

THE UNIVERSITY OF TENNESSEE EXTENSION



MULTISTATE AND INTEGRATED SUMMARY
FY 2011

AREERA SECTIONS 105 and 204

SMITH-LEVER FUNDS

Submitted to:

United States Department of Agriculture

National Institute of Food and Agriculture

March 26, 2012

TABLE OF CONTENTS

| | |
|---|-----------|
| I. Introduction..... | 3 |
| II. Multistate Extension Summary..... | 4 |
| <i>A. 4-H Positive Youth Development.....</i> | <i>4</i> |
| <i>B. Agriculture and Natural Resources.....</i> | <i>4</i> |
| <i>C. Family and Consumer Sciences</i> | <i>6</i> |
| III. Integrated Research and Extension Summary..... | 7 |
| <i>A. 4-H Positive Youth Development.....</i> | <i>7</i> |
| <i>B. Agriculture and Natural Resources.....</i> | <i>7</i> |
| <i>C. Family and Consumer Sciences</i> | <i>9</i> |
| IV. Summary of Multistate and Integrated Expenditures with Smith-Lever Funds | 11 |
| V. Contact Information..... | 12 |

I. Introduction

In FY 2011, the University of Tennessee Extension met the multistate and integrated targets established for its Smith-Lever funds under Sections 105 and 204 of the Agricultural Research, Education and Extension Reform Act (AREERA) of 1998. The targets were recertified during FY 2008. This report is a summary of expenditures and specific program activities.

II. Multistate Extension Summary

UT Extension programs that represented both multistate and integrated efforts have been listed only in the integrated programs section of this report.

A. 4-H Positive Youth Development

4-H Health Rocks Partner States (Virginia)

Tennessee Extension specialists and administrators provided technical assistance and instruction to Virginia Extension personnel implementing the Health Rocks program. The Virginia Extension professionals made site visits to learn best practices from Tennessee's highly-successful Health Rocks program. For several years, Tennessee has had the largest Health Rocks program in the nation, and in 2011, 15,155 youth completed 10 hours of the Health Rocks curriculum. The site visits focused on best practices for implementation, curriculum, fund development, accounting, accountability, and evaluation.

National 4-H Congress (National)

Tennessee Extension 4-H specialists worked cooperatively with Extension personnel from across the nation to implement the 2011 National 4-H Congress in Atlanta. Tennessee Extension personnel provided leadership and operating support for this national event.

Southern Region 4-H Leader Forum (Regional)

Tennessee Extension 4-H specialists worked cooperatively with Extension personnel from across the Southern Region to plan and conduct the 2011 Regional 4-H Leader Forum in Arkansas. The forum helps volunteer leaders to develop their skill set, cooperate with other volunteers from throughout the region, and strengthen 4-H programs in their local communities.

Southern Region Collegiate 4-H Conference (Regional)

Tennessee Extension 4-H personnel worked collaboratively with State Extension Specialists in all Southern Region states in hosting a regional leadership conference for collegiate 4-H members at the University of Tennessee, Knoxville. More than 50 members, Extension personnel and volunteers from across the region gained practical knowledge in implementing service-learning programs in their communities. Collegiate 4-H members also explored graduate education opportunities.

B. Agriculture and Natural Resources

Southeast Equine Conference (Mississippi)

UT Extension specialists cooperated with Mississippi State University Extension Service to host the 2011 Southeast Equine Conference. The event focused on improving horse nutrition. The event was held at the Agricenter in Memphis, and the entire conference was online as interactive Webcast for the region's veterinarians, horse owners and the general public. Participants gained knowledge in the latest research in horse nutrition for reproduction, foals, performance horses, easy-keepers and older horses.

Beltwide Cotton Conference (Regional)

At the 2011 Beltwide Cotton Conference in Atlanta, UT Extension Specialists presented a number of seminars regarding current research for enhanced production. Ongoing, multistate education for producers and professionals has been a key to effectively supporting the region's cotton industry.

Turfgrass Professionals (National)

Turfgrass industry professionals must continue to maintain high-quality turf surfaces at least cost. The interest in improved turfgrass varieties, effective pest-control products and new technologies has never been greater. Many commercial and sports turf managers seek the most up-to-date information from UT Extension.

In FY 2011, the UT Extension Turfgrass Website (<http://tennesseeturf.utk.edu>) had more than 19,000 page views, an average of 55 daily page views with more than 14,000 visitors from all 50 states and 48 foreign countries. UT Extension specialists coordinated the Sports Turf Managers Association Regional Conference in Knoxville. This event, coordinated with other state Extension professionals in the southeastern United States, provided educational programming for over 150 athletic field managers from across the region.

