gap Analysis

Progress Report: A database and methodology has been developed and which allows analysis of local retail trade trends. The database is maintained and updated annually. This applied research project is then presented to community leaders as a written report and in PowerPoint format. Typically, the report is prepared on campus and then provide electronically to the local extension educator and the area CD specialist for presentation. Over the past year 22 communities have utilized this program in Extension educational settings. Community leaders express satisfaction with this customized research report.

Contact: Mike D. Woods

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution OSU Cooperative Extension Service

State Oklahoma

Check one:
 Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Competitive/Sustainable Agricultural Production System</u>	<u>81,443.18</u>	<u>167,208.37</u>	<u>185,530.25</u>	<u>225,882.42</u>	<u>148,787.72</u>
<u>Healthier, More Well Nourished Population</u>	<u>1,290.91</u>	<u>2,357.03</u>	<u>4,051.15</u>	<u>5,457.77</u>	<u>6,066.66</u>
<u>Protected & Sustained Environment</u>	<u>41,409.93</u>	<u>81,736.96</u>	<u>67,770.08</u>	<u>64,977.33</u>	<u>70,035.25</u>
<u>Enhanced Economic Opportunity & Quality of Life</u>	<u>32,738.18</u>	<u>58,770.71</u>	<u>58,322.49</u>	<u>63,318.94</u>	<u>98,737.94</u>
Total	<u>156,882.20</u>	<u>310,073.07</u>	<u>315,673.97</u>	<u>359,636.46</u>	<u>323,627.57</u>

Director

Date

Reports

CSREES Goal 1: Multi-State Activities

Name of Activity/Program: Employee Management Conference

Progress Report: The Employee Management for Production Agriculture conference Aug. 12-13, 2004 in Oklahoma City was planned and developed with Kansas State University. Topics ranging from conflict resolution to compensation to risk management were addressed, improving the ability of participants to manage human risk. A combination of general and concurrent sessions allowed participants to choose topics relevant to them. 120 participants from several states heard nationally known speakers address timely topics for owners, managers and employees of agricultural businesses. The audience represented a wide cross-section of agriculture from several different states. Participants from farms, ranches, feedlots, swine operations, horticultural businesses, educators, and other ag-related enterprises found the content both practical and enlightening. Attendees learned basic human resource management principles necessary to compete in the challenging work environment present in many agricultural industries and rural communities. Businesses benefited from the speakers, sessions, and interaction with other managers that took place during this unique two-day learning experience.

Contact: Damona Doye

Name of Activity/Program: Risk Management Education

Progress Report: I participated in the development of several multi-state proposals in the Risk Management area. In one project, I am cooperating with TAMU faculty and staff to develop QuickBooks video-, audio- and website resources comparable to what I developed for Quicken to expand the resources available to producers for managerial accounting. I also taught a portion of a Texas Master Marketer workshop in Gainesville, TX. A proposal has been submitted to cooperate with TAMU and Kansas State in offering further employee management education. A proposal has also been submitted to enhance collaboration between regional Extension Committees and the Center for Farm Financial Management in further developing the national Risk Management Digital Library. A Mississippi State-led proposal was not funded.

Contact: Damona Doye

Name of Planned Activity/Program: National and Regional Extension Professional Associations

Progress Report: I served on American Agricultural Economics Association (AAEA) Extension Section board, president through July, past-president for remainder of year. The board helps plan contributions to AAEA meetings (pre-conference, ag study tour, organized symposia, outlook sessions, luncheon, receptions, etc.) to increase their value as a professional development opportunity to Extension economists. We gained approval for a new award for Extension Economists with less than 10 years experience. Monthly conference calls are used to conduct business and e-newsletters were used for communication with Extension Section members.

With colleagues, I continued with follow-up from the national enterprise budget conference to merge national budget databases into the website developed by the Center for Farm Financial Management. The website now incorporates the best of features of three national sites and allows for more sorting capabilities and reporting options. Regional extension committees continue to share new materials developed (e.g. Quicken notebooks and newsletters) on an ongoing basis so educators do not have to re-create the wheel and producers benefit from years of experience.

