

**Penn State Cooperative Extension
ANNUAL REPORT OF
ACCOMPLISHMENTS
AND RESULTS
FY2002**

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GOAL 1

Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing, and marketing.

Overview

Penn State Cooperative Extension accomplishments in Goal 1 for the third year of the five-year plan of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. Pennsylvania farmers, like those in many other parts of the nation, face major challenges in maintaining and improving the profitability of their operations.

During the third year of the five-year plan of work the market environment for key Pennsylvania commodities, such as dairy and livestock products, changed rapidly due to shifts in regional and national supply and demand. The new Farm Bill presented both opportunities and challenges for Pennsylvania farmers. On-going management challenges, such as those associated with waste and nutrient management in the Commonwealth's key livestock industry, were intensified by the effects of drought, and by the ripple effects of September 11, 2001, on Pennsylvania's food and agricultural system. Concerns about the safety and security of the system increased. Penn State Cooperative Extension addressed these challenges in Goal 1 through three overarching program goals: (1) improving the profitability and sustainability of agri-food system enterprises; (2) improving agricultural productivity and efficiency; and (3) increasing knowledge and skills to manage animal waste and nutrients. Within each of these areas, issues critical to a diverse clientele were addressed, particularly for underserved groups such as Anabaptists (Amish and Mennonites), groups for whom Spanish is the first language and in regions of the state where the population is geographically dispersed.

Significant efforts were devoted by Cooperative Extension faculty and field-based educators to improving the business skills of farmers and agribusiness managers. A farm financial planning program (FINPACK), which was translated into Spanish for use with Spanish-speaking operatives in the food system, was used by educators to help farmers analyze their financial performance and to plan future business strategies. Effective personnel management is an increasingly important factor for the financial performance of farms and agribusinesses in Pennsylvania and for their ability to meet exacting quality and food safety standards.

Efforts to improve the risk management skills of Pennsylvania farmers and agribusiness operators intensified during the year. A program designed to teach farmers how to use futures and options to manage their price risk was offered statewide. The training provided by this program led to increased use of risk management mechanisms by participants. A statewide program on crop insurance was also offered, which attracted

participants from neighboring states. This initiative was important given the severe effects of drought on crop yields and quality during the year in most of the state.

The food system in the United States is increasingly a consumer-driven system. Farm profitability is tied to the success of farmers in marketing their products and in creating new market opportunities. Training and assistance was provided to support niche marketing initiatives. These resulted in the creation of new cooperative marketing ventures by farmers. Advisory teams were created in several counties to improve management and business practices among dairy farmers with demonstrated impact in improving profitability. Extension field-based educators and faculty report that 54,367 individuals engaged in programs related to profitability and sustainability of agri-food system enterprises; 27,533 indicated increased knowledge, skills and abilities related to profitable and sustainable operation of farm and agri-food businesses.

In the aftermath of September 11, 2001, food safety and biosecurity became increasingly important issues for Pennsylvania's food producers, agribusinesses and consumers. Cooperative Extension staff and faculty used a range of educational programs and events to improve understanding of potential threats posed by a range of animal diseases, including foot and mouth, and the counter measures to be taken. Growing public concern about the threat posed to human health by the spread of West Nile virus were met with an expanded statewide effort during the year to disseminate information on the virus through brochures, fact sheets and bulletins and through the use of the mass media. As in previous years, educational effort was also directed to improving understanding and application of the Food Quality Protection Act (FQPA). A total of 1,604 persons participated in programs related to FQPA and 853 demonstrated incorporation of FQPA principles into their operations. An additional 19,735 persons took part in programs oriented to improving production management strategies with 11,735 demonstrating the application of increased knowledge and skills in this area.

Given the importance of animal agriculture in the Commonwealth of Pennsylvania, issues relating to animal waste and nutrient management continue to be a high priority for many farmers and for the public at large. In addition to nitrogen, phosphorous management is now a key issue in the state. A total of 1,597 persons attended programs related to animal waste and nutrient management, with 832 demonstrating increased knowledge and skills to manage animal waste and nutrients.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	FY2002
Human Resources (FTEs)	116.34
Fiscal Resources (Smith-Lever)	\$3,231,482
Fiscal Resources (match)	\$3,231,482

GOAL 1

Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing, and marketing.

Planned Program – *Operating Agri-Food Systems for Profitability and Sustainability*

KEY THEME – Agricultural Profitability

Cooperative Extension offers programs on business planning, financial planning and risk management for farm owners.

Business Planning and Management

a. Brief description of activity:

"Tilling the Soil of Opportunity" was piloted in a 12-week training course with 45 participants from 14 counties who learned the important aspects of a business plan.

b. Impact/Accomplishment:

- 45 participants from 14 counties completed the course.
- 42 participants demonstrated an increased understanding of business planning.
- 6 completed a business plan during the course; 12 indicated intention to complete a plan.
- 21 attendees wrote a mission statement for their current or proposed business.
- A business owner began to market in the Washington, D.C. area, where a restaurant features his products.
- Another owner targeted the York, Pennsylvania area and has realized higher product prices as a result of the marketing choice.

a. Brief description of activity:

FINPACK is a computer program designed to analyze farm financial performance and to evaluate alternative choices in a decision-making context. Cooperative Extension educators use the software with individual farmers to analyze farm performance and provide education on how alternative choices might affect financial performance.

The Spanish version of FINPACK was finalized after an 18 month translation and on-farm testing process. While the translation was conducted at University Park, the program was tested on 30 Latin American farms in the trial process. Five presentations were made of the software in Pennsylvania for future use with Hispanic farmers and farm workers in the Commonwealth and across the country. Future sales of the educational, non-profit, unique Spanish FINPACK software will be shared by the University of Minnesota, the holder of the FINPACK copyright, and Penn State to defray costs of the translation process.

b. Impact/Accomplishment:

- FINPACK farm financial management activities were conducted by extension agents and specialists in more than 30 Pennsylvania counties with more than 120 farm families. The FINPACK plans were used by farmers working with their agricultural lenders to refinance loans and expand farm production. The minimum value of each FINPACK analysis has been estimated at \$500, for a total minimum impact of \$60,000.
- FINPACK analyses were completed for farm businesses in 4 counties; 2 farms restructured their finances.
- One farm modified the size of his enterprise and debt structure to increase profits by approximately \$60,000.
- Another farmer used the information during a bankruptcy hearing to present his long-range plan to the court.
- One dairy farmer began operations after the analysis; one developed a plan to bring two children into the operation; and one producer learned how to evaluate a new business arrangement, choosing not to make a change at that time.
- FINPACK analyses facilitated educational discussions about business organization, goal setting and production management. Two farms reconsidered their initial choice after the analysis.

a. Brief description of activity:

Cooperative Extension educators teach farmers how to use electronic record keeping as one of their decision-making tools.

b. Impact/Accomplishment:

- 51 farm businesses received training in farm accounting software.
- 21 farmers in 5 counties indicated an increased understanding of farm accounting and financial record keeping.
- 11 farmers participating in CropMD, a crop management database software program, indicated they planned to use the software to save time and money. In a follow-up survey 72% (N=11) reported using CropMD; all indicated that management decision-making had improved as a result.
- 14 farmers adopted a standardized chart of accounts, in which to benchmark with peers; 3 of the farms computerized their financial records after training. One farmer reported using the skills to provide service for another farmer for a fee; 2 participants used the data to identify areas in which to reduce farm expenses.

a. Brief description of activity:

The BusinessSense course provides dairy farmers a set of information in business management "Best Management Practices" (BMPs).

b. Impact/Accomplishment:

- 42 producers completed the training with 90% increasing their understanding of BMPs.

Agricultural Financial Planning and Risk Management

a. Brief description of activity:

Cooperative Extension conducted Farm Service Agency (FSA) training throughout the state, in addition to 3 national finance workshops for USDA FSA loan officer trainees and 4 national farm management production lender trainings for USDA FSA lenders.

b. Impact/Accomplishment:

- 235 farmers completed financial training.
- 125 USDA FSA loan officer trainees received financial training.
- 54 USDA FSA lenders participated in training.
- 176 farmers estimated that application of the finance and planning principles will increase farm net worth by \$300 per month, or \$3,600 per farm per year. Total impact for the 131 farms is estimated at \$471,600.
- A large proportion of the 42 attending sessions in Lancaster County were Anabaptists.

a. Brief description of activity:

Cooperative Extension educators offered the Dairy Options Pilot Program (DOPP) with the USDA Risk Management Agency. Twenty-six counties in New York and over 26 counties in Pennsylvania participated in a satellite downlink program on DOPP and the Farm Bill.

b. Impact/Accomplishment:

- For example, 7 producers in 3 counties purchased options;
 - One indicated that his options resulted in an increase of \$3,000 to farm income.
 - A DOPP III participant reported an increase of \$2.41 per hundred weight for 40% of annual milk production and an increase of \$2.69 per hundred weight for 30% of annual production because of participation in this educational program. This resulted in over \$30,000 of additional farm income.
- Evaluation forms from the satellite downlink program were completed from 26 counties in Pennsylvania and one from the Raleigh RMA office. Of those who filled out surveys, there were 12 extension agents, 10 agribusiness people, 12 government people, and 84 farmers, for a total of 122 surveys. The results of this survey are as follows:
 - Overall program evaluation/comments was rated a 7 out of 7 by DOPP farmers.
 - DOPP farmers indicated in the post survey that the impact of the educational program on their knowledge of the subject matter was excellent, their knowledge of dairy futures and dairy options was very good and their inclination to now use dairy futures was good.
- Faculty and extension educators initiated a 5-month series of monthly dairy marketing lunch meetings.

a. Brief description of activity:

Cooperative Extension personnel educate producers and industry representatives about crop insurance and the associated programs.

- b. *Impact/Accomplishment:*
 - 4,000 farmers attended 70 presentations offered at meetings.
 - A web site was developed which received 23,314 hits <www.cropins.aers.psu.edu>.
 - 3 extension publications were developed; 40,000 publications were distributed.
 - Pennsylvania farmers paid \$5.4 million in premiums, but the losses paid out so far this year equal \$18.1 million. This equals a risk management return \$4.32 for every dollar spent by farmers. Sign up for crop insurance in 2002 included 14,603 farms and 1.16 million acres (50% of eligible acres [up 20% from 2001], up from approximately 26% of eligible acres in 1999).
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistate Extension (NY; one program involved participants from 40 states), and Integrated Research and Extension.*

KEY THEME – Agricultural Competitiveness

Farm Bill program changes, farm-level human resource management concerns, consistency of service provider recommendations, business transitions and market changes are a few of the challenges facing producers seeking to remain competitive.

- a. *Brief description of activity:*
Cooperative Extension educators work with producers and buyers to determine niche markets and assist them in marketing strategies such as developing farm market maps, online directories and developing increased awareness of farmers markets.
- b. *Impact/Accomplishment:*
 - A farmers market was formed in Southeastern Pennsylvania.
 - A group of small farm producers partnered to market their feeder calves which netted about \$0.20 per pound above market price or about \$46,080 in additional income.
 - A local farmers' directory was developed; farmers reported wider consumer contact beyond the local area and gained support of the Convention and Visitors Bureau.
- a. *Brief description of activity:*
Dairy Advisory Teams—composed of several members with expertise in areas such as veterinary medicine, banking, nutrition, and business consulting—work with producers to improve their dairy operations.
- b. *Impact/Accomplishment:*
 - The Pennsylvania Dairy Advisory Team organized 205 Dairy Advisory Teams in 15 counties over a period of 3 years. Eight training sessions, reaching 51 people, were held for dairy consultants to equip and empower them as facilitators. To date, Dairy Advisory Teams are now in at least 24 Pennsylvania counties.

- A very high percentage (91%) of producers recorded positive progress on the initial concern for which the dairy team was formed. Approximately half of the teams successfully transitioned to new or emerging problems following resolution of the producer's initial concern.
 - Of 5 dairy teams reporting, 4 producers indicated an increased knowledge of the farm's operations as a result of gaining the different perspectives offered by team members. One farmer built a barn to house dry cows to relieve pressure from overcrowding, and costs were reduced by \$0.60 per cow per day in another operation.
 - One Amish farmer began using futures and options as a result of input from his team; another Amish farmer has begun to feed his cows Total Mixed Ration (TMR) as a result of his team's input.
- a. *Brief description of activity:*
Cooperative Extension educators provide educational sessions to teach producers personnel management skills.
- b. *Impact/Accomplishment:*
- A 13-week training session on communicating in Spanish for farmers was provided in two locations with 22 participants from 10 counties and Maryland. Participants indicated an increased understanding of the Spanish language and the need to use it on a regular basis with their Hispanic workers. Before the class 71% indicated an inability to speak Spanish. After the program, 100% indicated minimal to considerable ability to speak Spanish.
 - 100% of respondents (N=9) from four counties indicated an improved understanding of standard operating procedures (SOPs) and how they can be used to increase profits; 80% indicated they planned to write SOPs for the first time. Eight dairy farmers in another 4 county area indicated that they developed SOPs as a result of training.
 - 12 horticultural business owners were trained on how to train seasonal workers in retail businesses. All participants indicated an improved understanding of rules and regulations, customer service, and other important functions in which they might train seasonal employees.
- a. *Brief description of activity:*
Farm Bill Workshops and a satellite downlink provided information about the new law and its possible impacts on Pennsylvania farmers.
- b. *Impact/Accomplishment:*
- 26 counties in New York and over 26 counties in Pennsylvania participated in a satellite downlink program on the Farm Bill.
 - A website was designed to disseminate additional news about the Farm Bill as needed.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific and, Multistate (MD, NY).*

Planned Program – Agricultural Productivity and Efficiency

KEY THEME – Animal Health and Animal Production Efficiency

Biosecurity and Disease Prevention on Pennsylvania Farms

The recent outbreak of Foot and Mouth disease in Europe has shown that our food supply can be jeopardized very quickly. Past experiences in our state with Avian Influenza have tightened biosecurity on poultry farms within Pennsylvania. The West Nile Virus (WNV) and related disease has spread via mosquitoes across the United States infecting humans, birds, and farm animals in 33 states since 1999. West Nile surveillance and educational programs were established three years ago in Pennsylvania. Biosecurity on farms is critical to maintaining the well-being and profitability of our farms. Most farm operators/owners need technical assistance in order to implement biosecurity measures on their farms.

a. *Brief description of activity:*

Cooperative Extension conducted statewide educational programs about the West Nile Virus and measures citizens can take to prevent exposure to the virus. Eighteen extension educators across Pennsylvania serve as county coordinators for distribution of educational brochures, fact sheets, and bulletins. Presentations, demonstrations, poster sessions, television and radio interviews were used to disseminate information.

b. *Impact/Accomplishment:*

- Extension educators reported that many homeowners took steps to eliminate household mosquito breeding sites.
- A multi-agency collaboration (Departments of Health, Agriculture and Environmental) was established with Penn State Cooperative Extension.
- Extension agents functioned as West Nile Virus Coordinators in 20 Pennsylvania counties. Agents were responsible for surveillance and control activities conducted with \$1.7 million in county contracts with the Pennsylvania Department of Environmental Protection. These 20 counties represent 20% of the state population and 33% of the land area. This group collected 13,000 mosquito samples for species identification and virus isolation, representing 32% of the Commonwealth's vector surveillance data.
- An extension educator in one county offered programs on WNV at a local elementary school and coordinated a fish and natural resource training with the assistance of Cedar Crest School District. A total of 240 youth learned about natural resources and management of water sources for pollution and pest management, and a tire

collection was organized to remove sources of breeding areas. More than 5 truck trailer loads of tires were collected for disposal this year.

a. *Brief description of activity:*

Multi-disciplinary educational events focused on maintaining productive and healthy livestock and facilities. Topics include floor design, ventilation systems, biosecurity, animal health, and special needs areas for animals that do become sick. Events included barn meetings, seminars, field days, and one-on-one discussions with farm operators and professionals. Newsletters and mailings remain an effective method of providing valuable up-to-date information.

b. *Impact/Accomplishment:*

- Over 100 events were held; more than 2,700 received information about the importance of biosecurity; over 6,000 farm operators received information about disease prevention.
- Of approximately 1,100 participants surveyed who attended meetings across the state, about 94% of the participants indicated that their knowledge of biosecurity and/or disease prevention issues was increased.
- 45 individuals were surveyed at one program.
 - 91% indicated that they increased their knowledge about livestock housing and biosecurity.
 - 23% of the participants indicated intent to implement changes to improve their farms.
- 69% of bovine veterinarian participants indicated their intent to become more active in promoting biosecurity programs for their clients.
- A number of veterinarians have reported that dairy producers using pre-purchase testing have added animals without health incident.
- More than 80% of Lancaster County sheep producers have received and applied USDA's official scrapie identification tags for permanent traceback identification. This represents nearly 4,000 head of sheep.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific and Integrated Research and Extension.*

KEY THEME – Food Quality and Protection Act

a. *Brief description of activity:*

The Food Quality Protection Act (FQPA) substantially changes the way food safety is determined and pesticides are regulated, and growers need to be aware of the changes in pesticide law and usage. Applicator training was provided on the proper use and handling of pesticides, and annual updates are conducted to keep applicators abreast of changes occurring in the field.