UT Extension provided specific information regarding commercial turf care and pest management as follows:

- 462 disease, insect and weed samples were submitted from commercial turfgrass industry professionals for identification and recommended control measures.
- 454 industry professionals mowed, fertilized or irrigated the turf based on UT Extension guidelines.
- 433 industry professionals used a supplemental turf care practice such as dethatching or aerifying to improve the persistence of the turf, or applied a recommended product to manage a disease, insect or weed problem.
- 143 industry professionals established a new and improved turfgrass species and variety requiring less management.
- 14 high school coaches have adopted UT athletic field management recommendations.

School Integrated Pest Management (IPM) Program (Regional)

UT Extension promoted school IPM programs which aim to reduce and balance risks from pests and pesticides to school occupants and the environment. In 2011, the UT YEAH (Youth, Environment and Health) team and county Extension agents made 1244 school IPM program direct contacts (client visits to Extension office, email/telephone calls, group meetings/demonstrations and on-site visits). Information was disseminated to school plant managers via group meetings, newsletters, fact sheets, log books, and the internet. More than 20,000 indirect contacts were made through publications, newsletter, newspapers and exhibits. School IPM demonstrations were conducted in four schools in three Department of Education regions. Extension agents were involved in a grass-roots effort to encourage the 136 school systems to adopt IPM by delivering a logbook with a short speech to the system's decision-makers.

A phone survey in 2011, with a response rate of 71%, demonstrated approximately 65% of the school districts are using greater than 70% of the IPM practices queried about in the survey. School IPM demonstrations were successful. The volume of sprayed pesticides decreased dramatically in the schools conducting an IPM demonstration in 2010 – 2011 compared to the prior year with a traditional pest management program. The mean monthly fluid ounces applied decreased by 93% and the number of liquid pesticide applications per year decreased 83% during the IPM year. UT Extension specialist serve on the Southern Region School IPM Working Group and that multistate involvement has helped create awareness and increase adoption.

Apicultural Programs

American agriculture depends on healthy honey bees. Beekeepers need training to manage diseases and pests with up-to-date research based information to save their colonies. In FY 2011, 65 educational beekeeping programs were conducted including the 20-hour, Beemaster Program in five locations.

UT Extension was part of a 21-member national coalition representing 17 institutions that formed the eXtension Bee Health Community of Practice. The group provided 544 pages of content and used the YouTube Bee Health channel to provide 31 videos for stakeholders and the general public. The 120 Beemaster Program participants improved test scores (pre versus post) by an average of 33%. This program now has more than 2,100 enrolled. In addition, use of the bee health eXtension resources increased 44%.

C. Family and Consumer Sciences

Program Evaluation Network (Mississippi, Florida, Virginia, Maine, Michigan)

The Program Evaluation Network (PEN) is a custom-built software that contains valid and reliable questionnaires to measure the results of Extension programs. Since 2006, PEN has been used by Tennessee Extension Agents to survey more than 100,000 individuals in programs that served nearly 400,000 individuals. PEN has helped Extension professionals to improve their programs and to communicate program results to stakeholders. As a result of UT Extension seminars and webinars, six institutions in five states used the PEN software in 2011: Alcorn State University, University of Florida, Virginia State University, Virginia Tech, University of Maine and Michigan State University.

III. Integrated Research and Extension Summary

In cases where UT Extension integrated programs are also multistate programs, the states have been delineated in parenthesis.

A. 4-H Positive Youth Development

National 4-H Science Study (National)

UT Extension's evaluation specialist served as one of two national evaluation liaisons during both 2010 and 2011 for the National 4-H Science Study focused on youth engagement and knowledge. The liaison coordinated Institutional Review Board submissions and staff communications between and among California, Ohio, Texas, and Iowa Extension personnel and the study's principal investigators. This work was funded by Smith-Lever funds, Noyce Foundation and National 4-H Council.

B. Agriculture and Natural Resources

Large Animal Mortality Management

Improper large animal mortality disposal has made unfavorable news headlines in several Tennessee counties and has prompted violations during Concentrated Animal Feeding Operation (CAFO) inspections. The problem is attributable to a lack of rendering services for beef and dairy farms, and slaughter facilities for unwanted and aging horses are no longer available. The problem of improper disposal is exacerbated by the down economy and the state's poor forage crops in recent years. UT Extension continued an applied research project to establish burial and composting demonstration projects at two Research and Education Centers and at one private farm in Lincoln County. At each demonstration technical guidance was developed in 2011: (1) burial according to current state guidelines; (2) composting on the ground surface with different additives (wood chips, spoiled silage/feed, and manure), and (3) mass mortality composting of mature dairy cows to simulate the effect of composting at landfills. Extension publications were developed provide an overview of disposal options, and specific detail for landfilling, composting, and burying large animal carcasses in Tennessee. Producers now have the knowledge required to properly dispose of large animal carcasses by burial, composting, and landfilling. Producers in an eight county area of south central Tennessee, generating hundreds of large animal carcasses a month, now have access to a farm pickup service for landfill disposal.

