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March 1, 2002

Mr. Barton Hewitt
CSREES/Partnerships
US Department of Agriculture
Stop 2214
Washington, DC 20250

Dear Mr. Hewitt:

We are enclosing the FY 2001 AREERA Report of Accomplishments and Results for the College of Food, Agricultural, and Environmental Sciences, including the Ohio Agricultural Research and Development Center and Ohio State University Extension.

If you have any questions, please contact for research: Steve Slack (330-263-3987), John Allred (614-292-3897) or for extension: Keith Smith (614-292-4880), Deborah Lewis (614-292-5089).

Sincerely,

Handwritten signature of Steven A. Slack in cursive.

Steven A. Slack
Director, OARDC

Handwritten signature of Keith L. Smith in cursive.

Director, OSU Extension

Keith L. Smith

Attached: FY 2001 AREERA Report of Accomplishments and Results

hard copies: Bob Moser
John Allred
Deborah Lewis
Tom Archer

Federal Report of Accomplishments and Results (FY 2001)

**The Ohio State University
College of Food, Agricultural, and Environmental Sciences
including
The Ohio Agricultural Research and Development Center
and
Ohio State University Extension**

Goal 1. An Agricultural System that is Highly Competitive in the Global Economy

Executive Summary

American farmers have the land, resources and, thanks to agricultural research, the knowledge to compete in the global market place. But to stay ahead of the competition, it is necessary to keep moving in a positive direction. Because of the development of modern techniques, such as biotechnology and precision farming, American agriculture has become both more efficient as well as more protective of the environment. Land that is marginal for the production of field crops has been converted to beef production, particularly in Southeastern Ohio which has been economically depressed for decades. The development of new products for niche markets and ways to produce value-added products from familiar ones such as high-oil corn or new varieties of tomatoes which have more of the physiologically active nutraceuticals will help keep us economically strong. The use of the tools of molecular biology is still barely developed and shows much promise for advances in years to come.

The discovery and development of these new products and methods of production require continued research, both basic and applied. We have learned that what is classified as basic research today will lead to applied research in a few years and then to routine farm production. Basic biochemical study of molecular biology from a few short decades ago laid the foundation for the most profound changes in plant and animal production and health that have occurred since the “green revolution.” Because of space limitations, only a few of the literally hundreds of studies currently underway are summarized below but these give concrete examples of the types of research projects that are making a significant difference now and will make a profound difference in Ohio in the future.

Ohio’s Commercial agriculture and horticulture industries depend upon Ohio State University Extension to provide timely and innovative, science-based, objective information that can be implemented within their management systems to remain competitive in our global economy. An innovative approach to problem solving, research and extension outreach is the use of empowered teams. A high priority for The Ohio State University Extension is the development and coordination of commodity/issue focused teams consisting of State/District Extension specialists, County Agriculture and Natural Resource agents and research faculty from multiple disciplines to deliver high impact, science-based information and educational programming that is timely and easily accessed by Ohio’s diverse commercial agriculture and horticulture industries.

Ohio State University Extension and the Ohio Agricultural Research and Development Center have currently engaged 21 interdisciplinary self-directed teams ranging from our Swine Educators’ Team to our Watershed Management Network. These faculty-led teams interact closely with respective state/national commodity organizations, state/federal agencies and environmental organizations to assist in developing our Extension led statewide programming and current communications structure. Team electronic communications are the keys to access strategic information for global competitiveness. Many of our teams continue to develop weekly/monthly electronic newsletters and research updates

that will be evaluated for their economic impact. Our team members develop newsletters following weekly tele-conferences such as: *Amazin' Graze*, *Buckeye Yard and Garden Line (BYGL)*, *Crop Observation and Recommendation Network (CORN)*, *Grain Marketing Research and Innovative Strategies (GRAINS)*, *Pesticide Update (Pep-Talk)*, *Pork Pointers*, *Veg-Net and Vineyard Vantage*, etc. Many newsletters are listed on our OSU Extension *Ohioline* web site, as well as many of our team's individual web sites for easier access by our stakeholders.

Smith-Lever Fund expenditure for Goal 1: \$3,039,469 FTE's: 65

Goal 1 Key Themes

1. Key Theme: Agricultural Communications/Information Technologies

(Reference OSU Plan of Work Extension Program 1A: Summary of Extension Programs)

- a. **Description of Activity** - Team electronic newsletters and fact sheets/bulletins through appropriate e-mail list serves and Web sites have been identified by Ohio clientele as preferred option to more traditional extension educational meetings. Many of OSU Extension's commodity-focused teams provided weekly/monthly electronic newsletters and research updates which have been evaluated for their economic impact. OSU Extension team members developed educational newsletter summaries following weekly tele-conferences titled: *Amazin' Graze*, *Buckeye Yard and Garden Line (BYGL)*, *Crop Observation and Recommendation Network (CORN)*, *Grain Marketing Research and Innovative Strategies (GRAINS)*, *Pesticide Update (PEP TALK)*, *Pork Pointers*, *Vet-Net*, *Vineyard Vantage* and the Watershed Network's *Buckeye Basins*. We have listed all newsletters on our OSU Extension *Ohioline* Web site, as well as many of our team's individual Web sites for easier access by our stakeholders/producer clientele.
- b. **Impact** - Newsletter surveys have indicated that agronomic crop producers saved over \$4.9 million dollars in chemicals used from implementing management practices presented in the *CORN* newsletter and over \$2.4 million from utilizing marketing tips found in our *GRAINS* newsletter. The OSU Extension beef team Web site, released in May 1997, had more than 7,400 hits during June, 2001. Recently, the Web site was named the number 1 Web site for livestock information by a public opinion survey conducted in 2000. The *Buckeye Yard and Garden Line (BYGL)*, started in 1990, continues to be a key electronic educational tool developed by the OSU Extension Nursery Landscape and Turf Team for county Extension offices, the commercial green industry, and the gardening public. In the 2001 *BYGL* Evaluation Survey, over 200 respondents indicated that *BYGL* saved their businesses over \$240,000. Over 55% of the respondents indicated that the *BYGL* changed their pest management practices. Through newsletters, media and other sources, respondents indicated that *BYGL* reached over 700,000 people in 2001. *Buckeye Yard and Garden onLine*, the web

version of *BYGL* averaged over 5,500 hits per month during the growing season. This version of *BYGL* is linked to thousands of plant and plant pest images and over 23,000 fact sheets from throughout the U.S. via links to the OSU Horticulture and Crop Science in *Virtual Perspective* Web site. In addition, *BYGL* is used throughout Ohio at universities as part of the curriculum for undergraduate horticultural courses.

- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

2. **Key Theme: Adding Value to New and Old Agricultural Products**

(Reference OSU Plan of Work Research Program 1B: Value Added Products)

- a. **Description of Activity** - The success of Ohio's agricultural production system, as a competitor in the global economy, is largely dependent on its ability to produce and deliver low cost - high quality food and feed ingredients and food products that are needed, wanted, and can be paid for by domestic and foreign users, processors, and consumers. Identifying the potential for new products for these markets offer additional opportunities for producers. New products are constantly being investigated. For example, work is being done to develop canola as a potential crop for Ohio. Additionally, research is being conducted on viticulture to help Ohio's wine industry.
- b. **Impact** - Traditionally, Ohio agricultural producers have relied upon corn and soybeans as crops of choice. In some areas of the state, however, alternate crops, such as canola, or grapes, may be a better economic choice. Researchers should continue to explore the possibilities that individual producers may not be in position to do.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

3. **Key Theme: Innovative Farming Techniques**

(Reference OSU Plan of Work Research Program 1C: Innovative Farming Techniques)

- a. **Description of Activity** - Agriculture changed dramatically during the twentieth century and is in the process of changing again. The application of research discoveries in nutrition, genetics, physiology, management, and disease and pest control of both plants and animals has enabled the U.S. producer to produce an abundance of food economically. The development of new technologies has permitted crop and livestock producers to make steady increases in productivity. Adoption of mechanization and automation has resulted in increased unit size. Often the new technologies have permitted producers to utilize practices and procedures that previously were not feasible. One of these is precision farming using a GPS/GIS. It has been widely accepted but the technology has even greater potential which has spawned several new research projects, all of which are designed to give the operator additional information

that can be used for decision making. For example, one of these projects uses GPS/GIS technology coupled with a laser scanner to determine biomass. The scanner is mounted on a tractor and as the vehicle moves, the scanner scans perpendicular to the direction of movement. The data are analyzed by a computer to create a spacial graph of biomass. Similarly, data from Landsat satellite were used independently to estimate biomass and compared with actual data obtained on the ground. A second research area that has become increasingly active is the development of hydroponic tomato production in greenhouses. Work has included demonstration projects around Ohio and development of a web site into which growers can enter their own parameters for the construction of spreadsheets for business planning. Finally, there has been increasing interest in the development of an aquiculture industry in the state of Ohio, particularly in the Southeastern part of the state, as a means of economic development. Consequently, research projects on aquaculture have emphasized nutritional requirements of optimum production.