I participated in Southern and North Central Farm Management Extension committee meetings at the Triennial conference and also the fall North Central Farm Management committee meetings. I began serving as secretary of the NCFMEC fall 2004. I served on the Western Ag Econ Association Extension Awards committee, the Southern Ag Econ Association Extension Awards Committee, and planned the social for the 2004 SAEA meetings.

Contact: Damona Doye

Name of Activity/Program: Triennial Extension Conference (North Central and Southern Farm Management Committees)

Progress Report: I was a co-chair of the planning committee for the national conference and was responsible for receiving proposals for presentations, coordinating proposal reviews, communicating with authors and presenters, and organizing the program. More than 160 participants gave the conference excellent marks.

Contact: Damona Doye

Name of Planned Activity/Program: Southern Agricultural Economics Association leadership

Progress Report: I began serving as President-elect of the SAEA in February 2005 and will be responsible for Invited Papers and the Presidential Address for meetings in 2006.

Contact: Damona Doye

Name of Planned Activity/Program: North Central Region Cow/Calf Committee

Progress Report: The objective of this multi-state group is to exchange ideas, data, information, and research techniques in a cooperative, interdisciplinary effort among research stations to maintain an environmentally and economically sound beef cow/calf industry. The group meets annually for a two-day sharing and planning session. The meeting location is rotated among states so that different production systems and research programs can be visited. The group also collaborates to publish fact sheets and sponsor/organize an annual symposium at the Midwest Animal Science Meetings in Des Moines, Iowa. Proceedings from this symposium are published in peer-reviewed journals or published as extension fact sheets. One symposium was held at the Midwest Animal Science Meetings and two review articles are in the process (in press) of being published in a peer reviewed journal. Dr. Lalman presented an abstract and a paper at the symposium and, along with his graduate student, Jason Banta, and Dr. Robert Wettemann,

submitted a review paper from this symposium for publication in the Professional Animal Scientist.

Documentation of Agreement: Proceedings

Other States Involved: CO, IL, IN, IA, KS, MI, MN, MO, MT, NE, ND, OK, SD, VA, OH, WI

Contact: David Lalman

Name of Planned Program/Activity: S-1017 (previously S-293): Improved Insect and Mite Pest Management Systems on Pecan

Progress Report: This group is now under a new proposal, written and submitted for approval in 2004. The new project has been accepted and the group had their first meeting at the Western Pecan Conference in Las Cruces, New Mexico. During these meetings several new projects were discussed including cooperative research projects on pecan weevil and pecan nut casebearer. In addition, the group is assembling information for a book on pecan insect pest management. This latter task is being led by Dr. Jim Dutcher, David Sharpiro and Marvin Harris. Cooperative tests between Oklahoma, Georgia, Kansas, Louisiana and Texas are ongoing. These evaluations are related to the use of pheromone traps for making treatment decisions and using incorporated materials in controlling pecan weevil to suppress aphid populations. In addition, evaluations aimed at identifying a marker pheromone for pecan weevil oviposition are underway and are being led by Dr. Mulder. Two of these cooperative efforts are supported by grants from Southern Region IPM (approved 2005), and a Cooperative Agriculture Research (CAR) grant (pending). Additional studies focused on the phenology of phylloxera in native and improved cultivars and the use of a degree-day based system for predicting their prevalence in these areas. Three years of data have been assembled on this project and information from all test sites was presented at the Western Pecan Conference in Las Cruces, New Mexico and at the Oklahoma Pecan Growers Annual Meetings. Preparation of a manuscript is underway and should be submitted in 2005. Drs. Hall and Mulder will co-author this effort

Contact: Phil Mulder, OSU Extension Entomologist

Name of Planned Activity: Southwest Wheat Research and Education Consortium

Progress Report: The Annual meeting of the Southwest Wheat Research and Education Consortium (SWREC) will be held April 6-7, 2005 at the Texas Agricultural Research and Extension Center in Vernon TX. The old website has been deactivated, but the minutes of the 2004 SWREC meeting, held in Garden City on March 22-23 will be posted on the SWREC website as soon as it is located and activated.