Over the last year, the major issue addressed has been continuing label changes of products. Pesticide use data was collected on several minor use crops in Pennsylvania, and pesticide use data is provided for other crops. Crop profiles were developed to provide a "real world" picture of pest management practices. In 2002, crop profiles were completed for alfalfa, snap beans, and grapes. Eight hundred copies of the Pesticide Education Program's FQPA fact sheets were distributed.

b. Impact/Accomplishment:

- More than twenty programs were presented to various grower groups: e.g., golf course professionals, Christmas tree growers, greenhouse operators, vegetable growers, field crop applicators, and turf grass professionals. The major issue addressed has been the continuing label changes of products.
- 1,604 participants attended Food Quality and Protection Act programs; 853 demonstrated increased knowledge of the FQPA and/or the skills to incorporate FQPA principles into their management practices or educational programming.
- 360 people from 7 counties in the Northeast Region received credits toward their pesticide license recertification.
- 97% of Christmas tree growers surveyed indicated they will scout trees for spider mites, 86% increased their understanding of spider mite life cycle, and 50% will consider changing the chemicals used for needle cast control.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

KEY THEME – Plant Production Efficiency

a. Brief description of activity:

Cooperative Extension faculty and field-based educators provide educational programs to enhance agronomic production for sustainability and profitability. Issues include diseases, insects, variety selection, weeds and mycotoxins in animal feed.

b. Impact/Accomplishment:

A regional Agronomy Team coordinated and conducted crop day programs in 6 counties.

- 555 people attended one of these programs.
- 93% indicated they gained new knowledge.

Northwest Pennsylvania producers reported significantly improved yields, forage quality and profitability for intensive grass management (IGM).

- Recovery of applied nitrogen has been documented.
- At least thirty producers in the region have switched from legume or mixed stands to IGM, primarily orchard grass, in the last few years.
 - A prominent county producer created a program model for other producers.

- Another producer documented increased income over feed costs to \$1,400 per head. This is in contrast to a common goal of \$800 per head.
- A producer reduced variable costs by approximately 50% using IGM compared with alfalfa production.

Approximately 560 producers attended various Crop Production Meetings in which evaluations were conducted.

- 90% of participants (N=140) in Corn Disease Management programs indicated they intended to use the information in daily operations.
- 20 participants in another meeting reported they increased their knowledge of silage production systems and new herbicide use.
- 150 farmers in another meeting reported they increased their understanding of new post-emergence corn herbicides and soybean insect management.
- 35 of the 250 attendees at a Silage and Forage Expo were surveyed to identify program impact.
 - 90% indicated that the information presented was useful.
 - 70% were able to list two things they learned that they intend to use within the next six months.
- A survey of a regional Weekly Crop Report was conducted; 100% indicated the information as useful; 80% said they used the information to better manage pests.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific and Integrated Research and Extension.*

KEY THEME – Small Farm Viability

a. *Brief description of activity:*

"High tunnel" technology offers small/family farmers the opportunity to keep the family farm, increase cash flow and profitability, decrease dependence on off-farm jobs, and produce high quality, added-value horticultural crops
<<http://plasticulture.cas.psu.edu/>>.

b. *Impact/Accomplishment:*

- 16 county extension winter meetings were held reaching 1,165 growers.
- 56 individuals attended a field day hosted jointly by the Pennsylvania Association for Sustainable Agriculture (PASA) and Penn State; a 50-page manual was prepared for participants.
- An 8-minute television segment on high tunnel production— filmed on location at Penn State High Tunnel Research and Education Facility—aired on April 24, 2002, on a national syndicated television show. More than 50 requests for manuals were received as a result of the segment on the show. Many homeowners wanted to extend their growing season under their local weather conditions.

- One grower offered the following statement: "... with the information and assistance I received, I was able to produce high quality tomatoes until December and I paid for the high tunnel the first year."
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

KEY THEME – Sustainable Agriculture

a. Brief description of activity:

The majority of Pennsylvania's independent family farms face new and somewhat different challenges than existed in the past, the resolution of which will determine the character of the agribusiness landscape of Pennsylvania for years to come. Most of these challenges seem to be associated with "transitions" in which such farms become involved, challenges such as marketing, enhancing profitability, support infrastructure, business plans and responding to government policy and regulations.

Educational activities conducted this year assisted extension and research personnel across the state in developing skills in conducting extension programming and applied research in sustainable agriculture through workshops, teacher training, and on-farm research. Approximately 60 different extension educational programs focused on sustainable agriculture. The updated Web site provides extensive research and extension-based information <<http://susag.cas.psu.edu/>>.

b. Impact/Accomplishment:

- A telephone survey of 20% of the participants (N=120) in Twilight Farm Market Workshops 3 months after workshop indicated the following:
 - 100% learned something new.
 - 92% intend to use something they learned.
 - 85% indicated they had already used what they learned.
 - One farm market (120 employees) made hygiene handouts part of employee-training manual.
- 23 educators in the Northwest Region attended the Forest Resources Institute for Teachers (FRIT) with all of the teachers developing 4 detailed lesson plans for classroom use as a result of the program.
- All 50 loggers and natural resource professionals who received training through the Sustainable Forestry Initiative indicated they will use information and tools learned to determine sustainability of future timber harvests.
- Agricultural production programming efforts resulted in the following impacts:
 - As a result of dissemination of on-farm research results, at least 24 producers have switched to intensive grass management resulting in significant increased profitability.

- 65 participants attending training indicated they incorporated at least one IPM strategy into their production systems.
 - 61 participants reported ability to adopt best management practices for horticulture crops to reduce negative environmental impact.
 - 58 participants indicated they can select cultivars using important sustainability factors.
 - The Keystone Development Center, a Mid-Atlantic regional group promoting and assisting the development of producer owned value-added cooperatives, was established.
 - Five townships in the northwest successfully renewed their Agricultural Security Areas (ASA), and 3 townships created new ASAs.
- More than 1,200 producers/marketers attended labor issues programming; 10 indicated use of targeted advertising for location of seasonal workforce; 8 producers indicated these efforts increased effectiveness over previous years; 2 businesses are developing employee handbooks.
 - 305 at-risk youths received a Workforce Investment Board (WIB) approved Youth Council Credential for successful completion of employment training.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistates (MD, NJ, DE) and Integrated Research and Extension.*

Planned Program – *Animal Waste and Nutrient Management*

KEY THEME – Nutrient Management

- a. *Brief description of activity:*
- Public concern regarding livestock production has intensified in recent years. Hog production appears to draw most of the criticism, due in part to highly publicized manure spills as well as the emission of offensive odors. Other livestock enterprises are not free from public scrutiny. While livestock producers have been increasingly proactive in adopting best management practices in regard to manure handling and odor and fly control, much of the farming community has not yet developed strategies for minimizing odor emissions and for optimizing manure utilization. Faculty and extension educators assist producers in adopting best management practices, not only to improve public opinion, but also to protect the environment. Through programming efforts, educators facilitate the adoption of mandatory and voluntary nutrient management plans and provide livestock producers with management strategies aimed at minimizing the loss of manure nutrients.

b. Impact/Accomplishment:

- Forty-two livestock and poultry producers participated in nutrient management certification training, and 77 commercial and public planners participated in the training. A total of 206 individuals participated in advanced phosphorus training; 197 livestock producers developed a nutrient management plan. All producers who have an approved nutrient management plan are expected to implement the plan.
- 68 participants attended the Manure Hauler Certification training or calibration workshops.
 - 30 individuals took the quiz at the workshop; average score = 95%.
 - 38 individuals participated in one of the field days; 28 participants indicated they would adopt the techniques taught, including the calibration practices.
- All poultry, swine and dairy producers in Pennsylvania are encouraged to formulate feed to minimize nutrient excretion. Three major swine integrators (annual production approximately 900,000 market hogs), at least four major poultry integrators, and approximately 200 dairy producers use feed formulations.

a. Brief description of activity:

An inter-departmental and multi-county team was formed, including participants from industry, and programs on BMP to control flies around major animal facilities were conducted.

b. Impact/Accomplishment:

- More than 15 calls have been made to the team resulting in actions taken to examine the source of fly outbreaks (blooms). On two occasions major problems were outlined that would save the producer both time and money. Post survey of the homeowners indicated that fly levels are significantly reduced after a visit by the SWAT team member. One major integrator indicated the use of a new management tool as a result of contact by the SWAT team.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

GOAL 2

To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.

Overview

Penn State Cooperative Extension accomplishments in Goal 2 for the third year of the five-year plan of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. As outlined in the plan of work, Cooperative Extension emphasizes the overarching goal of developing a systems approach to food safety. Within this area, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving the issues critical to a diverse clientele.

Food safety is a serious concern throughout the food system. Any solutions must take a broad, farm-to-table approach and must involve farmers/producers, food processors, food handlers, food retailers, consumers and government regulators. Penn State Cooperative Extension provided assistance and specialized training to groups such as livestock, fruit, vegetable and other crop producers; meat, poultry and other food processors; retailers, restaurant owners and workers, and other volunteer cooks, as well as food safety practices for consumers. All over Pennsylvania, several thousand practitioners were trained, tested and certified, who in turn, trained additional people or changed their behavior. The result was an increased awareness of food safety practices throughout the food system, and a safer food supply for the consumer.

Cooperative Extension educators continue their training efforts to help clients in food establishments meet the requirements of the Pennsylvania Food Service Employee Certification Act. Since implementation of the Statewide Food Safety Certification Program in fall 2001, over 3,750 students have completed the program, and the results of this training are outstanding. Excellent progress on reaching underserved audiences with food safety programming has been made, particularly in accommodating non-English speaking audiences.

By keeping a broad, farm-to-table focus when applying solutions to our food safety problems and taking careful, multiple steps, we can ensure that real progress will occur. Extension educators are actively involved in providing training for food producers and processors related to food safety and sanitation practices. Programs for other types of food certification, such as Beef and Pork Quality Assurance are offered. In all, 1,011 participants were reported to have received these types of certification.

Additionally, county-based educators offer an array of food safety programs for non-profit organizations that serve and distribute food. They also reach very diverse

audiences, from kindergarten and elementary students to senior citizens. This fiscal year, a total of 12,338 individuals participated in programs related to food safety, and 7,988 participants demonstrated increased knowledge and understanding of practices to ensure safety of the food system. A total of 2,059 participants completed state-approved curricula, and passed certification/recertification requirements.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	FY2002
Human Resources (FTEs)	13.86
Fiscal Resources (Smith-Lever)	\$357,271
Fiscal Resources (match)	\$357,271

GOAL 2

To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.

Planned Program – *A Systems Approach to Food Safety*

KEY THEME – Food Quality

Food safety is an issue that needs the attention of everyone involved in the food system, from producers, processors, and government regulators to food handlers, food retailers, and consumers. By keeping a broad, farm-to-table focus when applying solutions to our food safety problems and taking careful, multiple steps, we can ensure that real progress will occur. Cooperative extension educators provide programming relevant to a variety of constituents such as livestock, fruit, vegetable and crop producers; meat and poultry processors; professional food processors and volunteer cooks, as well as consumers.

Additionally, Penn State is involved in the FAO Network of Excellence on Food Quality, Safety and Nutrition, an initiative designed to strive for excellence in the advancement of knowledge by bringing together selected high-level expertise from outstanding academic institutions and internationally renowned research institutes, from around the world. The goal of the FAO Network is to create the possibility for leveraging a critical mass of scientific and technical resources from many sources towards the resolution of priority problems in food quality, food safety and nutrition.

Livestock Quality Assurance

a. Brief description of activity:

Beef, dairy and swine producers have participated in Quality Assurance programs to enhance the quality and safety of animal products to eliminate hazards such as antibiotics from milk and meat produced in Pennsylvania. Commodity organizations, large packers and processors and the State Department of Agriculture have supported such programs, and they are widely accepted by producers.

b. Impact/Accomplishment:

- Lancaster County is the top livestock county in the state and is active in both beef and swine quality assurance programs at the adult and youth levels. Pork Quality Assurance (PQA) is a requirement in the swine project.
- 74 of 75 swine project members successfully completed the PQA requirements.
- Both major swine packers have required level III certification before purchasing live hogs from a producer resulting in certification of 777,162 animals.
- Lancaster County alone has certified 151 producers in Beef Quality Assurance (BQA), requiring both classroom and hands-on participation. This represents 7% of the beef produced in the state.
- 27 BQA training sessions were held statewide with over 70% of beef producers having been certified.

- Dairy Quality Assurance has had positive results, with support from the State Veterinarians Office, training and certifying more than 40% of all milk producers with over 56% of the production in the Commonwealth.

Fruits, Vegetables and Crop Production

a. Brief description of activity:

Pennsylvania is number one in mushroom production in the country, and one of the top states in the production of apples, grapes, berries, potatoes and tomatoes. Consequently, proper use of pesticides and herbicides in the production of these and other crops, and proper handling and processing practices are essential to the health of consumers. Courses offered on a statewide basis include Mushroom Safety and Sanitation, HACCP for Fruit Juice Processors, and Train-the-Trainer courses for Pesticide Certification educators.

b. Impact/Accomplishment:

- 9,762 producers were recorded as receiving training with an overall success rate of 99.8%.
- 24 courses were conducted for either certification or re-certification of pesticide handlers with a success rate of over 99% of the 2,734 producers enrolled passing the tests.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

KEY THEME – Food Handling

Meat and Poultry Processors

a. Brief description of activity:

Pennsylvania is one of the top two states in the number of very small inspected meat processing facilities. Most of these are third and fourth generation family operations, whose operators have had little or no formal training in food processing or food safety. Regulatory pressure on these small, family operations is great and Penn State has served them by offering a number of trainings. These plants offer ethnic diversity of foods as well as provide a competitive market for livestock marketed in the state.