- b. Impact** - The technology of precision farming has been increasingly adopted by Ohio corn and soybean farmers. The research reported here is designed to exploit the use of GPS/GIS to allow producers to make better management decisions, including the use of both pesticides and fertilizers. By having better data for the precise application of both of these, the cost of production will be reduced and the environment will be better protected by reduction of run-off of both fertilizer and pesticides. The exact dollar impact will, of course, not be known for years. Secondly, the development of hydroponic production of crops such as tomatoes has the advantage that it allows small farmers an alternative to the usual corn -soybean crops so popular in Ohio but the economic impact depends upon the specific conditions encountered by producers. Aquaculture is being developed as a way to improve the economy in the Southeastern part of Ohio.
- c. Source of Federal Funds** - Hatch
- d. Scope of Impact** - State Specific

4. **Key Theme: Animal Production Efficiency**

(Reference OSU Plan of Work Research Program 1D: Increased Animal Production Efficiency)

- a. Description of Activity** - Animal agriculture is of major economic importance in Ohio with virtually all major agricultural animal species contributing to the state's economy. Major thrusts of animal research are increasing the efficiency of producing animal protein, animal well-being, and product quality. Understanding the basic properties of animal requires the application of a broad group of biochemical, molecular biological, physiological, genetic and nutritional and management techniques. Factors affecting animal product quality, disease status, and efficiency of production are genetically

controlled. Physiology also impacts animal growth and reproduction. As plants and animals are modified, the factors regulating nutrient use and requirements, as well as regulatory role of cell function must be studied. It is becoming increasingly important for the disciplines to work collaboratively to address issues and enhance progress. Work in improvement of animal production efficiency can be conveniently divided into categories: genetic/molecular biology, nutrition, reproductive physiology and management practices. One of the more exciting genetic/molecular biology projects being conducted in Ohio involves the use of biotechnology to both detect and develop desirable characteristics in the growing animal. To this end, marker genes have been found in calves which are highly correlated with marbling and tenderness in the harvested meat product. Testing of young calves will provide data for management decisions, not only on the type of diet to feed but on breeding choices as well. Biotechnology is also used to measure genetic capacity to produce growth hormone and related insulin-like growth factors. Since these correlate with growth rate, probes for the gene can be used to select for breeder cattle who's offspring would have the most rapid growth rates. As genetics of cattle, both beef and dairy, are constantly being improved so must the choice of feeds to maximize the genetic potential. These cattle nutrition projects ranged from optimizing digestibility to modification of milk by dietary manipulation of dairy cows. Similarly, genetic/molecular biology is being used for improvement of swine production. For example, research has shown a connection between estrogen receptor and growth, carcass and developmental traits in hogs. This estrogen receptor can be used as a marker for breeder selection. As with cattle, genetic improvements require constant probing of nutritional requirements to keep pace. Thus, nutritional requirements of these high-producing swine are being investigated. Finally, molecular biology technology is being used to improve both the reproductive ability as well as production of both chickens and turkeys, and as with other species, the genetic improvements has necessitated nutritional advances.

- b. **Impact** - Finding genetic markers for growth and carcass characteristics of both beef cattle and swine have not had an impact on animal production as yet but have great potential to change the way these species are selected for breeding as well as serve as a basis for management decisions. For example, a calf without the marker gene for marbling and tenderness would eventually be harvested for ground beef while a calf with the marker gene would be grain fed prior to slaughter and be used for the production of expensive cuts of beef. The use of cattle with the marker "tenderness" gene for breeding could eventually change the carcass qualities of Ohio beef but the true impact will not be known for sometime. Similarly, the use of molecular probes for desirable qualities of swine and poultry could markedly improve the efficiency of production and quality of products.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

5. **Key Theme: Plant Production Efficiency**

(Reference OSU Plan of Work Research Program 1E: Increased Plant Production Efficiency)

- a. **Description of Activity** - Economically the plant industry is the largest segment of production agriculture in Ohio, providing approximately 2/3 of all cash farm receipts. The major farm products are soybeans and corn but there is a remarkable diversity of Ohio's plant agriculture, ranging from fruits and vegetables to speciality crops. Since corn and soybeans are the most important crops in Ohio economically, it is not surprising that much of the research revolved around these two crops. But plant production starts with soils. There were a number of projects which dealt with the classification and the mineral content of soils around Ohio. In addition, studies on soil compaction were conducted which revealed that the effect of compaction on yield varied by year. A second important research area was the biochemistry and molecular biology of seeds to understand optimization of germination as well as selection of sources of desirable genes that can improve plant health and product quality. Other projects seek to understand the relationships between legumes and symbiotic nitrogen fixation are related to soil minerals.
- b. **Impact** - The ultimate goal of the research on plant production is to obtain larger yields more efficiently with the least impact on the environment. Developments in new technologies such as GPS/GIS have provided an impetus to reevaluate Ohio soils for type and nutrient content. Similarly, developments in molecular biology have made it possible to more fully understand the biochemistry of seeds as well as to select for the genes coding for desirable characteristics. These developments, like other basic research, can be expected to have a major impact in the future but the magnitude of that impact is not yet clear.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

6. **Key Theme: Animal Health**

(Reference OSU Plan of Work Research Program 1F: Enhancement of Animal Health)

- a. **Description of Activity** - Animal health issues are of major concern to the food animal industries because approximately 10% of the animals raised are lost to mortality while there are even greater economic losses due to morbidity and decreases in production efficiency. Some of the major infectious disease problems have been brought under control. Nonetheless, a variety of economically significant diseases continue to plague the food animal industries. Combinations of mild pathogens that could cause significant health problems are common. In addition, new disease entities continue to emerge and diseases that were controlled re-emerge. Our research continues to focus on the prevention of rotavirus infection which is an important cause of diarrhea in both dairy and beef calves as well as in human infants. Tools of molecular biology were used to

construct a virus-like particle which, when injected into cattle, elicits antibodies against the rotavirus. Feeding colostrum from injected cows to calves was shown to provide passive immunity. Work on prevention of bovine mastitis has also continued in which cows were immunized against a bacterial ferric citrate receptor which may aid in the effectiveness of a vaccine against coliform mastitis.

- b. Impact** - Use of molecular biology techniques provide both a means of definitive diagnosis as well as a basis for developing new methods of control. The use of biotechnology to prepare a rotavirus like particle which can elicit antibodies but cannot infect appears to be a major breakthrough for the prevention of a major cause of diarrhea in animals as well as humans. Vaccines which prevent coliform mastitis would result in a savings to the dairy industry of over \$97 million annually.
- c. Source of Federal Funds** - Hatch
- d. Scope of Impact** - State Specific

7. **Key Theme: Plant Health**

(Reference OSU Plan of Work Research Program 1G: Enhancement of Plant Health)

- a. Description of Activity** - Plant diseases and insect pests represent a significant threat to the world's food supply. Within the U.S. and Ohio, plant diseases and insects, whether natural or deliberately introduced, represent potential threats to our economic stability and the quality of life of the citizenry. Although some diseases and pests are readily controlled by established methods, others are not and new diseases and pests emerge often. Changes in agricultural practices also have an important effect on the economic significance of certain plant diseases and pests. Methods used to control diseases and pests affect the costs of production and sometimes impact the environment. Because of the economic importance of soybeans in Ohio, one of the active areas of investigation is to find ways to prevent or control soybean diseases, including Phytophthora diseases. One approach is to find genes in other plants which have immunity to Phytophthora disease (nonhost resistance) and incorporate those genes into soybeans. Another approach is to find soybean cultivars with partial resistance but which do not compromise yield. In addition, tools of molecular biology are being used to discover genes that confer general resistance which could lead to broad-spectrum disease control in soybeans. Similarly, research is being done to control diseases of another economically important crop in Ohio, corn. This includes finding cultivars resistant to gray leaf spot and to Maize streak virus. In addition, research projects on control of potato leafhopper infestations of alfalfa and the use of fungicides to control fungal diseases of wheat, barley and fruit crops.
- b. Impact** - Control of pests and diseases which reduce yields of soybean and corn has a major economic impact in Ohio since these two crops account for much of the plant production. The use of the tools of molecular biology to produce plants with genetic

resistance to major diseases shows promise of greater economic productivity as well as decreasing harm to the environment that chemical control might cause. However, the work described here for the most part is basic research which will pay off in future years.

- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

8. **Key Theme: Agricultural Competitiveness**

(Reference OSU Plan of Work Research Program 1H: Economic Competitiveness)

- a. **Description of Activity** - United States agriculture has a huge productive capacity, given the land area, the natural resources and the knowledge gained from years of agricultural research. Even so, remaining competitive in the global market place takes careful planning and managing. Clearly, production for foreign markets is key - the U.S. has about 4% of the world's population and a disproportionately large food supply. Production systems in other regions of the world will also attempt to supply international markets. Competitiveness is influenced by regulations, trade barriers, local, regional, or national policies, and international agreements. United States agriculture must continue to adopt new technologies, explore new structures, and respond to policy changes if it is to remain competitive internationally. Agricultural researchers in Ohio continue to examine barriers to international trade and innovative ways to open new markets.
- b. **Impact** - While the American producer finds ways to improve production with greater efficiency, careful attention to farm and export policies will continue to impact agricultural income.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

9. **Key Theme: Ornamental/Green Industry**

(Reference OSU Plan of Work Research Program 5C: Green Industry)

- a. **Description of Activity** - The green industry continues to expand and has now become a major player in Ohio's agriculture economy. It ranks third behind soybeans, and corn in income from plants. Bedding plants and trees play a vital role in enhancing the quality of life through our beautiful landscaping and conservation efforts to improve the environment. The turf-grass industry continues this interaction of environmental and quality of life enhancement as it constantly improves and develops healthier lawns, golf courses, and other sport fields. Research has continued on the development of land races adaptable to Ohio growing conditions. The production of turf grass for lawns, golf courses and athletic fields continue to be a major focus of research. And the development of more automated and modern greenhouses which conserve energy and water remains a priority.