Contact: Tom A. Royer

Name of Planned Activity/Program Title: Multi-State Cooperative Projects 2004

Progress Report: Multi-state projects during 2004 included efforts directed at evaluation of vegetable germplasm, screening of new weed control materials for use in vegetable crops. Detailed results of these studies are included in the 2004 Vegetable Trial Report MP-164 and are available through the Department of Horticulture at Oklahoma State University.

Southern pea evaluation is a cooperative effort between eight land grant universities located in Oklahoma, Texas, Arkansas, Missouri, Louisiana, Mississippi, South Carolina and Alabama. The program is titled the Southern Cooperative Pea Trial. During 2004 15 advanced breeding lines were included in the replicated trial and 15 in the observational trials at the Bixby and Goodwell Research Stations. Cooperative work was also carried out with the University of Arkansas on the evaluation of 15 different advanced breeding lines for tolerance to different herbicides.

Weed control research and demonstration work during 2004 included cooperative work with research colleagues at the University of Arkansas, Texas A&M, and Interregional Project # 4 of U.S.D.A. (IR-4). Dr. James Shrefler and my self were the primary investigators for this work in Oklahoma. During 2004, 13 different study/demonstrations were carried out throughout the state and included work on watermelon, southern pea, snap bean, spinach, beets, swiss chard, and cantaloupe.

Other States Involved: Oklahoma, Texas, Arkansas, Missouri, Louisiana, Mississippi, and Alabama

Contact: Lynn P. Brandenberger

Name of Planned Program/Activity: Increased Use of Better Adapted Turf Bermudagrasses in Transition Zone States

Progress Report: Selection and use of the best adapted turfgrass varieties results in turfgrass stands providing improved quality of human life through reductions in soil erosion, urban noise, glare, particulate pollution, and sports turf injuries. Reduced potential of off-target environmental impacts also occurs due to reduced maintenance inputs when using best-adapted turfgrasses. Over 280 turfgrass managers were training on proper turfgrass selection techniques during 2 multi-state turf workshops in Arkansas and Oklahoma. All managers indicated that they would use the information in making proper turfgrass selection decisions in their respective states. An Arkansas-Oklahoma turfgrass short course manual and digital presentation were updated to meet region-specific needs. These resources are used as a corner stone in employee training in fifteen lawn care enterprises and four University grounds divisions in Oklahoma and Arkansas. A draft of an Arkansas-Louisiana-Oklahoma-Texas Centipedegrass and St. Augustinegrass sod producer directory was developed to serve the four-state area in finding sources of these two key turfgrasses. A 2002 on-site turf production demonstration at Salisbury, Maryland continues to be effective in educating consumers in the mid-Atlantic region of the adaptation of OSU bermudagrass products such as Patriot bermudagrass. The licensee serves in producing Certified Blue Tag Patriot sod, with most sales going to the states of Maryland, North Carolina and Virginia. Patriot has improved cold hardiness and improved resistance to spring dead spot disease while matching or exceeding the quality of existing industry standards.

Cooperators: Turfgrass programs at the University of Arkansas, the National Turfgrass Evaluation Program, United States Golf Association, the Golf Course Superintendents Association

of America and Oakwood Sod Farm in Salisbury, MD.

Contact: Dennis Martin

Name of Planned Program/Activity: NCR-194 Regional Research on Cooperatives

Progress Report: A research and outreach forum: Farmers Cooperative Conference was conducted in Kansas City during November. The annual two-day forum involving participation from academics, upper and middle management personnel from cooperatives, directors from cooperatives, and researchers in government. It focuses on ongoing research on cooperatives, identifying research issues, and coordinating research projects and outreach efforts among the participants.