Improving Profitability and Viability of Poultry Production

High production costs, the recent economic downturn, and difficulty complying with environmental regulations threaten the viability of livestock and poultry production. In Tennessee, this is particularly true for broiler producers because of steeply rising propane costs. Propane is used to heat production houses in winter. In FY 2011, UT Extension implemented a comprehensive, integrated research and Extension program aimed at improving the profitability and viability of poultry production. The emphasis of this program was on alternative fuels for heating broiler production houses; poultry litter and bio-solids as less expensive fertilizers for forage and crop production; and education for CAFO regulations compliance. UT Extension specialists and researchers compared yields and quality of forage produced with traditional chemical fertilizers and alternative, potentially less expensive fertilizers including broiler litter and biosolids from the Metropolitan Nashville wastewater treatment plant. A biomass furnace was made operational as part of an Environmental Protection Agency Regional Applied Research and

Education grant. We established a test of combusting poultry litter to heat broiler production houses. Thousands of tons of alternative fertilizers were land applied in Tennessee, including principally biosolids and broiler litter. Hundreds of producers gained knowledge for forage and crop production using alternative fertilizers and the use of alternative manure management techniques. Nearly 300 Tennessee producers have received nutrient management plans and coverage under CAFO permits.

Water Quality Improvement

Tennessee possesses an abundance of natural water resources, including over 60,000 miles of streams. These waters are assessed by the Tennessee Department of Environment and Conservation (TDEC) for water quality required for specific uses. Over one-third of assessed streams do not have sufficient water quality to support fish and aquatic life nor recreation uses. TDEC lists agriculture as the number one source (42%) of pollutants that cause stream impairment. UT Extension continued to research best management practices that improve water quality in impaired streams and deliver this scientific knowledge to farmers through demonstrations. Agricultural best management practices include providing cattle with alternative sources of water, fencing cattle out of streams, providing improved access to streams, growing cover crops, repairing and protecting heavy use areas and applying manures and other fertilizers based on crop nutrient needs.

The major outcome of this integrated research and Extension program has been cleaner water due to reduced pollution from agriculture. The list of impaired streams published by TDEC for 2010 – 2011 also includes a list of delisted streams in which water quality has substantially improved for one or more causes. Over 400 stream miles were delisted in 2010 – 2011 with an agricultural source. This includes 13.57 miles in the Pond Creek watershed in which UT Extension has focused this integrated research and Extension program.

Adopting Precision Agricultural Technologies

Precision agriculture technologies offer Tennessee producers various data management opportunities to analyze current production systems. Due the rising cost of fertilizers, chemicals, seed, fuel and labor, Tennessee producers are adopting precision agriculture technologies to increase production, reduce input costs, and manage farmland more efficiently.

An integrated, multi-disciplinary research, education, and outreach program has been established to develop and disseminate information about precision agriculture management strategies that are profitable and practical for Tennessee producers. Field days, county and multi-county meetings, on-farm demonstrations, news articles, publications, personal contacts and information gained from applied research projects were used to promote the adoption of precision agriculture technologies.

UT Extension's educational effort to promote the adoption of precision agriculture technologies resulted in the following impacts:

- In 2011, over 400,000 acres were planted and managed using precision agriculture technologies such as variable rate applications of fertilizer and lime, plant growth regulators, defoliant and or pesticides.

- 862 producers attending field days, workshops and county meetings increased their knowledge and skills of precision agriculture technologies related to row crop production.

This integrated research and Extension program was funded by Smith-Lever formula funds, Cotton Inc. and the Tennessee Soybean Promotion Board.

C. Family and Consumer Sciences

UT Obesity Research Center

In 2011, six UT Extension specialists from Family and Consumer Sciences, Animal Science, and Food Science and Technology continued their service on the UT Obesity Research Center, a multi-disciplinary team formed to study and take action in obesity prevention and treatment. The Associate Dean for Extension Family and Consumer Sciences serves on the steering committee for the Center, and it is collaboratively funded by the UT Office of Research, UT Extension, Tennessee Agricultural Experiment Station and the College of Education, Health and Human Sciences.