- b. **Impact** - Woody perennials as well as annuals for landscaping and lawn grasses continue to be economically important in Ohio so that development of plants amenable to Ohio's climate is obviously important. Much of the early research on turf grass for athletic fields (prescription athletic turf) was conducted in Ohio and further developments in this area, not only for college and professional venues, but also for high schools offers substantial opportunity for both income and the prevention of injuries attributable to inappropriate playing conditions.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

Goal 2. A Safe and Secure Food and Fiber System

Executive Summary

Food safety and security have taken on a new meaning and greater urgency since the terrorists attacks in September, 2001. While food safety with respect to chemical and biological contamination has always been of concern, the possibility for the deliberate introduction of harmful agents has heightened the need for research on the detection, removal of contaminants and disposal of contaminated food. Further, the development of new strains of organisms as well as the potential spread of old ones requires the utmost care and vigilance because of world-wide food and animal feed distribution. Fortunately, along with the increased threat of food borne pathogens, there has been improved methods of detection, based upon biotechnology. Further, newer methods of food preservation are being developed.

At the same time that food safety is an issue, consumers demand and will pay for greater convenience. The challenge is to produce food which is nutritious and tasty but which can be processed and distributed without contamination, either accidentally or deliberately. Consumers' lifestyles, hence their eating habits, are constantly changing. These changes bring about increased demand for high quality, value added, and convenient foods. This requires that production of food ingredients, which are as nutritious as non-processed counterparts and are not subject to contamination with harmful microorganisms during production and shipment.

Although research that leads to a safer food supply is actively in place, scientists acknowledge that the safest foods are still a hazard if mishandled during food preparation just before consumption either in a food establishment or at home. Consumer and food worker behavior is an important issue to address to complete the assurance of the safe food cycle. Education efforts, either in higher education or through outreach, have focused on this critical need so that the "human factor" can be reduced or eliminated as a cause of food-borne illness.

Smith-Lever Fund expenditures for Goal 2: \$701, 416 FTE's: 15

Goal 2 Key Themes

1. Key Theme: Food Safety

(Reference OSU Plan of Work Extension Program 2Ae: Pre-Harvest Food Safety)

- a. **Description of Activity** - Spurred by recent incidences of drug residues in junior fair animal carcasses and at the urging of meat processors in the state, the Ohio Department of Agriculture now mandates all junior fair exhibitors must attend a quality assurance training session before they sell certain species of livestock through a junior fair sale. To answer this mandate county Extension agents, with the cooperation of state Extension specialists and vocational agricultural teachers work together to provide educational quality assurance programs which meet the mandate and the needs of the consumer, and youth exhibitor.
- b. **Impact** - More than 17,500 youth and adult junior fair food animal producers received quality assurance training to assist them in meeting compliance standards being implemented by respective processing industries. Several counties reported having no livestock quality assurance issues associated with their junior fair livestock sales in 2001. A Noble county meat processor stated "I have seen a positive difference in the carcasses of the junior fair livestock I processed this year. The bruising of the meat is minimal and the injection sites are much better and in the correct place". Ashland county reported an average 30% increase in scores between pre- and post-tests for their 453 participants.
- c. **Source of Federal Funds** – Smith-Lever 3b&c
- d. **Scope of Impact** – State Specific

2. Key Theme: Food Safety

(Reference OSU Plan of Work Research Program 2Ar: Pre-Harvest Food Safety)

- a. **Description of Activity** - Safety of foods is an issue of national and international concern, not only from natural chemical and biological contamination but from deliberate adulteration as well. While the actual threat of widespread contamination of food by terrorists is probably quite small, the public perception of the danger is much larger. Thus, research on methods for insuring food safety and on educational programs for safe food handling are major areas of research in Ohio. Novel non-thermal methods to process food to reduce microbiological contamination including pulsed high voltage electric fields, moderate electric fields, and high pressure treatment are being investigated. Stress response of bacteria and the development of molecular biology tools to detect contamination are also being investigated.
- b. **Impact** - At this time in our history, it is important that our food supply be safe guarded against contamination but it is even more important for the public to understand that our

food supply is safe. Thus major emphasis needs to be applied to consumer education. Further, the only method currently used for non - thermal food pasteurization is irradiation but this technology elicits fear in many consumers. One alternative to this technology being developed is high voltage, pulsed electric field technology. It has been found to be very effective to pasteurize orange juice and yet retain the original fresh flavor and properties. This work alone could impact the \$2.5 billion nationwide orange juice industry.

- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

3. **Key Theme: Other - Functionality of Food**

(Reference OSU Plan of Work Research Program 2C: Functionality of Foods)

- a. **Description of Activity** - The modern American demands high quality, value added, convenient foods. New frozen and convenience products must be developed to meet these demands. One of the most rapidly growing trends in the convenience food market is fresh, fully prepared items for take home consumption. Consumer desires for unprocessed and minimally processed foods are based on the flavor and taste acceptability. Thus, processed foods must at the same time be pasteurized to reduce illness but retain the flavor of fresh food. For example, once beef is cooked, reheating causes an off (warmed-over) flavor which has now been shown to be avoided by a combination of antioxidants and vacuum treatment. Other novel food processing methods include electrostatic technology to add coatings to food such as salt to potato chips. In addition to novel methods of food preservation and processing, research is underway to increase the value of what is often waste products. One example of this type of research is focused on the use of milk whey protein for production of adult nutritional products.
- b. **Impact** - Of the \$73 billion food and agriculture industry in Ohio, food distribution and processing amounts to about 70% of the total. Developments in food processing, closely coordinated with the food industry in the state and the Food Industry Center at The Ohio State University is crucial to the maintenance and expansion of the food industry in the state.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

Goal 3. A Healthy, Well-nourished Population

Executive Summary

The U.S., like other highly developed countries in the world, have an abundant, inexpensive food supply

available to them. Food provides both pleasure and the chemicals necessary for our health and survival. A well nourished population is one which has met nutrient and non - nutrient needs from food without consuming calories in excess of those expended . It is important to recognize that nutrient needs vary over the life cycle and research must be conducted to determine how age and gender influence nutrient needs. It is also important to note that food contains physiologically important chemicals that are not nutrients. These physiologically active chemicals are now called “neutraceuticals” to denote that they can act pharmaceutically, and, just like any other drug, they can have unwanted side effects. That is why it is so important that foods suspected of having beneficial properties be studied in great detail which requires a team approach. The Ohio State University is one of the few institutions in the world which has both a highly productive agricultural faculty as well as world -class medical facilities dealing with chronic diseases including heart disease and cancer. From these diverse groups, a team has been constructed which includes plant biologists, food scientists, biochemists, and physicians. This team is studying such agricultural products as tomatoes and raspberries for their content of chemicals that are effective as antioxidants and as anti -carcinogens.

A healthy, well-nourished population is dependent on the ability of people to obtain foods that will improve the over-all quality of their diets, and the quality of the food they eat. A healthy population also engages in other positive health practices, including physical activity, individual health monitoring, and safety practices that will reduce the risk of accidents and disease. Extension personnel of the Ohio State University have been very active at educating the people of Ohio regarding the importance of good health and nutrition practices as they have met with individuals and groups, in formal and informal teaching sessions, in workshops, committee meetings, health fairs, and walk-by exhibits. The result has been a change in 1) the way some individuals purchase, prepare and store food; 2) the level of interest in monitoring and improving health through screenings and exams; and 3) the ability of individuals to improve their personal practices to decrease health risk.

Stakeholder input through the Food and Nutrition Extension Advisory Committee indicates a desire of specific population groups to acquire the information and knowledge necessary to improve nutritional health. Teens want the latest way to make food and its components their edge in sports competition. Teachers want resources to help them teach the in-school pregnant teen about the importance of good eating for themselves and later for their baby and toddler. School food service personnel need to know how to incorporate the Dietary Guidelines recommendations into school meals. The elderly want ways to keep their blood pressure under control and their blood cholesterol levels manageable. They are split between those elderly who are so busy that they have no time to cook, and need to learn the tricks of eating out healthfully, and those who have no desire to prepare food because of declining health. A study of changes made by EFNEP clientele in Virginia suggests that by delaying, shortening or eliminating specific risk factors for disease through diet and health changes clientele and/or taxpayers can realize a \$2 to \$17 savings in health costs for each dollar spent teaching them..

Ohio’s low income population wants ways to make their food money go further, whether it is healthful or not, and the professionals and para-professionals servicing this population want to give money

stretching ideas that are nutritious. The Food and Nutrition Advisory committee has also requested more help in advising target audiences about dietary supplements, changed recommended dietary allowances of specific nutrients (folate, calcium, etc) and how to incorporate them into a healthy diet, and the role of non-nutrients (fiber, antioxidants in food).