Contact: Phil Kenkel

Name of Planned Program/Activity: National Ag Marketing Resource Center

Progress Report: The national Agricultural Marketing Resource Center is a joint project involving Iowa State University, Kansas State University, University of California-Davis and Oklahoma State University. The AGMRC project created an electronic, Web-based library with powerful search capabilities to make value-added information and other resources available to producers. Provide electronically available information and resources on value-added markets and industries including a wide variety of commodities and products. It also provides value-added business and economic analysis tools, including information on business principles, legal, financial and logistical issues. The center also coordinates specialists whose role is to work with producers and value-added producer groups and businesses. The AGMRC web-site (www.agmrc.org) came on-line in July, 2002 and contains over 150 publications. Dr. Rodney Holcomb and I have published numerous publications through the AGMRC including a beef processing feasibility template, a flour mill feasibility template, a commercial bakery feasibility template, a generic feasibility study template and several reference guides for producer-owned value added efforts.

Contact: Phil Kenkel

Name of Planned Program/Activity: Great Plains Cooperative Consortium

Progress Report: The Great Plains Cooperative Consortium involves academic cooperative specialists from Oklahoma State University, Kansas State University, University of Missouri, Texas A&M University and Colorado State University as well as representatives from state cooperative councils in the above states. The GPCC coordinates research, outreach projects and conferences in the participating states. Activities completed in 2004 include a study of fertilizer warehousing and application systems and a feasibility study for a 60 bale/hour cotton gin.

Contact: Phil Kenkel

CSREES Goal 3: Multi-State Activities

Name of Planned Program/Activity: CES Southern Region Distance CES-FCS In-Service Training and Education

Progress Report: The CES Southern Region is developing an internet site, CECP, for distance in-service training and education. CES FCS State Specialists in the Southern Region are working together to develop a multi-state distance in-service training module on the Dietary Guidelines for the CECP system. As the Oklahoma OCES Nutrition Education Specialists I am co-chair of the CECP Food, Nutrition and Food Safety Development Team and I am participating in multi-state meetings, multi-state teleconferences and developing a distance in-service training lesson on Food Groups to Encourage for the Dietary Guidelines module.

Contact: Janice Hermann

CSREES Goal 4: Multi-State Activities

Name of Planned Program/Activity: Southern Region Water Resources Planning Committee

Progress Report: Smolen, Fram, and McCowan participated in the National Water Quality Conference in Clearwater Florida (Jan 2004), contributing three posters. At the conference, Smolen conducted planning meetings for the 2004 Collaborative Conference with 1862, 1890, and 1994 land grant institutions. Smolen participated in two additional Southern Region planning sessions (Atlanta, March 2004 and Tunica, MS October 2004). Smolen conducted conference calls with the Collaborative Conference planning committee each month from January 2004 to June 2004. The Collaborative Conference was held July 12-14 in Atlanta.

Beginning October 2004, Smolen became part of the leadership team (with Texas and North Carolina) for the Southern Region Project to begin planning the renewal project for 2004 through 2008. A renewal proposal was submitted to CSREES.

Also beginning October 2004, Smolen took lead in the program planning committee for the biennial Southern Region Water Conference, to be held in Lexington, KY in October 2005.

As his part in the leadership team, Smolen acted as coordinator for four Program Area Teams addressing water issues in the Rural/Urban Interface.

Smolen participated with Water Quality Coordinators from Louisiana, Texas, Arkansas, Oklahoma, and New Mexico and EPA Region 6 to interview and hire a liaison.

Accomplishments: The Collaborative Conference was attended by 102 people from 16 1890 institutions, 13 1862 institutions, and 6 1994 institutions. Work groups were formed, and collaborations among participants were fostered. Follow-up was planned of February 2005.

The new Southern Region Water Project was funded by CSREES and began operation in September 2004.