UT Extension's involvement in the Obesity Research Center is primarily in two critical research and Extension areas: population research and clinical interventions. Integrated programs explore such issues as access to affordable food, creating a more walk-able community, and building inter-agency partnerships.

Tennessee Shapes Up

According to CDC overweight and obesity trend data, the rate of obesity in Tennessee showed a slight downward trend from 32.9 percent obese in 2009 to 31.7 percent in 2010 (last year for which data is available). The change is within the margin of error so this downward trend may not be a true decrease but it does show that the rate of obesity has slowed.

UT Extension Family and Consumer Sciences faculty has implemented an integrated research and Extension program called Tennessee Shapes Up in 60 Tennessee counties in an effort to reverse the obesity trend in Tennessee. The implementation methods included direct educational instruction provided to 51,463 educational contacts to Tennesseans. The direct educational instruction included 1,709 group meetings with 39,911 participants; 8,159 participants assisted through 4,465 telephone calls or electronic mail; 433 client visits to the Extension office and 231 home or workplace visits by Extension to reach 2,983 participants. The indirect methods included 257 exhibits, 188 newspaper articles, 48 radio, 18 TV programs, and 722 publications. In addition to the educational efforts of the Extension staff, volunteers contributed 568.5 volunteer hours and reached an additional 35,829 educational contacts.

Impact data was collected using a behavior checklist survey. A select number of participants were surveyed to determine program impact. The behaviors measured are the healthy lifestyle practices essential in achieving and maintaining healthy weight and preventing chronic disease. The number surveyed is indicated by (parentheses). These numbers represent individual participants rather than educational contacts.

- 72% (n= 3304) reported they increased consumption of whole grains.

- 64% (n=3886) reported they decreased intake of sugar-sweetened foods.
- 73% (n= 4741) engaged in physical activity for at least 30 minutes five or more days during most weeks.
- 42% (n=1386) reported they lost an average of 2.5 pounds. This was a total of 4171 total pounds lost.

Healthy Steps

Too many young children are gaining unhealthy amounts of weight leading to chronic disease at increasingly younger ages. In FY 2011, UT Extension continued implementation of the Healthy Steps Program, an integrated research and Extension program that seeks to identify best practices for teaching nutrition and physical activity to pre-school children. This program was implemented in 23 Tennessee counties with these program outputs: 7,613 direct contacts were made in Voluntary Pre-K, Head Start and center-based classrooms; 8,117 indirect contacts were made through exhibits, newspaper articles, publications and television. In addition 972 contacts were made in classrooms by volunteers.

Surveys were completed by teachers at the end of the program to document program outcomes.

- 1,107 of 1,306 (85%) teachers surveyed reported preschool children in their classes were more actively engaged in physical activity.
- 1,536 of 1,617 (95%) teachers surveyed reported preschool children in their classes were more willing to taste fruit.
- 999 of 1,108 (90%) teachers surveyed reported preschool children in their classes were more willing to taste vegetables.
- 1,152 of 1,235 (93%) teachers surveyed reported preschool children in their classes were more willing to taste whole-grain foods.
- 465 of 535 (87%) teachers surveyed reported using physical activities from Healthy Steps at least three times per week.

IV. Summary of Multistate and Integrated Expenditures with Smith-Lever Funds

U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities

Fiscal Year: 2011

Select One: Interim Final
 Institution: University of Tennessee Extension
 State: Tennessee

| | Integrated Activities (Hatch) | Multistate Extension Activities (Smith- Lever) | Integrated Activities (Smith- Lever) |
|--|---|--|---|
| <i>Established Target %</i> | | 10% | 15% |
| <i>This FY Allocation (from 1088)</i> | | \$8,536,563 | \$8,536,563 |
| <i>This FY Target Amount</i> | | \$853,656 | \$1,280,484 |
| Title of Planned Program Activity | | | |
| A. 4-H Positive Youth Development | | \$253,755 | \$192,269 |
| B. Agriculture and Natural Resources | | \$986,823 | \$3,124,381 |
| C. Family and Consumer Sciences | | \$169,169 | \$1,490,090 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Total | | \$1,409,747 | \$4,806,740 |
| Carryover | | -0- | -0- |

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.



 Tim L. Cross, Dean, UT Extension

March 26, 2012

V. Contact Information

Inquiries regarding this report should be directed to:

Dr. Tim L. Cross, Dean

The University of Tennessee Extension

2621 Morgan Circle

121 Morgan Hall

Knoxville, TN 37996-4530

phone: 865-974-7114

facsimile: 865-974-1068

email: tlcross@tennessee.edu