Smith-Lever fund expenditures for Goal 3: \$1,402,832 FTE's: 30

Goal 3 Key Themes

1. Key Theme: Human Nutrition

(Reference OSU Plan of Work Extension Program 3Ae: Human Nutrition/Health)

- a. **Description of Activity** - State Extension Specialists have reviewed and overseen the development of lessons and handouts to be used with specialized audiences (low income parents of young children, and people receiving or eligible to receive food stamps), and have provided nutrition in-service training to the 74 program assistants of the Food Stamp Nutrition Education Program and 65 nutrition educators with the Expanded Food and Nutrition Education Program. One or both of these programs are in over 70 of Ohio's 88 counties. Through the efforts of the Extension Specialists the para-professionals in these two programs had materials with which to collaborate with local institutions and organizations to reach the targeted clientele. Collaborating organizations included: penal institutions, senior citizens sites, community centers, youth organizations, mental health institutions, local school districts, health clinics, state department of health, local and state departments of human services, and service clubs.
- b. **Impact** - Because of the nutrition updates provided by the State Specialists and the oversight they provided in the development of new nutrition education materials the nutrition educators with the Expanded Food and Nutrition Education Program were able to teach 7,446 parents of young children between October 1, 2000 and September 30, 2001. As a result of this teaching, 89 percent of the individuals taught made positive changes in their food intake, as measured with a pre/post-instruction recollection of food eaten in the previous 24 hours. Over the same time period the program assistants with the Food Stamp Nutrition Education Program reached 81,970 people using or eligible for food stamps. As reported under a separate nutrition theme, 70 percent of these individuals reported learning new information; 50 percent planned to implement changes, and 30 percent had already done so.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

1. Key Theme: Human Nutrition

(Reference OSU Plan of Work Extension Program 3Ae: Human Nutrition/Health)

- a. **Description of Activity** - There are a variety of nutrition education interventions available to educate older adults as well as encourage them to make positive dietary and lifestyle changes. Since 1996, one State Nutrition Specialist has collaborated with Specialists in two other states, an individual at a non-land-grant university, and private industry to develop and test the effectiveness of nutrition and health education materials (titled Staying Well) specifically geared to senior citizens. The Stages of Change evaluation model was used. Older adults are the fastest growing segment of the population in the US. It is critical to encourage nutrition education as well as health promotion in order to help them reach and maintain optimal health status.
- b. **Impact** - Stage of change for fruit, vegetable, and dairy food intake of the entire group was in the higher stage of Maintenance. Being male or female was not a predictor of an individual's stage of change. Nor did educational background have an influence. Marital status may affect the level of readiness to change behavior, with those who are widowed tending to be already practicing the desired behavior. In general, older adults tended to score into the higher stages of change and showed a greater interest in changing health behavior than those who were younger in age.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

3. **Key Theme: Human Health**

(Reference OSU Plan of Work Research Program 3Ae: Human Nutrition/Health)

- a. **Description of Activity** - More than one million people will be diagnosed with skin cancer each year and 8,500 people will die each year from skin cancer. Most of these skin cancers are treatable if diagnosed early. Developing safe sun practices early in life and, especially among high-risk populations, can reduce the incidence of skin cancer. Adhering to better dietary practices, following risk reduction guidelines for other cancers, osteoporosis, heart disease, etc also can reduce other diseases. State Specialists developed lessons and handouts for positive health promotion programs, or helped the local extension agent plan and implement these programs and activities.
- b. **Impact** - In Allen County, as a result of screening using the Derma Scan, three people made appointments to see a dermatologist when they viewed their sun damaged skin. More than half of all participants who viewed their sun damaged skin requested other members of their family to be assessed and made plans to use sunscreen when going outside. Others who participated in the screening were alarmed to see the damage that had already occurred and vowed to never lie out in the sun again. Although damage from the sun is permanent, most participants were determined not to let the damage get worse.
Sun Safety:
-- Over 50 counties have offered sun safety and skin cancer programming in Ohio.

- At least 4 counties have purchased their own Dermascan equipment (an instrument that helps an individual assess the amount of skin damage) to extend programming potential.
- Most counties have offered educational events that have reached across program area lines and have also involved collaboration with other health related or work related entities, i.e. health departments, hospitals, farm groups, public schools.
- A mailed follow up survey indicated that 50 percent of respondents report behavior changes including wearing a sun safe hat, wearing sun glasses, using sunscreen, awareness of time working in sun, and protective clothing worn while in sun.
- Inquiries from a major international airport, an international horticultural grower and exporter, and a large business in Ohio have come in with requests for recommendations on hats to purchase for outdoor workers of these organizations.
- A national manufacturer of hat linings contacted the Ohio Extension Specialist for information and assistance on developing prototype sun safe hats to show to hat manufacturers.
- Three popular publications, two state and one national, contacted Ohio Extension for stories on Operation Hatchcheck. One catalog company features a reference to OSU Extension on sun safe hat information.
- a. **Source of Federal Funds** - Smith-Lever 3b&c
- a. **Scope of impact** - State Specific

4. **Key Theme: Human Health**

(Reference OSU Plan of Work Research Program 3Ar: Human Nutrition/Health)

- a. **Description of Activity** - A healthy well-nourished population can only occur if food is available in adequate amounts and is affordable. Given these, the next requirement is for consumer education because when the availability of food is no longer limiting, people need to know how to make appropriate choices. It is clear that in one regard, the people's choice is inappropriate - leading to an ever increasing percentage of the population that are overweight. In spite of that, Americans are healthier than at any previous time in our history. But chronic diseases are still the major cause of death and occupy a focus in nutritional research. Projects in Ohio include optimum intake of minerals, such as selenium and zinc, and of antioxidants for the prevention of chronic diseases. In addition the role, if any, of trans-fatty acids in atherosclerosis is being investigated.
- b. **Impact** - In general, research and consumer education programs in nutrition do not have an Ohio focus but rather are a part of the giant fabric of research on the topic conducted world wide. Thus, the impact must be considered in the context of the

whole. On the other hand, research on trans-fatty acids is directly relevant to the food and dairy industry in Ohio since potential effects of this “artificial” fat hardener could affect sale of Ohio dairy products.

- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

3. **Key Theme: Nutraceuticals**

(Reference OSU Plan of Work Research Program 3Br: Nutraceuticals)

- a. **Description of Activity** - Foods are more than a vehicle to deliver required nutrients. In addition to adding to our quality of life by giving pleasure from consumption, foods contain chemicals besides nutrients which can have physiological effects upon the consumer. These non-nutritive, physiologically significant chemicals have been called “nutraceuticals.” One of the areas of focus of Ohio research, in cooperation with the College of Medicine and Public Health, is on the role of carotenoids acting as antioxidants in the prevention of cancer, heart disease and macular degeneration in the lens of the eye. Another focus has been on an animal derived nutraceutical, conjugated linoleic acid or CLA. CLA, which has been reported to have anti carcinogenic properties, occurs naturally in cow’s milk and its concentration can be increased by dietary manipulation.
- b. **Impact** - As with nutrition research in general, the study of nutraceuticals is international in scope and is not unique to Ohio. Thus, the study of the role of carotenoids on the prevention of chronic diseases including macular degeneration must be considered a part of the whole. On the other hand, conjugated linoleic acid or CLA in milk fat could be advantageous to Ohio’s dairy industry if it can be shown that intake of CLA is beneficial since Ohio research has now described methods to increase its content in milk.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

Goal 4. Greater Harmony Between Agriculture and the Environment

Executive Summary

Ohio has an economic advantage in both agricultural production and in food processing because of proximity markets. While this geographical advantage has made agriculture and the food industry number one in terms of income the Ohio, it has provided a challenge to conduct farm operations in the midst of a high population density. Fortunately, the agricultural community has always been an excellent steward of the environment as the ultimate source of their income. But because of the need to be good

neighbors, the agricultural community has been very cognizant of the need to take extra care. Research has given the necessary tools to producers to minimize harm to the environment and the quality of life of neighbors. Work has progressed on methods to dispose of animal wastes by composting and judicious distribution on farm land. Precision farming has been used to minimize fertilizer and pesticide application for economical as well as environmental reasons. Scientists are finding more effective ways for pest control by developing newer integrated pest management systems. All of these methods help to ensure high water quality.

In addition to the usual methodology to minimize environmental damage, scientists at The Ohio State University have created a team, called ecosystems management, which seeks to use ecologically sound principles to not only increase profitability but also be environmental friendly. This systems management approach has been extended to the classroom in the education of undergraduate as well as graduate students.

As livestock production continues to expand in Ohio and with the odors, dust, insect pests, and water pollution associated with the increased numbers, there is a need to provide educational programs to producers on composting livestock mortality and composting animal waste. Due to the diverse distribution of the state's population, livestock producers, commodity groups and OSU Extension are taking a pro-active approach to improve neighbor relations by providing programs that ameliorate issues associated with agricultural waste.

Ohio contains nearly 7.9 million acres of forests and woodlands. OSU Extension district specialists, county agents and Soil and Water Conservation District personnel provide newsletters and best management practice workshops across the State, addressing a wide variety of topics, including but not limited to House Bill 88 - Agriculture Pollution Abatement Law and issues related to silvicultural non-point source pollution.

OSU Extension, working in partnership with the Ohio Livestock Coalition and key state and federal agencies, has developed and implemented the Ohio Livestock Environmental Assurance Program (LEAP). LEAP helps livestock producers to profitably manage environmental challenges that are critically important to the success of their business.

Smith-Lever Fund expenditures for Goal 4: \$467,611 FTE's: 10

Goal 4 Key Themes

1. Key Theme: Agricultural Waste Management

(Reference OSU Plan of Work Extension Program 4Ae: Agricultural Wastes And By-Products)

c. **Description of Activity** - Livestock production continues to expand in Ohio. But due

to the distribution of the state's population throughout Ohio and the extensive network of streams and rivers, the potential for environmental and rural -urban conflicts is significant. Odors, dust, insect pests, and water pollution are all potential environmental impacts from livestock production operations. Livestock producers and their commodity groups are deeply interested in developing and implementing practices on a voluntary, farm-by-farm basis in order to be good neighbors and to attempt to head off more regulations.