Contact: Michael D. Smolen

Name of Planned Program/Activity: Southern Region Integrated Pest Management Center

Progress Report: OSU Pesticide Safety Education Program represents Oklahoma at the Southern Region IPM Center that supplies EPA and USDA with pest management information for Oklahoma and adjoining states. The Southern Region comprises Oklahoma, Texas, Arkansas, Louisiana, Tennessee, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Florida, Kentucky, and Virginia. Crop Profiles for Wheat and Cotton were submitted to the SR-IPM Center. Issues of soybean rust were a major focus and will continue to be. Information regarding the introduction of soybean rust was communicated to interested parties in the state. OSU PSEP continues to keep abreast of information from USDA about soybean rust. Also OSU PSEP helped Oklahoma Department of Agriculture, Food & Forestry complete Section 18 submissions for fungicide control of soybean rust in Oklahoma.

OSU PSEP provided USDA-OPMP, USDA-CSREES and EPA with pesticide use information on numerous cropping systems in the state.

Contact: Charles Luper

Name of Planned Program/Activity: IR-4 Program

Progress Report: OSU Pesticide Education Program represents Oklahoma in the IR-4 program that is a National Program to Clear Pest Control Agents for minor uses. I work closely with Texas, and Arkansas representatives to find pesticides that benefit our grower's common needs in our states at the IR-4 food use workshop. We work with other states that might have similar needs for a crop such as Louisiana, Colorado, Georgia, and Tennessee. Oklahoma submitted 43 Pesticide Clearance Reports to IR-4 headquarters for 2004. OSU PSEP also is tracking the effect of soybean rust to Oklahoma minor crops such as snap beans and southern peas.

Contact: Charles Luper

Name of Planned Program/Activity: Pesticide Safety Education Program

Progress Report: OSU Pesticide Education Program works with multiple state extension services and regulatory agencies on various pesticide related issues. In 2004, OSU PSEP assisted Missouri and South Dakota with its fumigation certification recertification program.

Through OSU PSEP's contact with numerous state and national associations, OSU PSEP kept state pesticide applicators aware of regulatory changes and raised critical issues to the regional and national groups. Examples include the interpretation of the termiticide labels with state regulatory agencies in Georgia, Indiana, North Carolina, and Texas.

Through OSU PSEP the Pinkston Education Facility held six (6) structural pest management practicals and four (4) fumigation practicals. Applicators from Oklahoma, Kansas and Missouri attended one or more of these practicals. State extension and/or state regulatory personnel from Kansas attended one or more of these practicals.

A representative of the OSU PSEP spoke at the EPA PERT program on structural pest control held in Texas. The topic involved fumigation labels with emphasis on critical areas and areas that regulatory officials need to interpret. This was a course for state regulatory personnel to assist them in improving their knowledge and enforcement capabilities in the structural pest control arena.

Contact: Jim T Criswell

Name of Planned Program/Activity: SERA - Southern Region Information and Exchange Group – SERA003, IPM.

Progress Report: The working group acts to exchange information for on-going IPM programs and reviews the results from the USDA/CSREES Southern Region IPM grants program. Results of the reviews are submitted to the Directors, CES and AES for consideration for future RFP's.

This working group reviews scope and direction for the Southern Region Pest Management Center including the SRIPM grants program. I currently serve as the co-chair and will be chair next year. Additionally, I act as local arrangements chair for this year's meeting to be held in Oklahoma City. Scientists and extension personnel from Texas and Oklahoma prepared and submitted a USDA/CSREES RAMP proposal in 2004 that was not funded.

New activities: On going programs will be reviewed at the annual group meeting April 5-7, 2005 to determine new activities.

Contact: Jonathan V. Edelson

Name of Planned Program/Activity: SERA-IEG-17 Minimizing phosphorus losses from agriculture

Progress Report: The purposes of this committee are to develop best management practices (BMPs) to reduce agricultural P losses to surface waters by erosion and runoff (surface and subsurface), and to develop environmentally-based critical limits for soil test P and new soil testing methods that can more accurately identify sites where P loss will be of significant environmental concern. I attended its Annual Meeting in New Bern, NC July 2004. This group established field and greenhouse P runoff study protocol and made significant contribution on P management to minimize the impact agriculture has on water quality. The knowledge I gained from this group has been widely used in Oklahoma's waste management extension program and in developing a P risk index suitable to our soil conditions.