Basic HACCP certification was offered to provide a basic level of understanding in applying the seven principles of HACCP to meat and poultry production. A focus was placed on assisting very small plants. In 2002, three basic HACCP short courses were offered for meat and poultry processors. Four Advanced HACCP workshops and three Listeria workshops were conducted to assist processors improve their HACCP plans.

Statewide Food Safety programs for food processors were offered. These intensive courses involved testing and certification for processors in many types of food

production. For example, 18 operators attended the Pasteurizer Operators Workshop, a certification course for processors who manufacture sterile, shelf-stable products.

b. Impact/Accomplishment:

- 47 processors were certified by passing a written test in basic HACCP courses.
- 14 of those attending the Food Microbiology Short Course—representatives of 33 processors—established testing laboratories in their companies.
- 44 respondents to a survey indicated they had improved the use of sanitizers as a result of Sanitation Short Course training (72 participants).

Food Irradiation

a. Brief description of activity:

New technology for producing safe food products is frequently misunderstood and raises concerns for consumers. The use of ionizing radiation of raw beef and poultry is one such technology which is feared by some sectors, yet praised by others. It is imperative to provide scientific information to make rational decisions and to be able to answer consumer questions about effects such as cancer. Four regional workshops were held for "thought leaders": county extension educators, state health department officials, state food inspectors, retailers and processors.

b. Impact/Accomplishment:

- Evaluation by attendees of these sessions indicated a much higher understanding (score of 6.6/7.0) of the technology and a much higher comfort with the safety of this technology (score of 6.3/7.0).
- Four supermarket chains now offer irradiated ground beef.

Hunter Food Safety

a. Brief description of activity:

Each year over 1 million hunting licenses are issued to Pennsylvania residents. It has been demonstrated in research by extension faculty at Penn State that pathogens such as *E. coli* 0157:H7 exist in the deer population and other wildlife species. Because of several outbreaks of food borne illness occurring in game meats and of the lack of sanitary conditions in the field, hunters of all types of game and fishermen needed information on procedures to make a safer product. Penn State personnel initiated train-the-trainer programs for extension educators and fish and game wardens. County extensions educators offered numerous other programs. Over 2,000 posters and 10,000 pocket field guides have been distributed to meat processors, hunting license sellers and extension educators for distribution.

b. Impact/Accomplishment:

- Post-tests indicated that 95% of attendees planned to improve the hygiene and sanitation of dressing procedures.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

KEY THEME – Food Safety

Training for Professional Food Processors

a. Brief description of activity:

As mandated by the Pennsylvania Department of Agriculture, one person from each Pennsylvania food establishment shall complete certification for the Pennsylvania Food Service Employee Certification Act by July 1, 2003. Penn State developed the Statewide Food Safety Certification Program (SFSCP), which consists of a 16-hour workshop taught by Cooperative Extension field-based educators. In several counties, the ServSafe® program is offered collaboratively with Penn State Continuing Education and Penn State campuses and/or with local organizations. To serve a wider ethnic base of food preparers, three courses were offered in Spanish, and one each in Italian and Chinese.

The Commonwealth of Pennsylvania is also requiring a Food Handlers Certificate, and nine of these courses have been offered training 389 professional food handlers. Three counties offered advanced courses in training train-the-trainer and ServSafe® HACCP in which 95 trained. Over 285 food preparers for at-risk populations in schools, child-care, hospitals and nursing homes in 33 counties received food safety training.

b. Impact/Accomplishment:

- More than 1,600 food preparers were trained with 99.2% passing a test for certification.
- Follow-up questionnaires show the program's effectiveness in improving food safety.
 - 90% improved sanitation.
 - 92% indicated greater use of thermometers in cooking.
 - 92% cook to an end point temperature.
 - 81% improved control of holding temperatures.
- 1,220 participants in 43 counties attended Food Safety training for professional food preparers; 1,211 of the participants becoming certified through testing.
- 6 Chinese SFSCP courses have been offered, since spring 2001, with 125 students completing the program.
- Since implementation of SFSCP in fall 2001, over 3,750 students have completed the program. A survey sent to 1,448 students who attended from January-May 2001 (response rate 42%), showed the following behavior changes:
 - 8 of 10 respondents who were moderately likely to practice food safety techniques before the training are very likely to practice food safety techniques after attending the training.
 - A significant number of respondents reported purchases of items that will help them improve food safety at their establishments as a result of attending training.
 - Awareness of major food safety regulations increased significantly among respondents as a result of the training.

- Two-thirds of the respondents who were moderately likely or slightly likely to train other individuals in their establishments before training indicate that they are now very likely to do so, thus multiplying the training effect.

Cooking for Crowds – Training Volunteer Cooks

a. Brief description of activity:

Most small Pennsylvania communities are served by volunteer fire departments. Many other non-profit organizations serve dinners as fund raising projects so there are many volunteers who cook meals for large groups who have had no training in food safety. "Cooking for Crowds" was designed for these volunteer cooks.

b. Impact/Accomplishment:

- 1,515 volunteers in 38 counties participated in "Cooking for Crowds."
- Follow-up questionnaires are shown to greatly improve food safety.
 - 90% increased hand-washing.
 - 74% indicated greater use of thermometers in cooking.
 - 88% cook to an end point temperature.
 - 81% use better cleaning and sanitizing procedures.

Food Safety Education for Students

a. Brief description of activity:

In-school food safety programs have been conducted in many counties—"Fight Bac," "It's Only Food" and "Food Safety for Kids." More than 1,000 youth were trained in good food safety procedures, 3,000 youth attended the "Hand-washing University" at Ag Progress Days, and 800 youth attended youth day camps held in 3 counties where Food Safety training was an integral part of the program.

b. Impact/Accomplishment:

- While follow-up information from this large number of students is difficult to retrieve, follow-up with teachers indicated improved hand-washing procedures and more interest and understanding of food safety.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific

GOAL 3

Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.

Overview

Penn State Cooperative Extension accomplishments in Goal 3 for the third year of the five-year plan of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. As outlined in the plan of work, Cooperative Extension emphasizes the overarching goal of increasing healthy food choices among Pennsylvania adults and youths. Within this area, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving the issues critical to a diverse clientele.

Pennsylvania has the largest rural population and the second-largest senior population (16 percent) in the U.S. The population is largely White (88 percent) with increasing numbers of African Americans and Hispanics. Diseases that have lifestyle antecedents—heart disease, cancer, cerebrovascular disease, and diabetes—are among the six leading causes of death in Pennsylvania. According to the BHRFS of 1996, a significant portion of residents are physically inactive, overweight, not eating fruits and vegetables five or more times a day, and have elevated blood cholesterol, all predisposing risk factors for chronic diseases. Many Pennsylvanians are not following the principles embedded in the USDA Food Guide Pyramid and balancing caloric intake with regular physical activity. Cooperative Extension faculty and field-based educators create and offer a variety of programs that help people adopt lifestyle practices that promote health and wellness.

About one in two women and one in eight men will eventually develop osteoporosis, a highly debilitating disease. On a different front, the incidence of diabetes increased by 33% during the last few years. Therefore, prevention of both diseases is critical. Similarly, all adults and children must practice healthful eating in order to maintain or increase their wellness and health. Educational programs addressing osteoporosis, diabetes, obesity, diet and health were offered to a large number of Pennsylvania residents. As a result, thousands of people increased their knowledge about these diseases, understood better the prevention practices, and became more confident in making the proper diet and lifestyle changes. Similarly, thousands of participants increased their awareness of a more healthful diet, and adopted diets consistent with dietary guidelines for good health.

Cooperative Extension has made significant progress in providing educational programming opportunities that increase healthy food choices among Pennsylvania adults and youths. During this fiscal year, 18,919 individuals participated in programs on

nutrition across the life cycle. Of those participants, 16,744 demonstrated the use of the food guide pyramid and/or the nutrition facts panel to make healthy food choices.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	FY2002
Human Resources (FTEs)	17.85
Fiscal Resources (Smith-Lever)	\$435,222
Fiscal Resources (match)	\$435,222

GOAL 3

Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.

Planned Program – *Diet, Nutrition and Health*

KEY THEME – Human Health and Human Nutrition

Osteoporosis

a. Brief description of activity:

Creating Health, a collaboration between WPSX Public Broadcasting, Penn State Cooperative Extension and 3 colleges at Penn State, produced its first program aimed at preventing osteoporosis in Fall 2001. Over a lifetime, 1 in 2 women and 1 in 8 men will develop osteoporosis, a highly debilitating disease so prevention is critical.

For adult audiences, a tabletop display was developed, as well as a game (Spin the Bone) and informational presentations and handouts. A "Creating Health: Osteoporosis" PowerPoint presentation with handouts and worksheets to address the pre-contemplation, contemplation, decision and action stages of Stages of Change were developed to support the outreach effort and compliment the WPSX half-hour video. A learn-at-home lesson set, Calcium Rich Eating, with demonstrated ability to alter attitudes and behaviors regarding osteoporosis prevention, was offered to interested clientele. Programs were presented to increase awareness of children through 4-H camps, health fairs and workshops.

Eighteen counties reported osteoporosis prevention and detection activities for adults. *Awareness:* Osteoporosis displays at health and county fairs, supermarkets and other public venues plus food demonstrations at Ag Progress Days reached over 1,600 individuals including seniors. *Knowledge:* Several counties reported 200 individuals played Spin the Bone and 420 individuals attended various programs about osteoporosis prevention.

b. Impact/Accomplishment:

- *Awareness:* Over 210 heel scans were conducted as part of the osteoporosis exhibits.
- *Knowledge:* At the end of one presentation, 50% could correctly select calcium rich foods from a display, and in another, 84% reported learning new information.
- Osteoporosis prevention workshops were offered to 47 teachers.
- *Knowledge and behavior change:* 64 adults completed "Calcium-Rich Eating."
- 96% of 25 Head Start teachers reported significant knowledge gain immediately post the lessons. Three months after the presentation, 58% completed a follow-up survey indicating the following:
 - 91% ate the featured calcium rich food more often.
 - 100% improved their ability to provide calcium rich meals for their families.
 - 73% increased their exercise levels.

- All Creating Health: Osteoporosis PowerPoint presentations used produced significant change. At the 'contemplation stage,' among 40 adults completing "Osteoporosis: Are you at risk?", significantly more believed they were at risk for osteoporosis ($p \leq 0.01$), believed that changing their habits would protect them ($p \leq 0.05$) and felt they had more ideas of how to change lifestyle habits ($p \leq 0.001$) after the presentation than before.
- At the 'action stage,' among 93 adults completing "Calcium Supplements," significantly more felt that they could overdose on calcium supplements and could identify supplements that were safe to use after the presentation than before ($p \leq 0.001$). Of these, 76% intended to read Supplement Facts panels more carefully and 87% intended to compare the amount of calcium they obtain from fortified foods to the amount from calcium supplements. For 11 adults completing "Finding Calcium Rich Foods," significantly more felt they could identify calcium rich foods in the supermarket after the presentation than before ($p \leq 0.001$). Among these participants, 91% intended to include more calcium rich foods in their diet.
- Material were presented to over 830 students in 7 counties with 250 children indicating some degree of knowledge change.
- One educator used the contemplation stage, "Osteoporosis: Are you at risk?" with high school students ($N=28$) resulting in significant change in beliefs about personal risk ($p \leq 0.01$) and ability to change habits and ideas on how to do this ($p \leq 0.001$ for both) after the presentation compared to before.

Diabetes

a. Brief description of activity:

The incidence of diabetes has increase 33% in the last several years so prevention is critical. Programs on diabetes prevention and management were offered using either specific lessons or the complete lesson series, "Your Wellness Road Map," "Dining with Diabetes" or presentations of the educator's own design. Eleven counties reported activities related to adult diabetes prevention and management. More than 300 adults were contacted with information on lowering their risk of diabetes using various individually designed programs to raise awareness.

b. Impact/Accomplishment:

- Over 180 individuals completed "Your Wellness Road Map" series.
- Wellness information was provided to nearly 2,000 children in 2 counties via school wellness day activities or nutrition classes.
- 73 participants attended one of the Road Map series with 30 completing evaluations.
 - 93% increased confidence in their ability to use Nutrition Facts panels, choose foods with less saturated fat or more fiber, and/or increase exercise frequency.
 - 92% reported improvement in one or more of these, in a follow-up evaluation.

- 323 people were reached through "Dining with Diabetes" workshops and individually designed activities.
- Approximately 50% of 111 attending one "Dining with Diabetes" workshop indicated they planned to use artificial sweeteners or alternative spices in the next month.

Food and Nutrition Life Skills Across the Life Cycle

a. Brief description of activity:

Key teaching components include Worksite Wellness programs, health fairs, workshops and demonstrations, after school programs, parent-teacher programs and face-to-face encounters. Newsletters, radio programs, news articles and television are used to effectively disseminate a clear message about healthy eating patterns. Programs such as SuperCupboard, senior expos and discussion/demonstrations help participants gain the needed knowledge and skills to adopt healthy dietary behaviors. Education programs addressing diet and health were offered to Pennsylvania residents of diverse income levels, age groups, genders, and cultural backgrounds across the state. Multiple delivery strategies have been used and tested to match the most appropriate means of reaching the audiences with meaningful messages.

Programs conducted by faculty and extension educators have resulted in positive knowledge and behavior change toward healthful eating. Programs with sustained impact continue to provide support, information and skills to improve eating practices.

b. Impact/Accomplishment:

- 42,298 participants increased knowledge to develop meal plans for a more healthful diet and snacks.
- 59,341 increased awareness that will promote a more healthful diet.
- 34,164 participants reported changing attitudes and aspirations to promote a more healthful diet.
- 21,314 participants indicated they adopted diets consistent with dietary guidelines for good health.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

GOAL 4

Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air, and biotic resources.

Overview

Penn State Cooperative Extension accomplishments in Goal 4 for the third year of the five-year plan of work were very satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council.

Pennsylvania's water and forest resources are essential to our society's consumptive needs and environmental settings. These resources support water usage within our population, provide a source of raw materials for economic pursuits and serve as an ecological reserve for our environment and society's spatial needs. The management of this complex resource base is the focus for several key Cooperative Extension programs designed for resource owners and the general public. As outlined in the plan of work, Cooperative Extension emphasizes two overarching goals: (1) improving watershed management to enhance water quality; and (2) improving sustainability of Pennsylvania forests. Within each of these areas, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving the issues critical to a diverse clientele.

The maintenance of water quality within private systems is of strategic importance to many rural populations. This includes engineering and resource issues tied to water supply systems, septic systems and farm ponds. Recent constraints to water supplies have created a further need for information on drought prevention and mitigation. Collectively, these water-resource issues have been addressed through a collaborative set of Cooperative Extension programs involving news releases, publications, water testing and educational sessions relating to supply systems and watershed awareness. Water-resource information was provided to 10,408 people through face-to-face educational programs. As a result, educators identified 1,983 individuals who took action to protect or enhance water quality.

Forest landowners need to understand the dynamics of forest growth and the ecological relationships inherent to these biological settings. Timber harvesting requires landowners to understand this selection process and the allied marketing process, while, at the same time, how to maintain and, potentially, build a forest's integrity and sustainability through time. Cooperative Extension educators have created an assembly of programs that instruct forest landowners on the growth mechanism inherent to forests and the intricate nature of this biological process. These programs and instructional materials provide an overview of silvicultural and management decisions confronting property owners through

time. Extension personnel also recommend additional sources of professional assistance to landowners in need of detailed planning. Cooperative Extension programming in private forest management and sustainability reached 3,420 adult participants. Of these participants, 2,094 indicated an increase in knowledge and skills needed to apply the practices and principles to ensure private forest management and sustainability. Timber harvesting is approached as an educational topic for landowners and loggers. These programs identify the timber products in demand by commercial markets, their measurement and value, and the subsequent need for insuring regeneration, sustainability, and continuity within the forest. The dynamics and complex nature of forest systems also serve as the basis for several youth education programs provided by Cooperative Extension. These programs reached 3,615 youth participants. Of these participants, 966 demonstrated their knowledge of basic forestry skills through structured events.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	FY2002
Human Resources (FTEs)	18.25
Fiscal Resources (Smith-Lever)	\$503,954
Fiscal Resources (match)	\$503,954

GOAL 4

Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air, and biotic resources.