The purpose of composting is to biologically treat organic materials to protect the environment, stabilize nutrients, and destroy pathogens in an economical process. This practice applies where: (1) Ground and surface water resources are protected; (2) The risk of spread of disease is reduced; (3) Nuisances such as flies, vermin, and scavenging animals are prevented; (4) Air quality is maintained, and (5) A compost utilization plan has been developed. Ohio State University Extension surveyed composting managers early in 2001 to evaluate the effectiveness of mortality composting, and the environmental soundness of the composting practice.

b. **Impact** - Follow-up survey of 1,720 individuals certified to compost animal mortalities was conducted in June 2001. 243 (14.3%) responded to a one-time contact, mail questionnaire (no follow-up of non-respondents was conducted).

- On average, these producers had about \$1,300 (out-of-pocket) invested in the composting facility, received \$1,500 in cost-share monies from state and federal sources, and will spend about \$500 per year to operate the composting facility. This same group reported spending about \$1,100 per year, on average, for mortality disposal prior to composting.
- Prior to composting about 57% of these mortalities were previously disposed of by burial, 19% handled by a commercial rendering company, 13% by incineration, and 10% were disposed of in a wooded lot and left for scavengers or sent to a landfill.
- 43% of the mortality composting systems in use are static piles onto of the ground, 25% are bin composting systems on concrete pad, 13% are static piles on a concrete pad, 10% are modified bin systems, and 5% are mini-composting units.
- 90% of these program participants were please or very pleased with the success of their mortality composting efforts as a result of this program.
- More than 2,000 Ohio livestock producers have been certified to compost dead animals. Normal mortality of cattle, horses, poultry, swine, aquaculture, sheep and goats can all be composted on the farm utilizing regulatory guidelines developed by agricultural agencies. Ohio State University Extension heads the educational certification process developed cooperatively

with the Ohio Departments of Agriculture, Natural Resources and Environmental Protection Agency and the Natural Resources Conservation Service.

- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

2. **Key Theme: Agricultural Waste Management**

(Reference OSU Plan of Work Research Program 4Ar: Agricultural Wastes And By-Products)

- a. **Description of Activity** - The strategic location of Ohio agriculture to a large segment of the population of the U.S. has provided an advantage. However, animal production facilities, including those for dairy cattle, swine and poultry, have often created acceptability problems for neighbors, including fly infestations and odors. While Ohio has every reason to support economic growth in the agricultural sector, the citizenry must be sure that the quality of life is maintained or improved and that there is no long-term degradation of the environment. The age-old solution to animal waste disposal is to scatter it on farm land but this approach carries negative effects, including dust and run-off which contaminates nearby streams. The nutrient overloading concern carries well beyond the production facilities and land application sights to water supplies, streams, and lakes. The OARDC-OSU food animal production research facilities are equally vulnerable to creating environmental problems while potentially being exemplary models of appropriate technology and environmental stewardship. An OSU team of faculty and staff have since organized the Ohio Composting and Manure Management (OCAMM) Program with approximately 30 Ohio livestock producers, livestock facility designers and consultants, compost manufacturers, manure and compost users, equipment manufacturers and public agency technologists. The overall goal of OCAMM to identify issues and technologies leading to safe, economic utilization of livestock manure with minimum odors and nutrient losses to water supplies. Research has led to the development of methods of composting to reduce odors and in the process produce a value added product which can be safely used as fertilizer. Additional studies have investigated the biology of composting organisms to more effectively eliminate odors and hazardous chemicals.
- b. **Impact** - Work of OCAMM is establishing the OARDC facilities as exemplary environmental stewards with respect to composting and manure management. Through seminars, tours, field days and support of research, it has disseminated information to stakeholders to help them solve composting and manure management problems. Development of better methods of manure management are absolutely essential to the economic future of not only animal agriculture in Ohio but to related industries as well. For example, the trend in dairy production has been to larger herds to obtain the economy of scale but this puts pressure on the industry to handle waste. If the industry

finds that large scale dairy operations are not compatible with the population density of Ohio and many of these operations move elsewhere, the cheese industry (Ohio is number one in Swiss cheese production) will also be lost, taking thousands of jobs with it.

- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

3. **Key Theme: Integrated Pest Management**

(Reference OSU Plan of Work Research Program 4B: Integrated Pest Management)

- a. **Description of Activity** - Integrated Pest Management (IPM) is designed to minimize pesticide use by careful timing as well as using pesticides sparingly with other methods of pest control. Achievement of the goals has a return in reducing costs to the producer and being more environmental friendly. Several forces in the United States today are intensifying the need for increasing the practice of IPM. The Food Quality Protection Act (FQPA) passed by Congress in 1996 may result in the removal of many traditional conventional pesticides from the marketplace. Ohio has a strong agricultural base but it is a highly urban and suburban state that is undergoing strong growth in the urban pest control industry, with increasing interest in environmentally sound pest management. Increasing public concern with rural - urban interface issues involving agricultural practices, and intolerance toward toxic pesticides in food and in the environment, mean that alternative methods of pest control will need to be developed. To this end, a number of projects related to IPM has been initiated, including a search for varieties of soybean that are resistant to soybean cyst nematode and of alfalfa that is resistant to potato leaf hopper. Other studies have explored the expanded use of cultivating practices such as mulching as well as discovering microbiological components of compost which aid in disease resistance.
- b. **Impact** - Development of IPM has resulted in the use of less pesticides and more economical means of crop production.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

4. **Key Theme: Water Quality**

(Reference OSU Plan of Work Extension Program 4De: Water Quality)

- a. **Description of Activity** - NonPoint Source Pollution is a major issue in Ohio. This is especially true given new State and Federal regulations due to come into full effect by the year 2005, which will affect over 250 communities throughout Ohio. Ohio NEMO presents a three tier pragmatic approach of

- 1) Natural resource based planning;
- 2) Low impact development; and
- 3) Implementation of best management practices and maintenance to reduce the impact of urban development on Ohio's waterways.

Ohio NEMO focuses on the identification, development, and delivery of water quality educational programming for city, county, and township officials regarding the implication of land use decisions on Ohio water quality. In an effort to integrate some of the same concepts of NEMO the OSU teaching, research and extension missions the CampUShed program was initiated in November of 2000. The OSU CampUShed project combines the service and academic sectors of the University in a collaborative effort to reduce the impact from activities on the OSU campus on the environment. These efforts will be incorporated into Extension programming to provide pragmatic examples of cost effective and environmentally sound ways to reducing the impact of urban runoff on Ohio streams.

- b. **Impact** - In 2001 some of our major accomplishments included a new fact sheet "Multi-Functional Landscaping: Putting Your Parking Lot Requirements to Work for Water Quality," which has national recognition; a one day workshop co-sponsored with the County Commissioners Association of Ohio and the County Engineers Association of Ohio attended by 108 Engineers, Extension Agents, and City and County officials; Numerous presentations to local groups about Ohio NEMO; Consulting with communities (including the City of Columbus) on implementation on new stormwater regulations; working with the Ohio Stormwater Taskforce on the development of educational material for stormwater management.
A major new initiative has started between Ohio NEMO, Ohio Sea Grant, Ohio Department of Natural Resources, the Ohio Coastal Management Program, and the NOAA to increase NEMO programming in the Great Lakes Basin. Ohio NEMO will be bidding to host the next National NEMO conference in May of 2003.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

5. **Key Theme: Water Quality**

(Reference OSU Plan of Work Research Program 4Dr: Water Quality)

- a. **Description of Activity** - Ohio has an abundance of fresh water, thanks to Lake Erie and many rivers, fed by usually adequate rain and snow fall. Many years ago, Lake Erie was extremely contaminated by industrial waste but that problem has now been markedly ameliorated. A major problem now is the introduction of zebra mussels which have multiplied and research projects are focused on reducing that population. Other research projects Although most of the wetlands originally surrounding Lake Erie are gone, diked wetlands have been created but fish such as the common carp have a devastating effect on the vegetation in these diked areas. Methods to control carp are

being investigated. Other research which has shown that wetlands have a purifying effect on water resources, seeks to increase wetlands. Finally, small food processors are increasingly having a difficult time meeting waste water treatment standards which has prompted research on the development of small waste water treatment facilities suitable for small amounts of processing wastes.

- b. **Impact** - Clean water for the population is a goal that must be achieved. In addition, the problem of nitrate run-off not only can have negative health effects, particularly in infants, but it is a waste of producer money as well as a contaminant that has caused problems throughout mid-America and the gulf of Mexico. While this section deals with water quality, that issue surrounds much of the research done on agricultural production practices and waste management.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

6. **Key Theme: Water Quality**

(Reference OSU Plan of Work Extension Program 4E: Watershed Management)

- a. **Description of Activity** - OSU Extension educators have created the Ohio Watershed Network, an electronic network used to connect local watershed coordinators with each other in a manner that enables them to help each other and creates co-learning arrangements. The centerpiece for the network is a Web site, *Ohio Watersheds Online*. The site contains: 1) contact information for Extension educators with a broad range of watershed management expertise; 2) current events in the public media regarding watershed and water resource issues; 3) a calendar of upcoming educational programs and events; and 4) a list serve called Ohio Watersheds. Numerous OSU Extension initiatives are also underway in individual watersheds across the state and are lead by local county Extension Agents.
- b. **Impact** - Over 300 watershed professionals and group leaders are subscribed to the Ohio Watersheds Listserv through which they receive information about water resource policy, professional development and funding opportunities, and have an opportunity to participate in discussions about water resource issues in Ohio. Five Extension Agents, Watershed Management are working directly with watershed coordinators in their regions to assist in the development of watershed management plans, public education and outreach planning, and grant proposal development. Approximately 100 watershed groups have been assisted in developing watershed management and education program planning through workshops or direct consultation with Extension Agents.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