Contact: Hailin Zhang

Name of Planned Program/Activity: Southern Regional Water Quality Team

Progress Report: The Southern Region Water Quality Program coordinates multi-state implementation teams to address three major focus areas: Agricultural Pollution Prevention, Rural Environmental Protection, and Watershed Management. Each Focus Area will initially target four

specific Programs with integrated efforts in extension, research, and education. I have been actively involving activities with the Nutrient Management Theme Team. We are in the process to develop regional and state more effective educational programs to sustain agricultural production and minimize its impact on environmental quality.

Contact: Hailin Zhang

Name of Planned Program/Activity: National Advanced Fire and Resource Institute – USDA Forest Service, Tucson, AZ.

Progress Report: Provided a presentation and training course on maintenance and restoration of native plant communities with prescribed fire and prescribed grazing. This course is for all Federal natural resource agencies (FS, BLM, FWS) to equip them for ecosystem maintenance and restoration work as mandated by Federal Policy.

Other States Involved: All 50 states plus Guam and the Caribbean Islands

Contact: Terry Bidwell

Name of Planned Program/Activity: National Range Judging Contest – Judging Rangeland for Livestock and Wildlife Values

Progress Report: Conducted the national high school judging contest for 4-H and FFA students to learn about rangeland ecosystems and their management for livestock and wildlife. This contest is the culmination of numerous county, regional, and state contest conducted across the country.

Other States Involved: 38 states

Contact: Terry Bidwell

Name of Planned Program/Activity: Restoration of Lesser Prairie Chicken Habitat

Progress Report: Provided research information; trained state and federal agency personnel, and conducted meetings to improve landowner awareness on lesser prairie chicken habitat restoration. There are 3 demonstration sites in western Oklahoma devoted to this effort. I am using our long-term research project in western Oklahoma to facilitate the application of patch burning in shinnery oak communities on approximately 60,000 acres (5 ranches) in the Texas panhandle and NW Oklahoma. Three field days in 3 states will be conducted in 2005.

Other States Involved: Texas, New Mexico, Colorado, and Kansas

Contact: Terry Bidwell

Name of Planned Program/Activity: Restoration of Greater Prairie Chicken Habitat

Progress Report: Provided research information on a new fire and grazing system for private landowners that restores greater prairie chicken habitat. I conducted 2 field days on 3 demonstration sites central Oklahoma and the Flint Hill region of Kansas. One comprehensive publication was developed and published in cooperation with the Kansas Department of Wildlife and Parks. Title: Ecology and Management of the Greater Prairie-Chicken E-969. Two field days will be conducted in 2005.

Other States Involved: Kansas

Contact: Terry Bidwell

CSREES Goal 5: Multi-State Activities

Name of Planned Program/Activity: Extension Youth Serving Communities Grant Project

Progress Report: The Southern Extension Region submitted proposals in three areas: 4-H Afterschool, Youth and Adult Partnerships, and Volunteer and Staff Development. Oklahoma staff assisted in writing and submitting a grant in the Afterschool area. The grant has been used to provide support to the development of an online Staff Development Course that has been posted on the SR Cooperative Extension Curriculum Project (CECP) web-based Campus.

Contact: Nancy Dunlap and Jeff Sallee

Name of Planned Program or Activity: Kansas City Global 4-H Conference

Progress Report: This event was once planned and conducted by the Kansas City Chamber of Commerce. Over time the event declined and was near the point of being cancelled. A team of faculty and staff was identified with multi-state representation whose charge was to strengthen the education content of the event. The three-day event now features tours, workshops, service learning, and cultural events that prepare youth for future career opportunities.

States Involved: Kansas, Oklahoma, Missouri, Arkansas, Nebraska, and Iowa

Contact: Tracy Branch

Name of Planned Program of Activity: SR Cooperative Extension Curriculum Project (CECP) web-based Campus.