Planned Program – Watershed Management to Enhance Water Quality

KEY THEME – Water Quality

a. Brief description of activity:

Pennsylvania is home to abundant water resources including 80 trillion gallons of groundwater, thousands of private ponds and reservoirs and 43,000 miles of streams. The state's large rural population utilizes over one million private water systems and about 1.5 million on-lot septic systems. Extension programs and resources are targeted at proper management of private water systems, ponds, on-lot septic systems and increasing understanding of watersheds and groundwater. Programs have been delivered in collaboration with federal, state and local government agencies; civic groups; schools and watershed organizations.

During FY 2002 a wide variety of delivery methods were used including satellite downlinks, web pages, web casts, displays, publications, face-to-face programs, site visits, newspaper and radio stories and television programs. A water quality web site was created to provide resources for private water system owners with over 1,200 visitors since June 2002.

The groundwater flow model was used to educate 427 students and 67 adults about groundwater flow and contamination. Eleven programs on pond management were delivered to an average of 30 participants each. A total of 130 middle school students also participated in an all-day pond ecology course. A pond management web page was developed, with cooperation from the Pennsylvania Fish and Boat Commission, to provide resources on proper pond management <<http://www.sfr.cas.psu.edu/water/pond%20management.htm>>. Over 40 new fact sheets were added to the site along with other resources to help homeowners properly manage private ponds.

b. Impact/Accomplishment:

- 34 of the 67 counties provided programs targeted to homeowners with private water systems.
- 462 people received individual assistance with private water system management.
- 26 counties provided programs to educate students and residents about the importance of groundwater and watersheds.
- 80 participants helped clean up nine dumps in one region of the state.

- As a result of educational programs related to water quality, more than 1,900 participants took action to protect or enhance water quality. Specific key theme areas and impacts are summarized below.
- Private Water Systems: As a result of programs and assistance, 635 individuals had their water tested, 110 installed water treatment systems to correct water quality problems and 21 private water wells were fitted with sanitary well caps to prevent surface water contamination.
- Groundwater and Watershed Awareness: Seven watershed programs were delivered to over 500 participants resulting in the creation of one watershed group and financial assistance for six existing watershed groups. Watershed programs were delivered to 97 teachers along with a new watershed publication targeting students in grades 6 to 8. All teachers indicated an increased awareness of the importance and understanding of watersheds and riparian buffers.
- On-Lot Septic Systems: Eight programs related to on-lot septic system management were delivered to 350 people. Most indicated that they had learned good management practices for on-lot systems.
- Pond Management: Over 500 pond owners visited the web site in four months, and an online survey indicated that 75% have taken action to better manage their ponds.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific*

KEY THEME – Drought Prevention and Mitigation

a. *Brief description of activity:*

Serious droughts have occurred in six of the last ten years in Pennsylvania. State-imposed water use restrictions have been imposed on many counties along with the creation of county drought task forces to help manage water resources. Falling groundwater levels have had an impact on homeowners and farms using private water systems. Extension programs have focused on providing accurate information on the status and outlook for drought conditions as well as mitigating drought effects through water conservation and management of alternate water supplies. Information and programs related to drought were delivered using a satellite downlink, a web page, various written publications, face-to-face programs, site visits, newspaper and radio stories and television programs.

Over 2,000 people attended programs or received assistance related to drought and water conservation. Several programs focused on water conservation, new water sources and irrigation for farmers. Extension water specialists provided news and radio releases and magazine and television interviews related to drought issues. Thus far, over 10,000 4-H water conservation publications have been distributed to Pennsylvania children. A web page was created to provide up-to-date drought conditions and to house Extension resources related to water conservation and well management during drought <<http://www.sfr.cas.psu.edu/water/drought.htm>>.

Cooperative Extension continues to be an important source of educational materials and programs related to the ongoing drought in Pennsylvania.

b. Impact/Accomplishment:

- Numerous county extension educators served on county drought task forces.
- Extension programs resulted in 160 participants changing water use habits and 44 installing water conserving plumbing devices.
- One borough developed a new water source and eight alternate sources were identified and tested in other areas impacted by the drought.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific

Planned Program – Sustaining Pennsylvania Forests

KEY THEME – Forest Resource Management

Managing Private Forests

a. Brief description of activity:

The main theme is to ensure the long-term productivity of private forests to the raw materials supporting Pennsylvania's hardwood industry. Activities include building partnerships and support for outreach activities by working with the forest industry, the Pennsylvania Bureau of Forestry, volunteers, and forest landowner associations. These efforts resulted in reaching 3,420 individuals. An estimated 70,000 individuals also were reached through extension publications and newsletters. Forty news releases were distributed to the state's newspapers, an estimated 350 different publications.

b. Impact/Accomplishment:

- 275 volunteers in the VIP/Covert's program were surveyed.
- 100 respondents indicated they contributed 7 years worth of time during 2001.
- Volunteers were instrumental in starting five additional county landowner associations, bringing the total to 19, which include 28 of the state's counties. These associations represent nearly 2,000 landowners who participate in educational programs regularly. For one of these associations, 101 members reported managing 14,517 acres.
- Nearly 1,000 individuals attended 6 regional forest owner conferences. At one conference, 9 of 10 respondents indicated they would use a forester to help manage their forests and 9 of 10 recognized that high-grading forest stands is a serious to very serious problem.

Professional Development

a. Brief description of activity:

Professional foresters representing the landowner provide management services to private forest landowners in about 1 in 20 timber harvests. Research suggests that

timber harvests result in sustainable outcomes, capable of producing a timber crop, about 50% of the time. U.S. Forest Service Forest Inventory and Assessment data suggest that 60% of the stands in the state have insufficient regeneration, and less valuable tree species (e.g., red maple, black birch, and black gum) are increasing in frequency. Educational programs for resource professionals are important to increase sustainable management activity on private forests.

An estimated 700 resource professionals participated in educational programs. Nearly 200 participated in the Eastern Hardwood Regeneration Institutes to learn about the impact of natural and human caused disturbances on regeneration and stand structure. Fifty-nine foresters participated in a week-long workshop on Allegheny Hardwood Silviculture.

b. Impact/Accomplishment:

- 225 resource professionals responsible for managing 6.8 million acres in Pennsylvania and New York attended Forest Health 2002. Professionals from 33 counties in Pennsylvania participated. They learned about current insect and disease issues affecting Northeast forests. The foresters also attained pesticide certification.
- 95% of these foresters indicated that they use the information gained as important decision-making criteria in their management responsibilities.
- 300 Bureau of Forestry foresters discussed ways to increase their success working with private owners, learned to use educational tools and approaches, and planned ways to reach more private landowners through education.

Timber Harvesters

a. Brief description of activity:

Timber harvesters work on nearly all of the estimated 20,000 timber sales conducted in the state annually. Working with the American Forest and Paper Association Sustainable Forestry Initiative® (SFI), an estimated 300 timber harvesters—about 1 in 8 statewide—participated in one or more courses designed to communicate sustainable forestry practices. These courses included Sustainable Silviculture, Ecology and Silviculture, and The Decision Tree, a course designed to convey the impact of harvesting on biodiversity and wildlife habitat. Three-hundred timber harvesters took at least one of the three courses developed in cooperation with SFI, the forest industry, the Pennsylvania Audubon Society, and the U.S. Forest Service.

b. Impact/Accomplishment:

- 100 loggers participating in the Sustainable Silviculture Course indicated that they would use the sustainability key, a dichotomous key designed to help them identify sustainable and unsustainable practices relating to timber related outcomes.
- All of the loggers indicated they thought the course would improve communication between foresters and loggers, and they would use information from at least some part of the course.
- 94% said they would use the tool as presented, and 82% said they fully or mostly understood the information contained in the course.

- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistate Extension (NY) and Integrated Research and Extension.*

KEY THEME – Natural Resources and Youth

a. *Brief description of activity:*

Reaching youth about forest stewardship and sustainability is important as they are the next generation of decision makers. An estimated 1 in 9 households in Pennsylvania currently owns forestland, and many of these households or family groups have school age youth. Outreach efforts include school enrichment programs and traditional 4-H clubs and projects. An important outreach audience is teachers who receive training to instruct to educational standards, to use demonstration areas and to develop and use web-based lesson plans. Extension educators partner with schools in these efforts.

Programs designed to teach youth about private forestland management reached 3,615 participants. An additional 966 youth participated in structured events (e.g., field days, day camps, and forestry events) designed to demonstrate their knowledge of basic forestry skills. Two different four-daylong programs were available for teachers. Thirty-eight teachers participated in the Forest Resource Institute for Teachers (FRIT) and 30 teachers attended the Aquatic Resource Institute for Teachers (ARIT). Ten publications in the *From the Woods Series* are available. These publications for students in grades 6 to 8 have lesson plans and pre- and post-tests available through the Web at <http://sftrc.cas.psu.edu/From_the_woods.htm#woods>

b. *Impact/Accomplishment:*

- More than 300 lesson plans have been produced by FRIT participants in the past three years.
- 120 of these lessons plans are now available at the Sustainable Forestry Teachers Resource Center, a website developed for teachers across the country to use to access this resource <<http://rnrext.cas.psu.edu/>>.
- During the first month of operation this site received over 11,000 hits.
- A team of four teens and four adult volunteers competed in the 23rd national 4-H Forestry Invitational held in West Virginia. The Pennsylvania team placed sixth in the competition, the highest place finish since teams began competing from the state. Team members earn the right to represent Pennsylvania at the national invitational by scoring in the top four in state-level competition.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific*

KEY THEME – Other

Urban and Community Forestry

a. *Brief description of activity:*

The Pennsylvania Community Forestry Program, in partnership with the Department of Conservation and Natural Resources Bureau of Forestry, helps municipalities, volunteers and the green industry develop sustainable community forest management programs aimed at restoring, preserving and enhancing the residents' quality of life. Four urban foresters and a faculty member provide technical assistance; offer educational opportunities and publications; empower and train volunteers; and assist with grants that support tree planting, pruning, tree care to maintain health and safety, and building public support for community tree programs.

Examples of activities follow. A total of 441 commercial arborists and utility arborists received instruction to improve the quality of their tree work and to prepare for a Certified Arborist exam. About 4,000 people, including legislators and urban forestry coordinators in other states, received *Urban Forestry News* and/or the magazine *Sylvan Communities*. A redesigned website <<http://4trees.cas.psu.edu>> includes printable grant forms, publications, success stories, and links to other sites useful to our clients.

b. *Impact/Accomplishment:*

- 515 municipalities started new tree care programs or improved existing programs, thus enhancing attractiveness, safety and environmental and economic benefits of landscape vegetation.
- 81 municipalities received Tree City USA Awards in recognition of their accomplishments.
- 4,025 local volunteers in 598 groups assisted in projects involving tree inventories, planting, pruning, vegetation management and working with municipal officials.
- 48 municipalities and volunteer groups received \$148,426 worth of grants, matched this amount to amplify effectiveness, and used funds for tree planting, pruning and education about natural resources.
- 5,213 workshop/conference participants at 72 educational events learned about various topics involved in urban forest stewardship and used this knowledge to improve the effectiveness of tree commissions and to promote tree care programs.
- 220 eighth grade students from 16 inner city schools learned about natural resource careers, and then shared their experiences with 2,000 (estimated) classmates. This project, "Growing Your Future," received a National Arbor Day Foundation Award.

c. *Source of Federal Funds—Smith-Lever 3b&c, State matching funds, and USDA Forest Service grants, matched by Penn State University.*

d. *Scope of Impact—State specific and Integrated Research and Extension.*

GOAL 5

Empower people and communities, through research-based information and education, to address the economic and social challenges facing our youths, families, and communities.

Overview

Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. Penn State Cooperative Extension accomplishments related to Goal 5 for the third year of the five-year plan of work were highly satisfactory. As outlined in the plan of work, Cooperative Extension emphasizes five overarching goals: (1) increasing the quality of child care, (2) strengthening the capacity of families and communities; (3) increasing youth life skills; (4) developing leadership capacity in adults and youth; and (5) increasing the understanding of public policy issues. Within each of these areas, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving the issues critical to a diverse clientele.

Our evolving contemporary society is clearly dictating that child care continues to be a major need within the Commonwealth. During 2002, 16,020 child care providers engaged in professional development activities through Cooperative Extension, and 14,996 providers increased their knowledge, skills, and abilities relative to proper child care practices. Penn State Cooperative Extension's Better Kid Care Program provides statewide educational materials and resources, directs training workshops, satellite broadcasts, Internet-based workshops, telephone help line, videos, and educational activities for child care providers, parents, and employers. Over 18,000 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.

Social and economic changes continue to have a tremendous impact on children and families. Because Pennsylvania has the nation's second highest percentage of population older than 65, Cooperative Extension continues to broaden its aging and intergenerational programming across the lifespan. Extension educators provide parenting programs for audiences from grandparents, fathers, and foster parents to teens and underserved populations such as prison inmates. To address problems of contemporary youth, research-based programming is being implemented such as the Extension and Schools Enhancing Life Skills (EXSELS) project funded by the National Institute for Drug Abuse as a collaborative, school-based drug prevention project in middle schools. A total of 1,540 interagency collaborations were in effect during 2002 to ensure and improve outreach to families and especially to higher risk families. Through these collaborations and related programming, 22,401 youth and parents improved their social and communication skills.

The development of Pennsylvania’s youth into productive, contributing members of society is the goal of 4-H and related youth development programming. A total of 141,524 youth participated in 4-H and other youth programming. Of these, 113,534 youth demonstrated the development of life skills such as decision-making, recordkeeping, communication, and problem solving. This occurred through educational programming in the life, physical, and social sciences, leadership, citizenship, and personal development. Traditional club-focused programming continued but more efforts were concentrated on after-school youth programming and reaching underserved audiences.

The development of competent, caring, and contemporary leaders continued as a major focus for Cooperative Extension programming. Consequently, 10,229 individuals participated in formal leadership and volunteer development programs. Slightly over 12,000 (12,219) individuals participated in ongoing volunteer and leadership activities such as extension boards, committees, 4-H and youth volunteers and Master Gardeners. As a result of leadership programming, 16,352 individuals increased their knowledge of and/or performance of leadership skills. For example, the State 4-H Capital Days program hosted over 120 youth who traveled to the state capitol to learn how our state government operates and their roles as citizens. One initiative of the 4-H centennial celebration was the National Conversation on Youth Development in the 21st Century that brought together more than 100,000 people in local, state and national meetings to discuss the needs of youth. All but one of Pennsylvania's 67 counties held local conversations. A statewide conversation was held with 75 youth and 95 adults participating. The Pennsylvania Conversation generated four major action items related to youth concerns.

Community and public policy education and decision making in Pennsylvania are characterised by a mosaic of decentralized jurisdictions, authorities, and interests. Local governments continue to be involved in an increasing role in the decision making process. As well, an array of changes and constituents shape environmental and societal outcomes. The number of participants in programs related to public policy issues totalled 7,569 with 2,609 participants indicating increased knowledge and understanding of public policy issues such as local taxation, land use, the environment and natural resources and economic development.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <http://pow.cas.psu.edu>.