7. **Key Theme: Other - Ecosystem Based Management**

(Reference OSU Plan of Work Research Program 4F: Ecosystem-Based Management)

- a. **Description of Activity** - Ecosystem based management can be defined as a process for ensuring that agricultural production, environmental and social goals are congruent. Agriculture is the most extensive user of land in Ohio and advances in technology, coupled with policies favoring large - scale crop monoculture and farm consolidation, have resulted in a highly productive agricultural industry. But at the same time, the development of environmental awareness within our society and the stewardship of our agricultural lands has come under scrutiny. The result is a situation that is often interpreted as diametrically opposed goals: maintaining productivity and profitability or protecting our environment. The ecosystem concept, with its focus on whole systems, provides an appropriate paradigm and practical foundation for developing a system of management that can be environmentally sound, productive and profitable; thus fulfilling societal expectations. Much of the present research interest has developed around the theme of carbon sequestration because of the national concern for carbon dioxide contribution to global warming. Soil is an important sink for carbon dioxide, especially when crops are grown with no-tillage. However, no-till often requires application of herbicides for weed control. This has led to research indicating that rape and mustard cover crops can reduce the need for herbicides. Other projects examined carbon dioxide liberation by microbiological action
- b. **Impact** - The agroecosystems management approach is a multi disciplinary effort to incorporate good land use practices which are consistent with environmental stewardship and productivity. The continued development to agricultural crops as a carbon sequestration system appears to contribute to the solution of a national problem and at the same time is good for production agriculture.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

8. **Key Theme: Forest Resource Management**

(Reference OSU Plan of Work Extension Program 4G: Forest Resource Management)

- a. **Description of Activity** - Extension associates, district specialists and county agents utilized a variety of delivery methods to provide the private non - industrial forest landowner a wide variety of skills that they can apply to their own property. The newly expanded Ohio Woodland Stewards Program is the driving force behind the new classes, newsletter and web page options for landowners. The Southeast Ohio Forestry Initiative (SEOFI) project was closed out with the ending of the grant.
- b. **Impact** - The “Woodlands & Watersheds” newsletter was distributed for the fourth and final time in the spring of 2001 as part of the SE Ohio Forestry Initiative. This newsletter was absorbed and reformed into “Ohio Woodlands, Watersheds &

Wildlife”, a newsletter of the newly expanded Ohio Woodland Stewards Program. It will be distributed across the state in both print and electronic formats.

- Two landowner leaflets were finished as part of the SEOFI: “Forest Pests” and “Protecting Woodland Streams”. 5000 copies of each were printed and distributed.
- An Ohio Woodland Stewards Program Team was formed utilizing staff from OSU Extension and Division of Forestry. The goal of this team is to increase woodland owner educational opportunities across the state. This will be done through the newsletter, new class offerings and a web site, which is expected to be up and running by May of 2002.
- A new program for the Ohio Woodland Stewards Program was introduced. “Name That Tree” is a one-day tree identification class for interested landowners. Two classes were held with a total of 170 participants.
- A one-day class teaching Crop Tree Management was held for Soil and Water Conservation District, Natural Resource Conservation Service and Division of Wildlife employees. Twenty-five people were in attendance. All of these individuals have the potential to work with private woodland owners. This class was designed to give these employees the knowledge of focusing a sites’ growth potential on those trees that best meet a landowners goals and objectives.

c. **Source of Federal Funds** - Smith-Lever 3b&c

d. **Scope of Impact** - State Specific

9. **Key Theme: Forest Crops**

(Reference OSU Plan of Work Extension Program 4H: Forest Specialty Crops)

- a. **Description of Activity** - Forest speciality crops, including maple product, Christmas trees, herbs, and tree fruits and nuts offer income opportunities that often exceed typical commercial timber production. In Ohio, both the Christmas tree and maple syrup industries are well organized and progressive. Both have commodity organizations, the Ohio Christmas Tree Association and the Ohio Maple Producers Association. A recent study indicates that there are over 600 commercial Christmas tree growers in Ohio. The size of the commercial maple industry in Ohio is less well documented, but is probably similar. In both of these industries most of the entrepreneurs are part time, and their earnings represent an important component of their annual income. Both industries represent several million dollars in annual sales - around five million dollars for the maple industry, approaching thirty million for the Christmas tree industry. Both the Christmas tree and maple industries are interested in the application of new production technologies and marketing strategies to the industry as a whole and to their individual operations. Less well-organized are the tree fruit and nut and the forest herb producers. Nonetheless, they are a clientele which is growing in numbers and their desire to receive

information and participate in OSU Extension programs.

- b. **Impact** - More than 970 participants were involved in forest alternative crop programs. Of this number, 505 were identified as under-served individuals.

- 210 commercial maple producers in Ohio and 345 commercial maple producers in three other states received in-depth training on various aspects of maple production.
- 98 potential maple producers received training on the fundamentals of maple product production and marketing.
- 245 commercial Christmas tree growers received training on various aspects of Christmas tree production.
- 36 potential Christmas tree growers received training on the fundamentals of growing and marketing Christmas trees.
- OSU Extension personnel strengthened participation in programs that address needs of other forest speciality crops by participating in programming and sitting on the Forestry Board of Directors of Rural Action, an entity focused on providing education and services to individuals in southeastern Ohio interested in forest speciality crops.

- c. **Source of Federal Funds** - Smith-Lever 3b&c

- d. **Scope of Impact** - State Specific

10. **Key Theme: Nutrient Management**

- j. **Description of Activity** - OSU Extension, working in partnership with the Ohio Livestock Coalition and key state/federal agencies, have developed and implemented the Ohio Livestock Environmental Assurance Program (LEAP). LEAP is helping livestock/poultry producers to profitably manage environmental challenges that are critically important to the success of their business, and effectively assess how their farmstead practices affect water quality. By OSU Extension providing LEAP certification programs, we will accomplish our primary objective - to promote sustainability by seeking profitable environmental solutions.

- k. **Impact** - Follow-up survey of LEAP Level 1 participants was conducted in 2001. A total of 1,775 mail questionnaires were sent to LEAP Level 1 participants. Of these, 432 producers responded.

- Environmental and cost-share opportunities motivated nearly 70% of the participation in LEAP. Manure management is a critical component of LEAP. 54% of the respondents indicated they have changed or will change their manure handling or treatment practice as a result of this program.
 - Nutrient utilization is a component of a manure management program. About 62% of respondents indicated they have made a change in the way manure nutrients are managed on the farm. The most significant (32%) indicated they were giving manure nutrient credits during the development of nutrient budgets for the farming

operation. About 65% of respondents indicate manure nutrients account for 25% or less of their crop nutrients, and manure nutrients account for 25- 100% of the nutrients on the remaining operations.

- Many off-site impacts from livestock operations are traced back to improper manure management. Some 63% of these LEAP participants indicated a change in manure application practices. Over 30% of the changes identified were to spread on more acres. This may have a significant impact on nutrient loading rates and odor control issues. In addition, about 60% of participants have taken steps to improve their farms image as a result of LEAP. Most (27%) have taken this step by providing some type of service for their neighbors such as snow plowing.
 - In addition, some 47% of these LEAP participants realize odors create off-farm impacts, these impacts are real, and have taken steps to minimize these impacts as a result of this program.
- c. **Source of Federal Funds** – Smith-Lever 3b&c
- d. **Scope of Impact** – State Specific

Goal 5. Enhanced Economic Opportunity and Quality of Life

Executive Summary

Enhanced economic and educational opportunities lead to improved quality of life all Americans, not just the rural sector. Much of the previous discussion in this report is devoted to improving economic opportunities as well as enhancing the environment for rural Americans. In addition, research is needed on how to guide consumers on making the most rational choices to preserve and increase their economic position

The Land Use Team has recently been active with workshops on the new state purchase of the development rights program that was funded by a \$25 million state bonding initiative with a local match. In addition, the Ohio Department of Development had provided grants to nearly 60 Ohio counties to develop a farm preservation plan. Extension personnel were actively involved in recruiting and training members and assisting in the development of these plans. Additional assistance was given to the development and training of various planning commissions and in assisting in the comprehensive community planning process.

Community Economic Development: Extension personnel provide the lead in about a dozen counties for their economic development program. Extension works on a total community development paradigm. In the economic development strategies, a new Business Retention and Expansion Program was developed by the Department of Agricultural, Environmental and Development Economics. This

flexible consulting program assists the local community in selecting their own survey tool and reporting mechanism. The community is provided the items and assistance they request. Retention and Expansion Programs are conducted for nearly all sectors of the economy including industrial, agricultural, retail and service. Additional assistance is provided in educational programs on enterprise zones, joint economic development districts, and tax abatement. Assistance is also provided in attraction and community capture of local discretionary income.

Programs are also available for local leaders and government officials on wastewater treatment alternatives and water supply systems. Extension educators in several counties work closely with local groups in the creation and operation of revolving loan funds and the establishment of industrial parks. Some of the Community Development Agents conduct downtown revitalization programs and state route corridor development projects.

Community Leadership Development is a wide -ranging area that includes operation or assistance of year-long leadership training programs. More ad hoc programs include training for members of non-profit boards of directors. Leaders are instructed in such programs as: appreciative inquiry, finding and mobilizing community assets, and Vision to Action. The Public Issues Team provides instruction on Framing of Issues, National Issues Forum (as per Kettering Foundation), and dispute resolution.

Local Government Leadership Academy: The Toledo Area Local Government Leadership Academy was organized beginning in January 2002 with thirty -five participants. This is the first local/ regional Academy organized outside the major Academy for local officials who cannot find time to attend the programs and conferences of state local government associations. The focus of the academy is more efficient and better government operations.