Progress Report: Staff from Oklahoma and Arkansas provided leadership the development and posting of two courses for the SR Cooperative Extension Curriculum Project (CECP) web-based Campus. The team worked with input from other SR states that determined the scope and sequence of the core curriculum that would be posted.

This first module has served as the model for new courses. The 4-H CECP project is now being expanded as a national project and design teams are being formed for at least 6 over-arching courses.

Contact: Jeff Howard (TX) Charles Cox, Jeff Sallee, (OK) and Darlene Baker (AR)

Name of Planned Program or Activity: Kansas City Global 4-H Conference

Progress Report: This event was once planned and conducted by the Kansas City Chamber of Commerce. Over time the event declined and was near the point of being cancelled. A team of faculty and staff was identified with multi-state representation whose charge was to strengthen the education content of the event. The three-day event now features tours, workshops, service learning, and cultural events that prepare youth for future career opportunities.

States Involved: Kansas, Oklahoma, Missouri, Arkansas, Nebraska, and Iowa

Contact: Tracy Branch

Name of Planned Program of Activity: SR Cooperative Extension Curriculum Project (CECP) web-based Campus.

Progress Report: Staff from Oklahoma and Arkansas provided leadership the development and posting of two courses for the SR Cooperative Extension Curriculum Project (CECP) web-based Campus. The team worked with input from other SR states that determined the scope and sequence of the core curriculum that would be posted.

This first module has served as the model for new courses. The 4-H CECP project is now being expanded as a national project and design teams are being formed for at least 6 over-arching courses.

Contact: Jeff Howard (TX) Charles Cox, Jeff Sallee, (OK) and Darlene Baker (AR)

Name of Planned Program/Activity: Economic Tools for Health Planning

Progress Report: One objective of this project is to train other state professionals (Office of Rural Health, Extension, State Hospital Association, Area Health Educators, etc) to be able to conduct the health impact model, community engagement process, and health budgets. This is accomplished by workshops, presentations at meetings, conference displays, etc. In 2004, I conducted workshops in 5 states, made presentations at 14 national or regional meetings and participated in four national conferences. In addition, I have been active in SERA-19 (Southern Region Extension and Research Activity project). I have had extension hands-on projects in Arkansas, Mississippi and Louisiana. In addition, I have been involved on four regional and national committees.

Contact: Gerald A. Doeksen

Name of Planned Program/Activity: National E-Commerce Pilot Project

Progress Report: This program utilizes funds from USDA provided to the Southern Rural Development Center. A national advisory committee has been formed and includes Extension professionals from OK, MS, PA, NB, GA, MI, WV, and NM. A competitive grants program will be offered to enhance existing or needed educational programs related to e-commerce to be offered by the Land Grant System. Currently, an RFP has been issued and 13 grant applications have been submitted. The advisory committee is currently reviewing the proposals and expects to fund 50 percent of the applicants.

Contact: Mike D. Woods

Name of Planned Program/Activity: NE-167 - Family Businesses in Economically Vulnerable Communities

Progress Report: Data from second and third surveys are being analyzed. An socio-economic vulnerability index has been developed that categorizes each county in the United States. The index is now being tested to determine how well it can predict business success and/or failure. A subjective index is also being developed. Sixteen manuscripts were completed during the last year. A monograph to assist home-based businesses was published based on conference papers from a Baruch University home-based business conference. All the material included was from an analysis of the NE-167 data. I currently serve as co-chair of the group. For more information see 2004 annual report at: <http://www.human.cornell.edu/ne167/>

States Involved: AR, HI, IL, IN, IA, MN, MT, NY, ND, OH, OK, WI, Baruch University

Contact: Glenn Muske

Name of Planned Program/Activity: Family Resource Management Via the Web

Progress Report: This web site was completely revised in 2002. Small updating continues. It continues to be used for in-service training.