	FY2002
Human Resources (FTEs)	196.69
Fiscal Resources (Smith-Lever)	\$4,881,831
Fiscal Resources (match)	\$4,881,831

GOAL 5

Empower people and communities, through research-based information and education, to address the economic and social challenges facing our youths, families, and communities.

Planned Program – *Strengthen and Support Family Well-Being*

KEY THEME – Child Care Issues

a. Brief description of activity:

Penn State Cooperative Extension's Better Kid Care Program provides statewide educational materials and resources, direct training workshops, satellite broadcasts, internet-based workshops, telephone help line, videos, and educational activities for child care providers, parents and employers. Satellite training workshops, produced at Penn State, were downlinked on average to 55 Penn State Cooperative Extension sites across Pennsylvania and on average to 40 states nationwide.

b. Impact/Accomplishment:

- Over 32,735 child care providers were trained statewide enabling them to operate in compliance with state regulations.
- 18,245 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.
- 1,071 legally unregulated child care providers received training through participation in satellite workshops or direct training.
- 7,212 child care providers received state-mandated certification through distance education video based units or web-based units.
- 6,207 child care providers enrolled in and participated in the print-based training that enabled them to meet minimum state standards.

A telephone survey, using a randomly selected sample of all participants in the seven county Capital Region, was conducted. The purpose of the evaluation was to measure the effectiveness of the satellite workshops as a methodology for change.

- 61% of the participants in the "Pets in Child Care," 49% of those in "New Ways to Plan Activities" and 44% of those in "Let's Celebrate" found the training "very helpful" (N=136). Four highly recommended suggestions in each training session were solidly on target. Almost all child care providers who put the 12 suggestions into practice regarded the implementation of these suggestions as "not difficult."
- Findings also indicate that four highly recommended suggestions made in each training workshop were solidly on target. Almost all the providers who put these suggestions into practice regarded the implementations as "not difficult": 79% in "New Ways to Plan"; 93% in the "Let's Celebrate"; and 100% in the "Pets in Child Care" (N=4-65).

- Child care providers indicated that they are committed to satellite training. Depending on the training, 74-81% reported that they were "very likely" to attend another Cooperative Extension satellite training in this year (N=105).

Examples of various programs offered in different counties in which evaluations were completed follow.

- A year-end evaluation of 862 child care providers trained in child development (return rate of approximately 16%) indicated providers were able to make changes as a result of participating in the classes. They reported better communication with parents, better classroom management skills, new activities to share with children, and more resources to share with parents. Providers reported, "Classes in Better Kid Care have opened our minds and eyes to many new ways to teach."
- The goal of the Better Kid Care Mentoring Project for family and neighbor/relative providers is to equate quality business practices with the appropriate development of the children in care.
 - 33 providers or potential providers permitted a first visit.
 - 78% (N=26) sought repeat visits.
 - 6 providers began networking groups to increase their understanding of business operations as it relates to developmentally appropriate child behavior.
 - One potential provider opened a center and met the Pennsylvania Department of Public Welfare licensing requirements.
- 100% (N=23) of the participants in a workshop on computers in child care were able to list two or more ways to integrate computers into child care: to involve parents with computers used by their children in child care, to encourage children to learn about computers from other children, and to use criteria for evaluating software for children.
- 40 child care providers with the potential to reach 866 children attended "Nutrition on the Bookshelf," a literacy program using cooking activity storybooks to help children learn reading skills and to promote adult-child interaction in preparing foods.
 - 92.5% (N=37) reported an increase in their knowledge about how to teach nutrition.
 - 40% (N=16) reported a significant increase in their personal knowledge.
- "Kids in Control" 4-H projects were completed by 214 third grade students in 2 counties. Eleven teachers and guidance counselors volunteered 30 hours preparing materials and 99.5 hours teaching "Kids in Control" self-care skills. Written evaluations from 17 students indicated:
 - 100% understanding a maxi, mini, or not emergency.
 - 82% reported feeling better able to solve problems with brothers and sisters.
 - 71% reported following house rules and helping to take care of their home/chores.

- 94% reported knowing more about taking care of themselves.
 - 88% reported thinking their family feels better about how well they can care for themselves.
- Results of an intensive survey of 530 child care centers conducted by Cooperative Extension in 2 counties indicated:
 - 10 different newspapers wrote feature articles on the low wage situation present in the county-based centers; local elected officials requested and received the results of the survey.
 - 100 center directors participated in an all day conference and analyzed the results and then presented the findings to respective board members and owners.
 - 67 professional staff of the Midwestern Intermediate Unit participated in a 6-hour interactive workshop on discipline. Pre Post Evaluation results follow:
 - Confidence to follow a stop message with teaching message (Pre = 8; Post = 41).
 - Importance of acknowledging a child's feelings (Pre = 27; Post = 59).
 - High level of knowledge of time-in (Pre = 4; Post = 31).
 - Likelihood to look for lack of skill as a cause for a child's misbehavior (Pre = 14; Post = 53).
 - 19 child care providers completed the requirements for certification in First Aid as a result of participating in the county-wide first aid training required by the Department of Public Welfare.
 - 82% of the 50 participants in a fire safety workshop developed a fire evacuation plan for their family child care home or center using the fire safety and evacuation process.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistate Extension (40 states across the country participate in Better Kid Care program), and Integrated Research and Extension.*

KEY THEME – Parenting Education

- a. *Brief description of activity:*
 Extension educators provide parenting programs for a variety of audiences across the Commonwealth, from grandparents, fathers, and foster parents to teens and underserved populations such as prison inmates.

Extension educators offer programs for various underserved audiences. For example, children's activities were provided at five housing projects in 3 counties in collaboration with the Central Susquehanna Intermediate Unit's Summer Festival. Twenty to thirty families attending at each site received parenting tips, registered for age-paced newsletters related to their children and entered drawing for parenting book door prizes.

b. *Impact/Accomplishment:*

- In post evaluations of two parenting programs with supplemental programs for children offered in one county, "Discipline" (N=28) and "Ready to Learn" (N=24), parents recorded these results:
 - 90% (N=28) reported learning new knowledge on establishing reading routines and its importance for their child's development.
 - 81% (N=28) reported learning that children learn through singing, playing, talking and every day activities.
 - 95% (N=24) reported learning that talking and reading with their child is important for brain development.
 - 95% (N=24) reported learning that using games and activities are important to help their child learn to read and write.

- 80 inmates from different racial groups participated in a pre-release program at the Lewisburg Federal Prison, "How to Connect with Your Family When You Return Home," which included discussions on communication skills and how to handle your child's reaction to your presence at home after an extended absence.

- 37% (N=134) of parents of Wyoming Valley West sixth grade students responded to a Reader's Survey evaluation of the *Tween Topics* newsletter:
 - 96% rated the publication overall good or excellent.
 - 68% increased their knowledge about communications with teens.

- Seventeen families with young children in one county were enrolled in a six-week home visitation program focusing on the needs of the family. The impact of the program varies among the families. Of those completing the six-week series,
 - 35% of the families indicated patience was at the top of their lists as concepts learned.
 - 47% of parents came to realize that things their children are doing are appropriate for that child's age, that fighting among siblings is normal and to be expected, and that children are not to be compared.
 - 82% of parents learned new ways for relieving stress such as more free time for themselves, relaxation techniques, separating themselves from the child when they feel overly angry and taking up hobbies the whole family enjoy.
 - 35% of the families also began using reward charts for good behavior as well as giving choices to their children.

- 250 young adolescents learned a three-step process to handle conflicts with their parents: listen respectfully, decide if what was said was true and apologize or negotiate. Evaluations from "You and Your Parents Making it Through the Tough Years" reported that the number of adolescents helped a little or definitely helped by the following ideas were:
 - 73% (N=250) were helped knowing that a parent or guardian also has to live with rules and responsibilities.

- 60% were helped knowing that the important thing about conflict is how we handle it.
- 69% were helped knowing the three things you can do to make conflict better.
- 53% said they used or planned on using the learned process to make a conflict better.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific*

KEY THEME – Children, Youth and Families at Risk

a. *Brief description of activity:*

Social and economic changes continue to have a tremendous impact on children and families. The electronic revolution has changed the world dramatically, speeding up the pace of life and eroding the sense of community. At the same time, plummeting wages, lengthening work weeks, joblessness and rising job insecurity means that most Americans are working longer hours for less pay (Hewlett and West, 1998). Families are stressed and may not spend any regular, meaningful time together as a group; children increasingly are home alone (Hewlett and West, 1998; Pipher, 1996). The increasing engagement of youth in risk behaviors has been linked to these shifts in community cohesion as well as to lack of parental supervision (Hewlett and West, 1998; Pipher, 1996).

Cooperative extension educators have been working with high risk families and youth conducting programs that create structured out-of-school experiences fostering youths' skills and competencies. In one county, extension has implemented one of the Office's of Juvenile Justice's BluePrint programs entitled PATHS (Promoting Alternative THinking Strategies). PATHS was implemented for 782 first, second and third grade students by classroom teachers in the Wilkes-Barre Area School District. In another county CYFAR after-school program, 43 students were served on a regular basis during the program year.

b. *Impact/Accomplishment:*

- Of the 36 students who participated in the FAST After School Program all year in one county, 26 attended 80% or more of the sessions. Based on a comparison of grades from the first grading period to the fourth, the student's academic performance increased by at least one letter grade or more in all subjects as follows:
 - Reading – 33%; Math – 22%; Language – 41%; Spelling – 33%; Science & Health – 37%; Social Studies – 30%.
 - Based on quarterly teacher ratings, 47% of the students who completed the FAST After School Program showed an increase in homework completion from the first to the fourth grading period.
- Agencies and schools across the county continue to forge partnerships through Communities that Care (CTC). Based on archival data and youth risk survey results in

Centre County, a three-year prevention plan was developed for Bald Eagle, Bellefonte, and Penns Valley school districts. The extension educator serves as CTC project director, is co-chair of the Northwest CTC group and serves on state CTC advisory.

- CTC submitted, with the three school districts, and received a four-year, \$970,000.00 violence prevention grant to implement PATHS and Parents Who Care.
- A collaboration between the school district, CTC, and Cooperative Extension in one county has provided a challenge leadership program that creates situations that challenge the abilities of individuals and groups and promotes leadership development. The Penn York Challenge program includes youths from grades 6 through 12. Older youths are trained as facilitators, in order to promote positive role models in the school. The end result is a more confident, competent, and capable individual and a more cooperative team.
 - All of the 242 participants indicated they had increased their knowledge in how to get along with others.
 - 85% indicated they had increased their understanding in how to work as a group.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

KEY THEME – Aging Issues

Pennsylvania has the nation's second-largest percentage of population older than 65. During the past two decades, the 60-and-older population grew nearly twice as fast as the rest of the population. Penn State Cooperative Extension continues to broaden its aging program. This includes expanding educational services for senior adults and professionals who work with them as well as developing roles for senior adults in other Extension program areas. The one word which best characterizes the aging program is "inclusiveness"; through Cooperative Extension, senior adults are finding opportunities to contribute to youth development, strengthen families and become more active in community affairs. Healthy aging, caregiving and strengthening intergenerational relationships are the focus of the program.

a. Brief description of activity:

"Healthy Aging" presentations were conducted in 57 senior centers, based in 20 counties. The workshops focused on nutrition, food safety, diabetes prevention, weight management, dental health, and physical activity. Extension educators also targeted seniors through other outreach education efforts, including: displaying educational materials in mall and county fairs, writing articles for local newspapers and hosting satellite downlink programs on topics such as osteoporosis and cancer prevention. Most of the materials used in the programs on osteoporosis and diabetes were developed through the "Creating Health" initiative, a university-wide group of

scholars and program staff working to translate research findings in the field of health into public education programs.

b. Impact/Accomplishment:

- "Healthy Aging" presentations in 57 senior centers reached 1,585 senior adult center participants. Evaluations were overwhelmingly positive indicating that the majority of the participants plan to make desirable behavioral changes regarding their shopping, cooking, eating and physical activity.
- 212 senior adults who participated in one county's 10-week weight management and nutrition education program reported weight loss of an average of 6.4 pounds.
- The series of satellite programs on aging-related topics downloaded by County Extension offices was popular with many senior adults and the professionals who work with them. One example, the "Management Strategies for Osteoporosis" teleconference, co-sponsored by the Geriatric Education Center, was downloaded at 17 extension offices and drew 53 participants, most of whom reported gaining valuable information about osteoporosis.

a. Brief description of activity:

A series of presentations on caregiving and grandparents raising grandchildren issues have generated follow-up activities. In four counties, extension educators established viable grandparents raising grandchildren support groups that meet monthly.

b. Impact/Accomplishment:

- 14 intergenerational programs were implemented in 10 counties to strengthen senior adults relationships with people from other generations, and a series of workshops were held on intergenerational relations issues, such as succession planning.
- Over 400 people participated in 8 workshops on caregiving and grandparents raising grandchildren (GRG) issues.
- As other indications of Cooperative Extension leadership in this area, extension educators developed support groups for GRG families in 4 counties, and the Pennsylvania Department of Aging agreed to provide a grant to an extension-led team of professionals to develop a series of fact sheets on GRG issues.

a. Brief description of activity:

To strengthen senior adults' relationships with people from other generations, 14 intergenerational programs were implemented in 10 counties, and a series of workshops were held on intergenerational relations issues such as succession planning. Over 1,650 Pennsylvanians, approximately 350 of whom are older adults, participated in 14 extension-based intergenerational programs. This includes 650 residents in 2 counties who participated in "Futures Festival" events which were successful in promoting intergenerational dialogue on local community development

issues. In one county, 39 people attended a presentation on the intergenerational transfer of property.

4-H and youth development extension educators in 6 counties have instilled an intergenerational activity into traditional 4-H programs. For example, in one county, youth displayed and talked about their small pets with nursing home residents and in another 4-H'ers conducted a well-received fashion show for residents of an assisted living facility. These intergenerational activities provide senior adults with an additional source of stimulation and support and add to the educational and recreational value of these programs for youth participants.

b. Impact/Accomplishment:

- 54 residents in 4 counties attended workshops on farm transfer issues.
 - 88% of these participants reported gaining valuable information about the legal and tax consequences associated with farm transfer strategies.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

KEY THEME – Other

a. Brief description of activity:

Extension and Schools Enhancing Life Skills (EXSELS), funded by the National Institute for Drug Abuse, is a collaborative, school-based drug prevention project being conducted in 8 Pennsylvania middle schools. The EXSELS project entails replicating the 2-year Project ALERT drug prevention curriculum and testing an adaptation in program deliverer. The school program is taught by community program leaders hired through Cooperative Extension instead of by health educators as in the original clinical trial. At the end of year two, 2 cohorts of seventh grade students had completed the first year of the curriculum.

An extensive program evaluation is being conducted over the 4 years that students participate in the project. An annual survey asks students about their current use of alcohol, tobacco, and other drugs, their beliefs about the prevalence of substance use among their peers, and other related measures.

b. Impact/Accomplishment:

- 8 site coordinators, 8 adult program leaders, and 50 teen leaders across the 8 counties were given training to conduct the project.
- Adult program leaders (alone) delivered the Project ALERT curriculum to 632 seventh grade students.
- Adult program leaders (assisted by teen leaders) delivered the Project ALERT curriculum to 634 seventh grade students.
- Preliminary evidence for the 8 schools combined is encouraging.