Tourism Development Programs are focused in the rural areas on heritage tourism. The Ohio Chautauqua Program has brought a renewed sense of pride in several counties as they participate in enrichment activities and rekindle an interest in historical events.

The Ohio 4-H Youth Development program provides positive environments for culturally diverse youth and adults to reach their fullest potential as capable, competent, caring and contributing citizens thus enhancing their quality of life. As a result of the Ohio 4-H positive youth development experience: youth develop marketable skills for lifelong success; youth participate in and learn through citizenship opportunities to transform local communities; youth appreciate and build upon diversity to foster a harmonious global society; youth have a sustained relationship with a caring adult to enable them to be productive citizens; and volunteers build their skills and abilities in working with youth.

Smith-Lever Fund expenditures for Goal 5: \$3,507,080 FTE's: 75

Goal 5 Key Themes

1. **Key Theme: Impact of Change on Rural Communities**

(Reference OSU Plan of Work Research Program 5Br: Rural/Urban Interface)

- a. **Description of Activity** - Rural America is changing - rapidly. Increasing small town near major metropolitan areas in Ohio are becoming highly populated suburbs and more land is taken out of production. Studies of this trend over the past twenty years indicate that conversion of land to urban uses is related to socioeconomic as well as physical characteristics of communities. Fortunately, these same studies indicate that the most productive land is less likely to be taken for development.
- b. **Impact** - Rural America has changed and, if anything, will undergo more changes in the future. That is why it is important for these trends be measured and understood so that policies can be developed which optimizes land use.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

2. **Key Theme: Other - Quality of Life**

(Reference OSU Plan of Work Research Program 5D: Quality of Life)

- a. **Description of Activities** - Today's world dramatic social and technological changes are profoundly affecting the lives of Ohioans, all families and communities, urban and rural, large and small, face challenges to economic well being and quality of life. Whether encountering issues such as buying a home, saving for retirement, starting a business, or finding their way through new paths created by recent economic reforms, individuals and families of all economic levels require guidance and information in making good decisions. Similarly, quality of life is constantly challenged in this increasingly complex society as more members of a family enter the workforce, as more stress is exerted on relationships, as health and wellness are threatened by illness, trauma or pressure, as children, teens, adults, and senior citizens experience the challenge of living in today's world. Whether encountering issues such as parenting skills, teen pregnancies, stress management, coping with illness or divorce, living in a blended family, serving as a care giver, or balancing work and family, individuals and families of all economic levels require guidance and information in dealing with an increasingly complex world. Whether families are urban or rural, quality of life issues revolves around economic stability, personal and mental health and family life. Studies have revealed that the average family in the 1990s spent \$57 per child for every \$100 per adult. This ratio increased with householder education and decreased with household income.
- b. **Impact** - Economic and educational opportunities are directly tied to quality of life for rural as well as urban Americans.
- c. **Source of Federal Funds** - Hatch
- d. **Scope of Impact** - State Specific

3. **Key Theme: Community Development**

(Reference OSU Plan of Work Extension Program 5E: Community Economic Well - Being)

- a. **Description of Activities** - Community Economic Development agriculture value-added projects are important to the economic health of many farm producers. Contributions to value-added projects include assistance in creation of roadside markets, roadside marketing conferences and other research and education projects.
- b. **Impact** - County agents, District Specialists and State Leaders provided assistance with feasibility studies, tours, planning, and promotional materials. A feasibility study on the potential of an Ethanol Plant was accomplished. Tours of value added facilities were conducted for interested producers and steering committees established from these tours. Farmers markets were created in various communities. Business plans were developed and promotional materials such as ones for the woodcraft industry. A woodcraft-training manual was created and distributed to help interested producers understand customer standards. Finally, Extension Professionals performed market research on customer demands for agricultural and wood products. An application for development of a value-added market development program was submitted to the USDA Fund for rural America. Unfortunately this request was not funded, but a search for other resources are being pursued.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

4. **Key Theme - Jobs/Employment**

(Reference OSU Plan of Work Extension Program 5E: Community Economic Well - Being)

- a. **Description of Activities** - Community Development Program Areas work in economic development issues is centered on working in partnerships to create and enhance economic opportunities. 21 full-time Community Development Agents and many dual-program Extension Professionals contribute to this effort. Work reported includes tourism development activities, retention & expansion programs, attraction of businesses, development of public infrastructure, small business planning and training and assistance to local economic development boards.
- b. **Impacts** - Agents reported assisting the community in the creation of 354 jobs totaling 37.5 million dollars in investments. They provide business -training workshops 82 entrepreneurs and business planning assistance to another 24. They help manage and direct the use of small business revolving loan programs. In addition they assisted community and public leaders in obtaining grants to fund public infrastructure programs.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

1. **Key Theme - Community Development (Leadership)**

(Reference OSU Plan of Work Extension Program 5F: Community Development)

- a. **Description of Activities** - A Community Planning or Community Visioning process to develop widely held goals for the community has been outlined as a priority program for Ohio communities. In these programs an effort is made for every community member who wishes to be involved in creating the Community Vision in Action plan. The concepts of assets and capacities of the community are utilized as well as concepts of sustainable development. This includes not only considering the economic impact of development but also the social and environmental impacts to the community.
- b. **Impact** - Comprehensive Community Plans were developed in Clinton and Wyandot Counties and Community Strategic Plans were developed in Nobel and Washington Counties in Ohio. In the pilot Sustainable Development Project in Nobel County, over 700 residents shared their vision of a sustainable future for their community by developing lists of 178 items that they currently valued about their community and 143 items they hoped would be different for future generations in Nobel County. Total number of participants in the Project was 732 with 423 under-served individuals and 458 as under-represented. There were 35 volunteers participating in the planning and 37 individuals participating in non-formal education programs on economic development.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

6. **Key Theme: Community Development**

(Reference OSU Plan of Work Extension Program 5F: Community Development)

- a. **Description of Activities** -Community Leadership: Elected local government officials often take office without any formal training for the leadership responsibilities they assume once in office. Most elected officials have received on the job training as they have worked their way through community civic and political processes. However, once in office they are faced with a number of challenges relating to the way they conduct themselves in office. In a series of dialogue sessions between Ohio State University Extension Community Development representatives and directors from the County Commissioners' Association of Ohio, the Ohio Municipal League, and the Ohio Township Association, representing a combined total of more than 7,000 local elected officials, an Ohio Local Government Leadership Academy was created to provide a structured learning experience for local elected leaders. The curriculum was negotiated among the participating parties and concluded with the development of ten courses for elected officials. The Toledo Area Local Government Leadership

Academy was organized beginning in January 2002 with thirty -five participants. This is the first local / regional Academy organized outside the major Academy for local officials who cannot find time to attend the programs and conferences of state local government associations. The focus of the Academy is better government and more efficient operations.

- b. **Impact** - Since the creation of the program in January 2000, three hundred and sixty - three local officials have participated in the program. From the feed back from participants, elected officials indicated they had developed many new ideas for implementation in their local communities. The evaluations from the program showed high levels of satisfaction with the training. It is too early in the cycle and too few individuals have participated to fully assess the impact that the training will have upon the way local officials will change the way public business is conducted.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

6. **Key Theme - Community Development**

(Reference OSU Plan of Work Extension Programs 5F: Community Development and 5H: Land Use Issues)

- a. **Description of Activities** - Land Use Issues: During the calendar year 2001, Extension agents and specialists assisted public officials, community leaders and the general public in eleven counties that were dealing with land use issues. The 11 counties receiving special attention were Auglaize, Carroll, Champaign, Clermont, Delaware, Fayette, Highland, Holmes, Montgomery, Muskingum, Stark, Van Wert, Wood and Wyandot Counties in Ohio. In addition to providing professional support to a number of Farmland Preservation Task Forces, information was provided on land use planning and farmland preservation tools such as conservation easements. In Wood County an innovative effort to bring together the local leadership in the areas of land use planning and agricultural economic development was undertaken.
- b. **Impact** - Attendance at the various meetings held on land use issues was over 1,200 people. Specific outcomes of Extension land-use programs include a comprehensive preservation plan in Delaware County, the placement of a conservation easement on a major parcel of land in Montgomery County, and plans for the establishment of a new land trust in the Miami Valley. To provide additional support to local public officials, a land use resource directory has been prepared and posted on the web. In six of the counties work is now under way on new comprehensive plans and/or zoning ordinances.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

8. **Key Theme - Community Development**

(Reference OSU Plan of Work Extension Program 5F: Community Development)

- a. **Description of Activities** - Public Issues Education: A state specialist working with the Columbus Health Department and the Mid-Ohio Regional Planning Commission has designed an innovative public participation process as part of Project CLEAR. The three-year project is a pro-active effort to develop ozone reduction strategies in anticipation of EPA mandates to lower ozone levels in central Ohio. The public participation component of the project involves a discussion guide and a series of deliberative public forums designed to both educate people about the complexity of the ozone problem and elicit their ideas for ozone reduction.
- b. **Impacts** - A 17-page discussion guide has been written and produced for use in the deliberative forums. During 2001, twenty-seven forums were held throughout Central Ohio. The Project Steering Committee, comprised of public officials and representatives of the industrial, commercial and environmental sectors, has expressed its approval of the very innovative approach being used to get public input.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

9. **Key Theme - Leadership Training and Development**

(Reference OSU Plan of Work Extension Program 5F: Community Development)