States Involved: MT

Contact: Glenn Muske

Name of Planned Program/Activity: Great Plains Inter-Institutional Distance Education Alliance

Progress Report: The Great Plains Interactive Distance Education Alliance (GPIDEA) is a consortium of Human Sciences Colleges at ten universities. Students may pursue a degree offered by a single institution or multiple institutions. Each university brings a unique strength to the multi-institution academic programs. In a multi-institution program, a student is admitted at one institution and enrolls in courses at multiple institutions. Currently the Alliance is in its third year of offering a M.S. degree in Family Financial Planning. The FFP program provides an opportunity for Extension Educators to get their M.S. degree completely on-line in a CE-FCS priority area and eliminates travel costs and time. Other programs soon to be started are an M.S.

degree in Gerontology, an M. S. degree in Youth Development, and classes supporting Home Economics Education programs. FFP program won two awards for its use of technology in education.

States Involved: CO, IA, KS, MI, MT, NB, ND, OK, SD, TX

Contact: Glenn Muske

Name of Planned Program/Activity: 4HCCS Entrepreneurship Curriculum

Progress Report: 4-H curriculum developed, "Be the E: Entrepreneurship." Curriculum was piloted and released during the fall of 2004.

States Involved: WV, VA, FL, UT, MD, NC, MN, CSREES, OK, MO

Contact: Glenn Muske

Name of Planned Program/Activity: 2004 Public Policy Education & Public Issues Education Program

Progress Report: This program is coordinated with the Southern Extension Public Affairs Committee (SEPAC:12 state Extension policy specialists and the National Public Policy Education Committee (NPPEC: representatives from most states)). Working with such organizations as Farm Foundation, the Kerr Center for Sustainable Agriculture, and Farm Bureau, members of the committees, are conducting a coordinated, ongoing effort to periodically conduct environmental scans of the controversial issues especially affecting agriculture and rural communities. For example, we are developing programs on environmental issues affecting the Southern Region, community development policy, conservation programs in the current farm act, farmland protection, the budget and appropriations process, trade policy and obesity. Support and planning of members succeeded in the 2004 NPPEC Conference in St. Louis with a program that included presentations in the areas of Community Food Systems, Controversial Water Issues, Federal Budget Deficit and Agricultural Policy Issues, Basic and advanced training for Extension Educators. The planning efforts in SEPAC with other Southern and Midwest Extension Economists led to a program on Managing Change in Rural Communities in Lexington that included joint presentations on water issues and managing community change. Co-authorship of articles suitable for the popular press have increased to improve response to emerging issues.

Contact: Larry D. Sanders

Name of Planned Program/Activity: National Extension Advisory Committee on Federal Taxation

Progress Report: In 2004, the committee cooperated with the Internal Revenue Service to write and distribute the 2004 IRS Publication 225, Farmers Tax Guide that has been distributed to nearly 300,000 agricultural producers and tax professionals across the nation. Participants from 20 states are represented on the committee. Members represent both extension and research

appointments in their respective states. These activities are conducted under a Memorandum of Understanding between USDA and IRS. The committee meets with IRS in Washington each year in May to jointly write the Farmer's Tax Guide. The agenda also includes presentations from USDA and a meeting with the Joint Committee on Taxation. This important meeting allows our committee to inform the Joint Tax Committee of agriculturally related taxation problems and issues.

Contact: J C. Hobbs

Name of Planned Program/Activity: National Income Tax Preparer Education

Progress Report: In 2004, representatives of more than 20 states cooperated to develop educational material and conduct seminars and workshops for both farm and non-farm tax professionals. More than 29,000 tax professionals attended these sponsored seminars nation wide. The National Farm Tax Workbook is also used to provide training for IRS and state department of revenue employees. Contributors represent both extension and research appointments at their respective Universities, IRS employees and individual tax school instructors. Educational materials were used in 30 states. The Land Grant University Tax Educational Foundation, (LGUTEF) coordinates and enhances the effectiveness of national and state tax education activities by land grant university professionals.

Contact: J C. Hobbs