- Compared to students who did not have the curriculum, students who participated in the 3-month Project ALERT program in seventh grade during the last 2 years reported beliefs that are associated with less substance use.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

Planned Program – 4-H and Youth Development

KEY THEME – Youth Development/4-H

Cooperative Extension offers a variety of programs promoting and enhancing youth development and life skills through animal and plant sciences, family and consumer sciences, natural resources, applied science and technology, leisure education and outdoor skills, personal development, cultural competency and citizenship, as well as participation in the 4-H Centennial Celebration.

- a. *Brief description of activity:*
Youth involved in the 4-H animal science program develop and practice life skills and learn and apply project skills and knowledge through club and project work, workshops and seminars, field trips and tours, day and overnight camping experiences, and roundups and sales.
- b. *Impact/Accomplishment:*
 - Two new statewide initiatives were introduced in 2002: "Youth Animal Science Projects: Your Responsibilities" and "Horsemanship Skills."
 - More than 17,000 animal science 4-H projects, including beef, sheep, swine, dairy and horse were carried by Pennsylvania 4-H'ers in 2002.
 - Statewide, 100% of youth exhibiting dairy, horse, and livestock projects participated in "Youth Animal Science Projects: Your Responsibilities."
 - One county's evaluation of the program (N=187) show:
 - 77% of respondents indicated they were "informed" or "well informed" on proper injection sites and withdrawal times.
 - 92% reported that they would report unethical practice(s) to their 4-H leaders or show officials.
 - As a result of the "Horsemanship Skills" initiative,
 - 270 volunteers were trained as clinicians and examiners.
 - More than 150 youth passed the level 1 skill test, demonstrating their mastery of specific horse safety and horsemanship skills.
 - Embryology, a life sciences school enrichment program, reached nearly 51,000 youth.
 - One county reported that the embryology program was successfully modified for use with 68 special needs students, including six deaf students.

- A written evaluation by the teachers indicates that 98% of 2,406 students learned respect for living things; 98% learned about egg parts and their functions; 93% learned the needs of the growing organism; and 64% learned about data collection.
 - Teachers report that they used embryology to teach math, writing, and language skills. The program ". . . helps connect our children more closely to our farming community."
- Of 23 youth involved in a veterinary science short course:
 - 83% increased their knowledge of basic animal restraint and safe handling of injured animals.
 - 100% of participants increased their knowledge about career choices and preparation for a veterinary career.
- a. *Brief description of activity:*
 Youth participating in the 4-H Plant Sciences program learn basic plant science skills such as how to grow and care for plants, flowers and vegetables, plant propagation, plant identification and effective gardening skills, in addition to life skills such as communication and decision-making. Youth participate in the plant sciences program in schools, after-school programs and in traditional 4-H clubs.
- b. *Impact/Accomplishment:*
- Over 6,000 youth completed the "Meet the Plants" introductory project.
 - An evaluation after a "Meet the Plants" workshop in one county indicated that over 90% of the participants (N=46) learned the three parts of a mushroom, how roots work and water usage and conservations tips.
- More than 13,000 youth in both urban and rural environments were enrolled in 4-H Plant Sciences programs.
 - 240 urban youth learned how to force bulbs to bloom. Some of these youth were disabled and others lived in an urban housing development.
- Five counties used the "Meet the Plants" project to reach targeted at-risk audiences.
 - At-risk youth planted a vegetable and flower garden increasing their sense of belonging to a community.
 - Inner-city youth in the "Grow Lab" learned to grow vegetables, flowers and herbs.
 - A program was conducted with limited skills, learning support students and 52 members of the Scranton Boys' and Girls clubs.
 - In one county, schools with high minority populations were targeted, in addition to traditional club enrollment of 200 in other plant science projects.
 - 328 youth in a city program completed the project along with "Indoor Gardening" and summer day camps. Youth planted and took care of a community garden, donating excess produce to the local food bank.

- a. *Brief description of activity:*
 Youth enrolled in the family and consumer science 4-H youth programs learn about a wide variety of topics including foods and nutrition, textile science, financial management and child development. Youth learn through enrollment in 4-H projects, participation in fairs and round-ups and in county, regional and state competitions.
- b. *Impact/Accomplishment:*
- Nearly 100% of youth (49) learned about food safety techniques and used them in preparing for a food revue competition.
 - 69% of participants could identify a food safety practice learned.
 - 22 youth at a textile science camp completed a community service project by making stuffed animals for children living in Women's Abuse Shelters.
 - 6 family and consumer sciences teachers were trained to use the "High School Financial Management Program" in their schools.
 - 400 younger youth in one county increased their decision-making skills by participating in "Kids and Kash."
 - 45 youth were trained in basic babysitting skills such as how to handle emergencies, developmental expectations and behavior management. All were able to identify at least one change they would make in their babysitting practices as a result of the training.
 - 95% of the youth enrolled in the babysitting course were able to identify age-appropriate activities and 90% felt more comfortable in their role as babysitters.
- a. *Brief description of activity:*
 Youth involved in 4-H natural resource projects and programs develop and practice life skills through club and project work, day and resident camping experiences, school enrichment programs, field studies and participation in contests and special events. Environmental and Ecology education standards have been adopted in Pennsylvania, and 4-H project materials are being used extensively to help teachers integrate these standards into their curriculum.
- b. *Impact/Accomplishment:*
- Watershed programs address the Environmental and Ecology education standards for watershed and wetlands. In one program, 250 students were able to define a watershed, explain how water enters a watershed, and define the route that water from a nearby stream takes to eventually arrive in the Gulf of Mexico, demonstrating the impact runoff from their communities has both nationally and internationally.
 - 5 programs on insects were presented to 448 youth in classrooms and youth organizations.
 - 100% of the participants were able to identify the three parts of an insect and tell the difference between an insect and an arachnid.
 - 88% were able to list the life cycle of a butterfly.
 - 95% were able to explain why bees are beneficial to farmers and agriculture.

a. *Brief description of activity:*
Youth participating in the applied science and technology programs explored electricity, rocketry and computers. The three 4-H projects include: "Rockets Away," the "Electricity" series and "Computer Mysteries." The 4-H Electricity project is a collaborative program with a faculty member in the College of Engineering.

b. *Impact/Accomplishment:*

- A pilot electricity program was initiated with two 4-H clubs in one county.
 - Youth were able to list 2 new things they learned including using LEDs, reading schematics, and how to change a capacitor with a 9 volt battery.
 - Youth made a working LED and constructed a moving butterfly.
- 100% of youth in an enrichment program using the 4-H Electricity Project worked as a team to build a circuit board, radio and small engine.
- The 4-H rocketry program is delivered to both traditional and non-traditional audiences.
 - 20 at-risk students participated in a summer camp program featuring the "Rockets Away" program.
 - Youth indicated that they learned problem-solving and record-keeping skills as they made and launched their rockets.

a. *Brief description of activity:*

Youth involved in 4-H leisure education and outdoor skill projects and programs develop and practice life skills through club and project work, day and resident camping experiences and participation in contests and special events. Teens are recruited and receive training and support to serve as counselors at camps. These teens develop life skills, including leadership, communication, decision-making and problem-solving skills as they serve in a variety of leadership roles at camp.

b. *Impact/Accomplishment:*

- In northwestern Pennsylvania, 100% of responding camp counselors reported that their participation in 4-H camping programs has helped them develop their leadership, communication, and team building skills to "some" or to a "great" extent, and all but one reported that their participation in the 4-H camping programs has helped them develop their problem-solving and decision-making skills to "some" or to a "great" extent.
- 118 volunteers from 32 counties were trained and certified as 4-H/NRA Shooting Sports Instructors. The basic firearm safety and skills projects involved more than 3,000 youth statewide in 2002.
 - 90% of responding youth in one program report an improvement in their knowledge of gun care as a result of participating in the program.
 - 100% reported increased knowledge of proper shooting techniques.

- a. *Brief description of activity:*
 4-H programs are designed to increase the cultural competence, character education and personal development of youth. Youth participate in programs to gain an increased understanding of the government and the role of a productive citizen in this country, and they learn about cultural competency, personal development and citizenship through community service activities, exchange programs and leadership training, participating in local and state government days, entrepreneurship programs and character and asset building programs.
- b. *Impact/Accomplishment:*
- Community service is a priority for many 4-H Clubs. For example, in one county, 89% of county teen council members increased their participation in community service projects; 216 members and leaders performed 853 community service hours.
 - Character Counts program results from several counties include:
 - 84% of the youth were able to identify the six pillars of character at the conclusion of the project.
 - 4-H leaders who were trained in the program indicated an average 40% increase in their confidence in teaching character.
 - Character Counts was taught at three after-school locations of which 2 classes were taught at urban sites with Spanish American youth and youth at a Salvation Army. Positive comments were garnered from parents when surveyed about their child's behavior and study skills since their involvement in Character Counts.
 - Youth participated in after-school "Mini-Society" programs in several counties.
 - 40% of the youth indicated that their knowledge of what makes up a society increased.
 - 60% said their knowledge of scarcity increased.
 - 100% of the youth enrolled in one program opened a business as part of the project. They reported learning business-related concepts such as market identification, customer service, management, promotion and publicity.
- a. *Brief description of activity:*
 4-H celebrated 100 years of successful youth development programming in 2002. One initiative of this year's centennial celebration was the National Conversation on Youth Development in the 21st Century, which brought together more than 100,000 people from all walks of life in local, state and national meetings to discuss the needs of youth. All but one of Pennsylvania's 67 counties held local conversations, and a statewide conversation was held in January, with 75 youth and 95 adults participating. Statewide, a 4-H centennial exhibit was developed, and posters were made and distributed to counties. Across the state, counties celebrated the centennial locally with a variety of special events and activities including alumni events and a unique clover power project. The 4-H program received extensive media coverage as a result of its centennial celebration.

b. Impact/Accomplishment:

- The Pennsylvania Conversation on Youth Development in the 21st Century generated the following key action items: 1) involve youth in decision-making and as active participants on boards and committees; 2) recognize youth for their accomplishments; 3) do a better job of marketing the 4-H program to schools, urban youth, and other agencies using effective and creative marketing methods; and 4) provide additional resources for the development and training of youth educators.
- Newspaper and television coverage of the centennial emphasized the evolving nature of 4-H programming to meet the needs of today's youth. As reported in the Lackawanna County Sunday Times on June 23, 2002, "Teachers across the Northeast have turned to 4-H programs for youth enrichment ideas to enhance classroom lessons. During the 2001-2002 school year, students performed rocketry and embryology projects and learned how to create their own businesses through 4-H projects in Pike and Lackawanna Counties."

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific

Planned Program – Build Leadership Capacity and Volunteer Management and Development of Volunteer Skills

KEY THEME – Leadership Training and Development

a. Brief description of activity:

Penn State Cooperative Extension conducts leadership education to prepare adults and youth to meet the expectations of the 21st century. Leadership programs include workshops, leadership institutes and conferences and volunteer leader training. In some instances Cooperative Extension collaborates with other organizations, such as Head Start, Healthy Start, Toastmasters Clubs and schools to conduct these programs. Some examples of programs are 4-H Camp Counselor Training, 4-H Toastmasters Junior Leadership and Public Speaking Course, Adams/Hanover Leadership Program, the Challenge Leadership Program, and 4-H County Council and Extension Advisory Committee Training. These programs give adults and youth opportunities to identify leadership styles, develop skills in getting along with others, decision making, and communications, and increase skills in working in groups and resolving conflict.

b. Impact/Accomplishment:

- A compilation of reports from all 8 regions of the state indicate that 1,114 individuals serve on county extension boards and 4,244 people serve on advisory boards across the state.
- A regional two-day Leaders Symposium was held in the Southwest Region, attracting 110 participants. All of the participants stated that they gained practical ideas to use

in club meetings. Participants identified 45 different ideas they learned at the Symposium that they plan to use in the next year.

- Building Leaders for the Susquehanna Valley, BLSV, is a program for high school juniors in the central Susquehanna Valley (5 counties). In the nine-day program, leadership skills are practiced and applied to relevant community and societal issues. During the 2002, 28 community resource persons collaborated with extension educators in providing programs for 65 participants.
- Of the 34 teens who are members of the 4-H County Council in one county, all improved their skills in getting along with others and understanding themselves; all assisted in planning and conducting county activities and performing community service.
 - 96% of the teens indicated they improved their ability to communicate with others.
 - 93% improved their decision-making skills, time management skills, and ability to work within a group.
 - Members commented, "County council allowed me to leave my comfort zone and try new things." "It got me more involved in the community." "It allowed me to be a positive role model for others." As the leadership skills of members increase, the council is being led by more volunteer.
- 260 volunteers in one county supported the 4-H youth programs.
 - 21 new volunteers received training.
 - After training, 80% of organizational leaders submitted paperwork on time.
 - 90% of the volunteers reported fundraising as a result of training.
- 4 of the 8 participants in a 4-H Leadership Conference later used their new leadership skills in serving as day camp counselors.
- A volunteer leader helped prepare 2 successful grant proposals for the Adams/Hanover Leadership Program in partnership with Adams County United Way, The Adams and Hanover Chambers of Commerce, Adams County Economic Development, Inc., YWCA and others.
- Youth in grades 6 through 12, participating in the Penn-York Challenge Program—conducted by Cameron County Cooperative Extension, the Cameron County School District, and Communities That Care—developed skills to become more confident, competent and capable individuals and more cooperative team members. When asked to list two new leadership skills developed or improved, responses included: cooperating with others, listening, patience, communicating with others and self-control. When asked how they might use these skills, participants said, "I will use these new skills when I am in charge of my youth group" and "Use it during group projects."

- Twenty-one Westmoreland County teens, trained to serve as camp counselors at a four-day 4-H Horse Camp, strengthened their capacity to handle behavior situations and develop group trust and ability to work cooperatively. When an unexpected thunderstorm developed during camp, the teens demonstrated these abilities when they had to handle a situation with frightened horses and novice riders. They were effective in leading a group of campers of mixed racial backgrounds toward a common goal in spite of varying degrees of consensus.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific*

Planned Program – Community Capacity Building and Decision Making

KEY THEME—Community Development

a. *Brief description of activity:*

Community and public policy education and decision making in Pennsylvania is characterized by a mosaic of decentralized jurisdictions, authorities and interests. Local governments continue to be involved with an increasing role in the decision-making process. Also, there are a wide array of changes and constituents that shape environmental and societal outcomes. Recent educational program efforts have resulted in a more informed citizenry, effected community leadership and allowed communities to continue to develop their processes and procedures for a more informed future.

Through the Pennsylvania Municipal Planning Education Institute, which is a partnership between Penn State Cooperative Extension and the Pennsylvania Planning Association, 31 in-depth planning courses were taught throughout Pennsylvania during the fiscal year. A total of 626 local elected officials and planning officials participated. Additionally, many programs were held to help landowners understand Pennsylvania's preferential tax assessment program, Clean and Green. For example, 5 meetings were held in one county with 544 attendees (including 154 women and 71 Amish men). Individual meetings were held in that county with an additional 401 landowners (including 118 women) during that same time period.

b. *Impact/Accomplishment:*

- As a result of work with a county Lead Hazards Awareness Coalition, a one-day "drop-off" household hazardous waste collection program was expanded to a year round, curbside collection program, which resulted in 11 tons of household hazardous waste being collected.
- Through collaboration among Cooperative Extension, several other academic institutions, a regional Workforce Investment Board (WIB) and a number of brownfield remediation employers, 17 individuals completed the 8-week training program in brownfield remediation. All those interested in pursuing careers in that

field (15) did so. As a result of the training, two decided the work was not their career choice.

- A variety of successful grant-writing programs were held throughout Pennsylvania. After one program, for example, 66% percent of the participants planned to apply for public funding and 85% planned to apply for private funding within the next 6 months.
 - A community dealing with dilapidated buildings, youth flight, an eroding tax base, and lack of community identity developed a focus for the future of their community with assistance from the extension educator. They received over \$5,000 in grant funding; designed and installed a large welcome sign at the entrance of the community; developed a community newsletter, two positive press articles and a community clean-up; formed a committee to encourage retention and recruitment of businesses; and developed a short list of future community milestones and targets.
 - Over 200 participants attended a program in one county to help landowners better understand gas/oil leasing procedures. Individual assistance was provided over the phone or in person to an additional 45 people. One group of 26 landowners decided to pool their acreage for leasing; their neighbors received \$2.00 per acre, while they have been offered \$15.00 an acre.
 - 120 individuals participated in 20 12-hour, hands-on eBusiness for Small Business programs offered by extension educators in 12 counties, primarily reaching small business owners. Participants indicated the program provided them with the skills and knowledge to develop the eBusiness component of their business plan.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

Planned Program – Consumer Horticulture

KEY THEME – Other

- a. *Brief description of activity:*
- Consumer horticulture greatly impacts environmental quality. As suburban growth continues, more and more land is occupied by housing which increasingly strains natural systems. An educated consumer can make better decisions on plant material and landscape management practices resulting in improved urban and suburban environments and better quality of life. In Pennsylvania, gardeners spend on average \$663 per household each year and contribute \$1.2 billion to the Pennsylvania economy. The landscape, nursery and greenhouse industries employ 38,000 people. The popularity of home gardening activities is expected to increase 20% over the next 10 years due to a 53% increase in gardeners, 45 to 64 years of age.

Cooperative Extension educators offer a variety of educational programs to assist consumers and green industry professionals, improving awareness of and management of the natural environment through topics such as Integrated Pest Management, drought management, appropriate plant selection, native plants, composting, landscape design and management, and vegetable and food production. A total of 49,274 consumers and green industry professionals received one-on-one consumer information or participated in organized seminars or programs. In addition, thousands of people attend demonstrations, display gardens, field days and special events. The Master Gardener Program continues to grow, reaching over 138,000 people during the year. Many training programs are offered to these volunteers who provide hours of support to county-based educators by staffing phone lines to respond to clients questions, assisting in teaching young students through elementary school science programs and supporting community efforts to reach underrepresented groups.

b. Impact/Accomplishment:

- Statewide more than 1,790 volunteers represented in all 67 counties volunteered over 82,000 hours this year in the Master Gardener Program.
- A total of 230 Master Gardener trainees in two regions (16 counties) learned basic entomology. Of 148 trainees responding to a post-training survey, 78% reported learning a lot or a great deal about entomology, and confidence in their ability to answer entomological questions increased from 11% before the training to 53% after the training.
- 31 volunteers in one county completed training; 91% indicated they would implement two or more garden practices.
- Master Gardeners helped develop several garden projects at an elementary school including a vegetable garden, bird and butterfly gardens, nature trails, and a patriotic tulip bed. The gardens are used for science, ecology and technology instruction.
- Master Gardeners in one county converted a vacant lot in Pittsburgh into the Green Millennium Children's Garden. The volunteers worked with children and adults in the garden. The Master Gardeners received a National Garden Association Youth Garden Grant, a Three Rivers Community Grant, and 200 bulbs from The Mailorder Gardening Association.
- In one county, Master Gardeners worked with migrant families, Juvenile Probation and mental health groups to establish, grow and harvest their own garden areas. Participants from Juvenile Probation donated produce to the Salvation Army.

c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.

d. Scope of Impact—State specific and Integrated Research and Extension.

Stakeholder Input Process

During FY2002, Penn State Cooperative Extension developed and delivered extension educational programs based in large part on stakeholder input obtained during the comprehensive needs assessment of more than 7,000 citizens and stakeholders undertaken to develop the FY2000–04 Plan of Work, as described in our Plan of Work submission. In addition, each county conferred with their local advisory groups such as County Extension Boards, Program Development Committees, and volunteers as they determined the local focus of their educational programs prior to the beginning of the FY2002 program year. In a similar process, extension faculty in academic departments conferred with their industry and producer stakeholder groups to determine appropriate discipline-related focus of Plan of Work activities for FY2002.

At the regional and state level, administrators conferred with and received suggestions on program direction from advisory groups such as the Pennsylvania Council of Cooperative Extension Associations and the Penn State Agricultural Advisory Council <<http://agcouncil.cas.psu.edu>>.

Penn State Cooperative Extension's stakeholder input process was very useful this year in refocusing/reaffirming priorities and in identifying emerging issues. For example, during the course of the FY2002 program year, critical issues and concerns emerged among our stakeholders, which had not been priorities during the needs assessment and subsequent program development processes. Penn State Cooperative Extension continued its efforts in the eradication of the Plum Pox virus that threatened Pennsylvania's stone fruit producers, and spread of the West Nile encephalitis virus. Homeland security concerns caused resources and program priorities to quickly shift to an integrated approach to delivering extension educational programs. Each county extension office has identified an educator responsible for communication and cooperation with the local Emergency Management Coordinator. Penn State faculty have established communications with PEMA and the Pennsylvania Office of Homeland Security.

Penn State Cooperative Extension encourages and supports broad-based representation of all facets of Pennsylvania's citizenry on all local, regional, and state advisory groups.

Program Review Process

No significant changes were initiated in Penn State Cooperative Extension's Program Review Process during year three (FY2002) of the Plan of Work.

Evaluation of the Success of Multi and Joint Activities

Multi-State Activities

Penn State Cooperative Extension continues to collaborate with other states on important extension and extension/research activities. Many of these ongoing and successful educational activities had not previously been formalized by memoranda of agreement or other contractual arrangements. Support for many of these activities was not auditable to Smith-Lever dollars. Since the implementation of the current plan of work, the director and associate director have entered into discussions with their colleagues in other states to formalize agreements in support of both ongoing and new multistate cooperative programs. Fiscal support for Penn State Cooperative Extension's ongoing and new multistate extension educational programs has been realigned so that it is auditable to Penn State's appropriated Smith-Lever funds. During the third year of the plan of work, Cooperative Extension exceeded the estimated cost target of \$350,000 (See Appendix A).

The Lake Erie Regional Grape Research and Extension Center and the Mid-Atlantic Fruit and Vegetable Conference are just two examples of ongoing multi-state activities that have consolidate states' efforts and which continue to grow, reaching wider audiences. Other activities, such as Access eGovernment, represent more recent initiatives. Documented impacts of multistate activities are noted in the brief summaries section of the report.

Integrated Activities

Penn State under President Graham Spanier, is dedicated to the goal of becoming "the premier university in the nation in the integration of high-quality teaching, research, and service." Penn State Cooperative Extension and Penn State's Experiment Station continue in their commitment to integrating research and extension programming, fostering mutually beneficial interactions. More than 70 percent of all Penn State Cooperative Extension faculty and staff working at the University Park campus have joint extension and research responsibilities. These faculty and staff members conduct and support basic and applied research which informs and shapes extension programs. Joint appointments are, and will continue to be, the norm in the College of Agricultural Sciences.

An example of Penn State's integrated response to emerging issues is the successful biosecurity and disease prevention activities such as Avian Influenza, Plum Pox Virus, Foot and Mouth disease, *E. coli* 0157 and the West Nile Virus (See Planned Programs). One example of a new initiative underway is PROSPER, an innovative model for bringing scientifically proven prevention to communities to strengthen youth, families and communities. This collaborative 5-year research project is being implemented through Penn State and Iowa State University. (See Multistate Brief Summaries).

Funds supporting the extension portion of joint positions (\$2,849,765) total 30 percent of Penn State Cooperative Extension's Smith-Lever appropriation, exceeding our estimated target (See Appendix B).

Multidisciplinary Activities

All educational activities under Penn State Cooperative Extension's FY2000–04 Plan of Work were developed by multidisciplinary teams of faculty and field-based educators. Each of our Key Program Components has a multidisciplinary component. Penn State Cooperative Extension continues as a major participant in University-wide integrated, multidisciplinary efforts such as the Penn State Children, Youth, and Families Consortium and the Environmental Consortium. In addition, formalized agreements were forged between Penn State Cooperative Extension and other Penn State units (College of Medicine, College of Engineering, College of Health and Human Development, College of Earth and Mineral Sciences, College of Arts and Architecture, and Public Broadcasting, WPSX-TV) to provide multidisciplinary research and program support in critical educational program areas. One example of effective programming that resulted from these agreements is the "Creating Health" initiative. The first phase of the project focused successfully on osteoporosis with the next phase on diabetes being initiated. Documented impact of this initiative is provided in the Planned Programs.

Guideline Questions

- Penn State Cooperative Extension educational programs and activities—single state, multistate, multidisciplinary, and integrated—are based on the critical needs identified in our comprehensive statewide needs assessment of more than 7,000 citizens and stakeholders conducted in preparation for the development and delivery of the FY2000–04 Plan of Work, and on the ongoing feedback of our network of local, regional and state advisory and stakeholder groups.
- Each county monitors and records their success in reaching underserved and under-represented populations. Our Web-based reporting system currently captures under-represented audience contacts as well as other target populations like participants from Anabaptist groups and people with disabilities. Contacts reported statewide indicate Cooperative Extension's success in reaching these populations during FY2002. For example, the percentage of Pennsylvania's Hispanic population is 3.25 (2000 census data) and the percentage of contacts reported in this category was 3.61. While percentage comparisons are not available for Anabaptists (Amish and Mennonites), nearly 19,000 contacts were reported statewide for this underrepresented group. Several examples from our county contact data indicate success in urban areas as noted below. Additionally, the Hispanic Taskforce in one rural county made major strides in addressing audience needs.

Allegheny County – Black or African American, 11.15% (contacts), 12.54% (census)

Philadelphia County – Hispanic, 8.17% (contacts), 8.5% (census)

Dauphin County – Black or African American, 20.21% (contacts), 17.23% (census)

- Analysis of the outcome and impact data and narratives in the Web-based planning and reporting system continues to show very successful multi and joint program activities for all areas represented in the FY2000–04 Plan of Work. The Statewide Food Safety Certification Program provides an excellent example of efficiencies that resulted from our joint program endeavors (See Planned Programs for impacts).

MultiState Extension Activities Brief Summaries FY2002

Lake Erie Regional Grape Research & Extension Center

The Lake Erie Regional Grape Program (LERGP) is a regional, educational and research program between Penn State and Cornell Universities, and the grape industry. The educational component of the program is conducted by a four-member Grape Extension Team which consists of an area business management extension educator, area viticulture extension educator, senior area grape IPM (Integrated Pest Management) extension educator, and county extension educator (viticulture/commercial horticulture).

The Lake Erie Regional Grape Extension Team collaborated during the FY2002 year offering a broad range of programs and information to growers in Pennsylvania and New York. Examples of educational activities are listed below.

- *Lake Erie Regional Grape Growers' Conference.* A total of 224 participants from three states and Canada attended the 10th annual conference held in New York. The topic of this year's conference was managing risk.
- *Coffee Pot Meetings.* A total of 275 grape farmers attended 10 coffee pot meetings participating in discussions about crop insurance and other relevant topics.
- *Worker Protection Standard (WPS).* Intensive training sessions were conducted in two locations, and two coffee pot meetings were held on WPS, reaching 117 farmers.
- *Lake Erie Grape Farm Cost Survey.* Economic data on vineyard operations is collected each year. In 2001, 42 farms representing 4,371 acres were involved in the survey which establishes financial benchmarks for the industry allowing growers to compare their operations. Data provides growers with recommendations on gross income per vineyard acre and has tracked trends since 1991. This year gross income per acre was stable at \$1,644 with average yields at 5.5 tons per acre. Analyses indicate a slight rise in profits, however. This occurred despite increased labor costs, because other costs per acre were reduced.
- *Lake Erie Grape Program's (LERGP) Information Transfer.* Grape Extension Team members and researchers contribute timely information concerning all aspects of grape production for use by farmers, extension educators and government and industry personnel to the web site <<http://lenewa.netsync.net/public/lergphom.htm>>.

Natural Resource, Agriculture and Engineering Service Progress Report

As a funding partner of NRAES, Penn State Cooperative Extension faculty and field-based educators and stakeholders across the Commonwealth are entitled to a variety of educational resources to support or enhance programming efforts. The NRAES effort allows for collaboration on projects and activities between field-based educators, faculty, and stakeholders at participating universities. Annually, the NRAES director provides an overview of accomplishments, which includes publications (manuscripts, conference proceedings, fact sheets) developed and distributed; and conferences in planning stages and/or completed. The director also reports participation by Penn State faculty, staff, and

Pennsylvania agribusiness industry representatives in the development, implementation and evaluation of the above program/activities. The most recent report (distributed to Northeast extension directors in January 2002) indicates that:

- 9 faculty, staff and Pennsylvania agribusiness industry representatives are participating in the planning and/or will serve as speakers—one serving as conference chair—for 3 regional conferences to be held in spring 2003 on the topics of dairy housing, financial planning related to dairy expansion and stray voltage on dairy farm (no conferences were held in 2002). These programs are sponsored by NRAES and are attended by agents as well as stakeholders.
- 27 faculty members authored NRAES publications (1 publication in press).
- 28 faculty, staff, and agribusiness industry collaborators served as peer reviewers for NRAES publications.

Penn State, participating as a collaborator, providing both direct financial support and involvement of faculty and staff resources, allows the residents of the Commonwealth to receive the latest research and production practices information in four areas: horticultural production, dairy production, animal waste management, and consumer education while drawing on the expertise of faculty and staff at the 14 participating land-grant institutions.

NASULGC AESOP Extension Service—Penn State has participated as a member of NASULGC to retain the services of AESOP Enterprises, Ltd. to represent the policy positions of extension and agricultural research on budget and other legislative matters.

NASULGC Extension Program Resources—mandated assessment to support the work on behalf of the Extension System of Dr. Myron Johnsrud and Ms. Linda Kay Benning. An important component is the receipt of information and funding possibilities available to enhance programming related to critical issues facing the Commonwealth.

NASULGC ECOP Assessment—to support the work of the extension committee on Organization and Policy. Dr. Theodore Alter, Penn State Cooperative Extension Director, currently serves as a member of ECOP.

NASULGC NELD Assessment—to support the National Extension Leadership Development program sponsored by ECOP. The purpose of NELD is to enhance and foster leadership development in the Cooperative Extension Service at all levels. While Penn State does not have any interns in the current NELD class, all previous participants (five to date) have moved into key leadership roles within the Penn State or another Land-Grants Extension System.

MAAREC—The Mid-Atlantic Apiculture Research and Extension Consortium

Pennsylvania has taken the lead in an effort to establish a regional research and extension program to address the pest management crisis facing the beekeeping industry in the Mid-Atlantic region. A working group—with representation from the beekeeping associations, departments of agriculture, and land-grant universities from each of the following states: New Jersey, Maryland, Delaware, Pennsylvania, and West Virginia—meets twice a year to identify research and extension priorities for apiculture in the Mid-Atlantic region. The USDA/ARS (Beltsville Bee Lab) also participates.

To date, a MAAREC listserv has been established to improve communication among members, a research and extension priorities list has been established, and emerging issues have been identified. Publication activities include the *BeeAware* newsletter and a *Beekeeping Reference Manual*, as well as continued postings of these extension publications on the MAAREC Web site <<http://MAAREC.cas.psu.edu/>>.

A beekeeper survey on winter losses for 2001 appeared in *BeeAware*, and data has been collected for 2002. The survey also helps document how beekeepers are changing their mite control techniques. The data on winter losses follows. A total of 125 beekeepers owning a total of 3,207 colonies completed the survey in 2001, and 54 (owning 942 colonies) did so this past season. Combined, the survey respondents said they lost a total of 1,492 colonies in 2001—42% of the total—while losses in 2002 were 1/4th the level at 9.6%. A survey of Delmarva beekeepers in the *NewsyBee* newsletter was combined with this survey to show the following results:

- **2001:** 2,202 colonies lost of 6,121 total = 36% total loss rate
- **2002:** 272 colonies lost of 2,208 total = 12.3% total loss rate

Commercial Vegetable Guide Progress Statement

The Mid-Atlantic *Commercial Vegetable Production Recommendation Guide* is a cooperative effort of vegetable extension specialists from Delaware, Maryland, New Jersey, Pennsylvania and Virginia. These specialists participate in the annual revision and production of the guide. Growers look to the *Commercial Vegetable Production Recommendation Guide* for current information on crop production and pest management. Over 8,000 vegetable growers use the guide to improve production.

Northeast Wildlife Damage Management Research and Outreach Cooperative (WDM Co-op)

One of the primary goals of the WDM Co-op is to conduct research that may be utilized in the future to develop techniques for reducing conflicts between people and wildlife. Examples of products developed by the WDM Co-op and activities undertaken this year follow.

- Web site is fully on-line <<http://wildlifecontrol.info>> and contains links to sites with wildlife damage information throughout the Northeast.

- Manuscript, *The Human Dimensions of Wildlife Damage Management: A Practitioner's Guide*, is currently being printed and distribution is anticipated soon.
- Three different research projects were funded in 2002: nuisance black bear control, the role of Canada Geese as vectors of human infectious *E. coli*, and the potential use of an alfalfa variety that is resistant to wildlife damage.
- A finished research project on Canada Geese movements has given better insight as to the best control methods of this species throughout the Northeast.

PROSPER Project

PROSPER is an innovative model for bringing scientifically proven prevention programs to communities to strengthen youth, families and communities. The PROSPER project, a five-year collaborative research project, is being implemented through Penn State and Iowa State University. The project includes two successive groups of 6th grade students in 14 communities in Pennsylvania and 14 communities in Iowa. Seven communities in each state will be randomly assigned to receive the PROSPER programming beginning Spring 2003. During the first year of the project, team leaders in the intervention communities formed community teams. Extension staff have collaborated with schools and communities to develop the local teams to implement the research-based programs. Team members include school leaders, parents, community leaders, students, and health and social service providers.

Penn Jersey Extension Partnership (PJEP)

This partnership is a program planning and implementation collaboration between extension educators in Pennsylvania and New Jersey. The mission of PJEP is to provide Enhanced Extension Agricultural Programs that have demonstrable positive impact on agriculture in Pennsylvania and New Jersey. Activities during 2002 included: the Northeast Small Farm and Rural Living Exposition and Trade Show (approximately 1,700 attendees); a Web site, <www.cropmaster-icm.org> (includes crop scouting schedules, links to crop management information, and weekly crop reports and alerts); a pasture management newsletter (distributed to 860 producers); and several educational programs including Whole Farm Management, Pasture Management for the Horse Industry and Integrated Pest Management.

Plum Pox Virus (PPV)

During 2002, Penn State Cooperative Extension continued its leadership role in collaborating with state and federal departments of agriculture, growers' associations, legislators and community members to develop and implement educational and research programs to educate growers, government officials and the general public about PPV and effective eradication methods. Growers continue to be supportive of the eradication program and are cooperating with Pennsylvania Department of Agriculture surveys and eradication activities. Because of the extensive educational and monitoring efforts of Penn State Cooperative Extension, PPV has been effectively contained with little spread during the past two years, thus preventing significant financial losses to growers.

Access eGovernment

Access eGovernment teaches local officials and staff how to expand delivery of government information and services through the Internet. The eGovernment program was developed through a partnership between University of Minnesota Cooperative Extension, Minnesota Association of Counties and Penn State Cooperative Extension. During FY 2002, a program development team collaborated to develop the on-line eGovernment Guide <www.egov.psu.edu>. Staff from both universities collaborated to develop an Introduction to eGovernment module and Hands-on modules to teach local government officials the materials in the on-line Guide.

The "Introduction to eGovernment" was tested in presentations to the Pennsylvania County Commissioner's Association, Pennsylvania Governor's Office of Administration, and at meetings of municipal government officials. The "Hands-on eGovernment Tour" was piloted in Adams County, Pennsylvania. Approximately 200 local and state government staff and officials participated in these programs, resulting in requests to conduct seven "Hands-on eGovernment Tour" programs. More than 130 local and state government staff and officials, approximately 50 county staff and officials and 25 municipal officials participated in these programs. More than 50 extension and county staff participated in training programs to enable them to deliver these two programs. Extension educators in at least 15 counties have introduced the program to county and local government officials.

An evaluation of participants in the eGovernment Tour indicated positive results. In response to the question, "How useful did you find this session for your own efforts to initiate or restructure your local government's (or department's) eGovernment Web site," the average was 4.21 on a 5 point Lykert scale (0 = not useful, 5 = extremely useful).

Mid-Atlantic Fruit and Vegetable Conference

This annual meeting is the largest in the eastern United States to provide educational programs to fruit and vegetable growers from Pennsylvania, Maryland and New Jersey. The conference program addresses educational needs identified at cooperative meetings between extension, research and industry representatives. Over 2,000 growers, exhibitors and university personnel attended the conference in 2002. This year the National Peach Convention was incorporated in a special educational session, a joint effort between the participating state universities and the National Peach Council. As a result of this joint venture, participants from California, Georgia, South Carolina, Virginia, and other states attended.

An evaluation of 100 participants attending the Penn State Day Wine Grape Section (N=32) indicated the following:

- Average over all rating of the meeting, 8.87 (on scale of 1=awful, 10=awesome)
- 26 learned information they can use immediately to improve the health of vines and vineyards, and 27 found the handouts and published materials useful.

Soybean as Forage Project

Climate conditions in some regions of the state do not support an economic level of alfalfa production, and there is a need to evaluate a forage substitute that may be more cost effective. Penn State extension educators are collaborating with colleagues from New Hampshire, Vermont and New York to identify another forage source of protein, energy and fiber that is comparable to alfalfa. Research variety trials continue to evaluate yield, quality and digestibility of leaves, stems and pods at harvest. The purpose is to evaluate local varieties of soybeans produced, harvested and fed as forage to dairy or beef livestock. Yields, forage quality, milk production, butterfat and protein are being measured. Of the 50 farms involved, 20 monitored feeding and milk production characteristics and all reported increases in milk production and butterfat as a result of using soybeans as forage.

Southeast IPM Working Group

The purpose of the Southeast Pennsylvania and Delaware IPM Research and Extension Group is to provide education and information about integrated pest management to the ornamental horticulture industry. Educational activities for 2002 resulted in the following:

- Of 20 growers participating in the Far West Nursery Tour 2002,
 - 30% plan to change the way they merchandise their plants.
 - 40% plan to change plant production systems as a result of the tour.
- Of the 75 participants at the Landscape Design, Build, Maintenance and Garden Center Tour,
 - 27% plan to change design techniques.
 - 27% plan to increase the diversity of plant materials.
- Horticulture Short Course was offered to business and non-profit organizations.
 - 86% of participants reported improving their operational efficiency.
 - 60% of business participants were able to increase sales.
 - 50% of business participants were able to increase profits.
 - 40% of business participants were able to increase customer retention and increase customer numbers.
 - 50% of business participants were able to improve employee performance.
 - 67% of non-profit organization participants were able to improve pest management.
- 371 people attended the Eastern Regional Landscape Nursery Seminar.
 - Participant knowledge on pre- and post surveys increased from 35% having Good or Excellent Knowledge to 72% having Good or Excellent Knowledge of the topics covered.
- Volunteer cooperators demonstrated the value of the Landscape Nursery IPM Pest Monitoring Program by donating time to make weekly plant and insect observations.

Celebrating Midlife: The Best Is Yet To Be conference

Over 33 Cooperative Extension educators from Maryland, Ohio, Pennsylvania and West Virginia worked collaboratively to facilitate the first multi-state conference on midlife issues. The Celebrating Midlife: The Best Is Yet To Be conference was held April 7–9, 2002 in West Virginia. The objectives of the conference were to (1) address the changing needs during midlife; (2) identify ways to enhance one's quality of life; and (3) identify/recognize resources to strengthen one's ability to find success in midlife <www.celebratingmidlife.org>. The conference was targeted to both lay and professional audiences; 156 individuals from 11 states attended.

- 55.4% of respondents (N=92) gained knowledge in the area of coping skills.
- 48.9% gained knowledge on health issues and planned changes in their personal life.

The Solution Source

The Solution Source is an electronic information system being developed collaboratively by Penn State and Rutgers University. The system will have 700 to 900 mailboxes and 24 incoming phone lines, which will allow clientele to obtain educational information 24 hours a day, 7 days a week. Over 900 scripts have been written and are now being recorded. It is anticipated the system will be available to the public near June of 2003.

Change Agent States for Diversity

The Change Agent States for Diversity (CASD) project is a catalytic step in beginning the transformation of the land-grant system. A consortium of eight states, it is dedicated to supporting greater cultural diversity in the system by bringing technical skills and training to member states. Through a collaborative approach, the consortium is developing successful models and strategies that can be applied throughout the system.

The Pennsylvania catalyst team includes faculty, state program leadership, and county extension educators. During 2002, staff attended two face-to-face consortium meetings, participated in monthly telephone conference calls to address project implementation, held quarterly Pennsylvania catalyst team meetings and facilitated professional development. Tentative plans have been determined to host the next multi-state Amish and Anabaptist Conference. Under the leadership of a Penn State extension faculty member, an evaluation study for the 8-state consortium is being conducted. Additionally, it is evident in agent reports that they are addressing Youth Diversity and Tolerance Education issues through workshops, conferences and classroom programs.

Structured Out-of-School Experiences and Youth Development

The focus of this collaborative 5-year Penn State and Michigan State University project is to determine how structured out-of-school experiences contribute to positive youth development. The research will help parents, teachers, students and communities better understand how these experiences impact youth from different ethnic backgrounds, gender groups and age groups, as well as guide the design of programs that attract young

people and enhance their development. During FY2002, the second year of the project, a Penn State researcher collaborated in collection of qualitative data related to ethnic youths' participation, and examined youth interests in participating and barriers to participation in out-of-school time activities. Independent projects have been completed in each state consistent with the goals and objectives of the project: identifying key developmental processes of out-of-school experiences and the influence of individual, family and community factors on youth involvement in these experiences.

Ornamental Plant Production

This project allows scientists in horticulture and agricultural economics departments to cooperatively investigate marketing issues in the ornamental horticulture industry. New marketing models have been developed and manuscripts are being prepared to address issues of flower and other ornamental plant production operating efficiencies.

Information based on these publications will be used to assist growers investigate the feasibility and desirability of current and potential ornamental markets.

Reducing Environmental Impacts of Animal Waste

Research is being conducted to determine response of lactating dairy cows to dietary protein under various silage programs. Reducing the protein content of the diet by adjusting the corn to soybean mix can result in reductions in N excretions without reducing milk production thereby improving profitability. Communication of results to dairy producers has just been initiated.

Integrated Research and Extension Activities

Penn State's College of Agricultural Sciences, Penn State Cooperative Extension, and Penn State's Experiment Station have a long-standing commitment to integrating research and extension activities at Penn State. The College of Agricultural Sciences Strategic Plan Update for July 1, 1997 – June 30, 2002 states:

Research programs contribute to the education and outreach missions of the college by covering a broad range of scientific issues, from questions of fundamental science to the mission-oriented research dedicated to helping people, communities, and industries solve problems. Close integration with the college's cooperative extension program creates a research program that is both relevant and responsive to the needs of society... . These ongoing research efforts and related education programs are vital to assuring profitability of American food and fiber systems through internationally competitive agricultural production, a safe and secure food and fiber system, harmony between agriculture and the environment, quality of life of citizens, and well-prepared graduates.

At the dean's level, each associate dean has responsibility for cross-functional initiatives and activities. Each of the 12 academic department heads has an appointment split evenly between extension, research, and resident education. The dean, associate deans, academic department heads, director and associate director of cooperative extension, and director of the experiment station meet regularly to discuss current and future issues in integrated and extension programming.

The vast majority of faculty with research responsibilities in Penn State's College of Agricultural Sciences also have appointments in either extension or teaching, fostering mutually beneficial programmatic interactions. These faculty members conduct basic and applied research, along with their colleagues, which inform and shape extension programs. This research, in turn, is shaped by extension programs. Of the 354 faculty, staff and administrators at University Park with extension appointments, 237 are supported partially by Smith-Lever and research funds. Funds supporting the extension portion of joint positions (\$2,849,765) total 30 percent of Penn State Cooperative Extension's Smith-Lever appropriation, exceeding our estimated target (See Appendix B).

For example, results of a research project focused on identifying, developing and validating delivery systems and intervention strategies to reduce the presence of foodborne microorganisms in raw foods of animal origin were used to develop a series of state-wide industry workshops and food sanitation short courses to assist Pennsylvania businesses. The program has a direct impact on reducing industry meat recalls and incidence of foodborne illnesses (Referenced in the Pennsylvania Agricultural Experiment Station's Annual Report of Accomplishments and Results). Another integrated activity of importance to growers in the Northeast is the pest monitoring program for sweet corn <<http://pestwatch.cas.psu.edu/>>. By integrating Web and GIS technologies, insect monitoring data from 9 states is available during the growing season. Faculty provide educational training to field-based educators at county sites who in turn provide access to clients across Pennsylvania.

**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:

Pennsylvania State University

State:

Pennsylvania

Check one:

- Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

<u>Title of Planned Program/Activity</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
Lake Erie Regional Grape Research & Extension Center			26,975		
Natural Resource, Agriculture & Engineering Service			16,949		
NASULGC AESOP Extension Service			9,090		
NASULGC Extension Program Resources			4,692		
NASULGC ECOP Assessment			8,495		
NASULGC NELD Assessment			4,102		
Mid-Atlantic Apicultural Research & Extension Consortium			16,653		
Commercial Vegetable Guide			8,292		
Northeast Wildlife Damage Management Research & Outreach Coop.			27,135		
PROSPER Project			31,160		
Penn Jersey Extension Partnership			43,455		
Continued on next page					

Director

Date

**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
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 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)**

Institution:

Pennsylvania State University

State:

Pennsylvania

Check one:

- Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

(continued from previous page)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Plum Pox Virus			17,361		
Access eGovernment			12,469		
Mid-Atlantic Fruit and Vegetable Conference			12,562		
Soybean as Forage Project			15,126		
Southeast IPM Working Group			31,848		
Celebrating Midlife Conference			26,263		
The Solution Source			24,857		
Change Agents States for Diversity			21,498		
Structured Out-of-School Experiences			3,969		
Ornamental Plant Production			3,129		
Reducing Environmental Impacts of Animal Wastes			6,188		
Total			372,268		

Director

Date

**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
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 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)**

Institution: Pennsylvania State University

State: Pennsylvania

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

Actual Expenditures

<u>Title of Planned Program/Activity</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
Joint Extension/Research Personnel appointments			\$2,849,765		
Total			\$2,849,765		

Director _____
Date