- a. **Description of Activities** - Community Economic Development Programs and Workshops are conducted for public officials and community leaders to better prepare them to meet their responsibilities. Yearly leadership classes are held to help existing and aspiring leaders enhance their skills in providing leadership in the public arena. Training is provided to help individuals gain basic skills necessary for their participation in community activities and decision making. Countless hours are spent by Extension Professionals in developing communication channels that enhance collaboration between public agencies and the public-private sector. Management of a statewide training workshop for Economic Development Professionals is coordinated and taught by Extension Professionals.
- b. **Impact** - It is estimated that more than 300 public officials, in excess of 450 community leaders and 590 citizens took advantage of Extension Leadership Programs for Community and Economic Development. This led to the development of strategic plans for addressing community dreams and aspirations.
- c. **Source of Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

10. **Key Theme: Family Resource Management**

(Reference OSU Plan of Work Extension Program 5G: Management of Economic Resources)

- a. **Description of Activities** - Families in Ohio cope with a multitude of stressors of everyday life, and many of these challenges tax families undue amounts. OSU Extension provides family financial resource management programs and resources like Money 2000, Master Money Manager Program, Family Nutrition Program, Women's Financial Information Program, and Master Clothing Education Program as a means to educate families on debt reduction, savings, tax preparation, home and small business development, management of housing and clothing resources, and retirement and estate planning.
- b. **Impact** - More than 100 educational sessions were held in this program area. Financial information displays were developed and used at work site fairs and at other educational activities. Ten issues of a newsletter, "LifeTime" were written and distributed to county FCS professionals for distribution to appropriate residents. FCS professionals reported more than 100 educational sessions in fifty counties. Of the Warren County, 100 percent reported learning new information and 93 percent reported intentions of adopting one or more recommended practices.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

11. **Key Theme - Tourism**

(Reference OSU Plan of Work Extension Program 5I: Business Efficiency)

- a. **Description of Activities** - Tourism development is one major focus of the Ohio community economic development program. Tourism is important in Ohio with over ten billion dollars in primary economic activity. Many of our programs reported in other places such as small business development and management assist tourism. Extension tourism programs are often focused on the 29 Appalachian counties of Ohio based upon the natural resources of the area. It is also the area of the state where unemployment is highest and income levels are below the state average.
- b. **Impact** - Twenty-seven managers or owners of businesses serving a tourism system were motivated to adopt a hospitality management plan for their enterprises. This program gave them the means to plan, organize and implement a hospitality management plan providing additional training and skill development to employees.
- c. **Source of Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

12. **Key Theme - Farm Safety**

(Reference OSU Plan of Work Extension Program 5J: Work/Life/Health Issues)

- a. **Description of Activities** - Community and Farm Safety. Safety is a priority program for Amish families due to the relative high incidence of buggy accidents and serious farm accidents. A program was developed to target Amish buggy drivers and their families. This program was conducted in community events and through the Amish schools. Special Amish safety programs including marketing of buggies with reflective materials were also developed. Meetings were conducted with Amish Bishops to determine what would be acceptable or unacceptable due to religious convictions with various markings and use of lights on Amish buggies.
- b. **Impacts** - More than 4,000 people from Amish communities participated in the programs. An Amish retail dealer for safety lights and marking kits reports he has outfitted approximately 931 buggies in Ohio with the recommended reflective materials since October 2000. He has also sold 1,050 LED lights (the fast blinking lights) since October 2000 and says they are well received in the Amish community. In addition to improving the buggy visibility, he has also sold leg wraps for approximately 581 horses and Slow Moving Vehicle (SMV) signs for 1,386 vehicles (including buggies).
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

13. **Key Theme: Leadership Training and Development**

(Reference OSU Plan of Work Extension Program 5K: Positive Youth Development)

- a. **Description of Activities** - The purpose of State 4-H Leadership Camp is to help meet that challenge by enabling teen participants to become better leaders and to achieve the following objectives: develop collegial leadership knowledge, skills, and attitudes; contribute leadership in groups to identify & achieve goals and earn support; develop leadership skills such as envisioning, consensus-building, group building & recognition; realize the degree of control they have over their lives; are encouraged to take the initiative to try new things and not be afraid of failure or success; gain in physical, intellectual, emotional and social development; gain ideas & methods to improve their clubs, communities, country & world; develop new friendships; provide real leadership in committees, leadership groups, & cabin groups, and have fun. State 4-H Leadership Camp is built on 10 research-based principles for effective youth leadership development. It: a) is built around specific leadership development purposes and goals, b) encourages high expectations and confidence in teens and demonstrates respect for teens, c) emphasizes experiential learning and involves teens in exercising genuine leadership, d) teaches teens history, values, and beliefs of U.S. society, e) promotes awareness, understanding, and tolerance of other people, cultures, and societies, f) involves teens in collaborative experiences, teamwork, and networking with peers, g) helps teens develop specific skills related to leadership, h) involves teens in significant relationships with mentors and positive role models, i) facilitates the development of individual strengths and personal characteristics, and j) involves teens in

service to others, to their community, to their country, and to the world.

- b. **Impact** - Camper ratings of how well the State 4-H Leadership Camp objectives were achieved ranged from 5.6 to 6.6 (Very Good/Agree to Strongly Agree), as outlined on the table below (scale: 7=strongly agree/excellent to 1=strongly disagree/very poor) (n=138):

As a result of the 2001 State 4-H Leadership Camp, participants...

Developed collegial leadership abilities – **5.8**

Contributed leadership in helping groups shape & achieve goals and gain support – **6.0**

Developed leadership skills such as envisioning, consensus-building, negotiation, perspective-taking, p.r., group building and recognition – **5.6**

Realized the degree of control they have over their lives – **5.6**

Were encouraged to take initiative to try new things and not be afraid of failure or success – **6.2**

Gained in physical, intellectual, emotional and social development & became more competent, caring and contributing individuals – **5.9**

Gained ideas to improve their clubs, communities, country & world – **6.0**

Developed new friendships – **6.6**

Provided real leadership in committees, leadership groups & cabins – **5.9**

Had fun – **6.1**

- c. **Source of Federal Funding** - Smith-Lever 3b&c

- d. **Scope of Impact** - State Specific

14. **Key Theme: Youth Development/4-H**

(Reference OSU Plan of Work Extension Program 5K: Positive Youth Development)

- n. **Description of Activities** - In Ohio, 80,080 youth participated in organized community clubs, 75,000 youth participated in special interest and day camp programs, 30,220 youth participated in resident camps, and 115,000 youth participated in school enrichment opportunities.
- o. **Impact** - 4-H youth participants enrolled in over 352,000 individual projects as a result of their involvement. Youth participated in a variety of educational clinics and in-services to increase their subject matter and life skill development. Ohio was also a part of the national 4-H Impact Assessment project. In general, youth are very positive about 4-H and specific aspects of the program. The vast majority (90 percent or more) agree or strongly agree with the statements such as the following: “4-H teaches me to be responsible for my actions” and “4-H teaches me to help other people. Other program impact highlights include youth reporting: “All kinds of kids are welcome in 4-H,” 97 percent; “I feel like I belong in 4-H,” 89 percent; “4-H helps me accept differences in others,” 90 percent; “I feel safe when I do 4-H activities,” 93 percent; “In 4-H I feel that it is safe to try new things,” 94 percent; “Boys and girls have equal chances to do everything in 4-H,” 94 percent and “Both boys and girls can be leaders in 4-H” 94 percent.

- p. **Source of Federal Funding** - Smith-Lever 3b&c
- q. **Scope of Impact** - State Specific

15. **Key Theme: Parenting**

(Reference OSU Plan of Work Extension Program 5L: Parenting and Family Life)

- a. **Description of Activities** - Today’s families face many challenges such as divorce, family violence, teen pregnancies, and general parenting issues. Parents need to learn skills to help them nurture and guide youth from infancy through adolescence and beyond as well as nurturing themselves.
- b. **Impact** - A Child Care specialist position was filled in 2001 to complete the four member specialist team to give leadership to OSU Extension programming to this goal. A Positive Parenting Newsletter is distributed statewide 6 times per year to approximately 150,000 parents. The newsletter Child Care Connection had 43,950 copies distributed. A Family Life Month Packet and an Older Americans Month Packet are developed as resources for those doing programming targeting parents and families. FCS Agents reported 25,388 participants at programs targeting family life, including parenting, issues. Of those, 13,464 were defined as under-served populations. A significant number of the participants were from court mandated programs and from programs developed in collaboration with other agencies and organizations and that targeted families at risk. Seven hundred fifty four volunteers contributed time to the goal. Agents conducted 2,263 educational programs with 16,677 participants. Of these, 93 percent learned new information from the program, 61 percent planned to adopt one or more recommended practices as a result of the education program, and 32 percent reported adopting one or more recommended practices as a result of the education program.
- c. **Source of Federal Funds** - Smith-Lever 3b&c
- d. **Scope of Impact** - State Specific

Stakeholder Input Process

The College of Food, Agricultural, and Environmental Sciences of The Ohio State University was awarded a grant from the W. K. Kellogg Foundation to conduct a process that would create: 1) a new vision for food systems education, with implications for changes in land-grant universities and higher education across the country; 2) new structures for engaging citizens in vision building, decision making, and agenda setting; and 3) new models for educational responsiveness to constituent needs. The process entitled “Project Reinvent” brought together, through 18 focus group sessions, more than 230 individuals from the College, the University, and citizens of the State of Ohio to gather their views on what the College of Food, Agricultural, and Environmental Sciences must become to most effectively serve the needs of the people of Ohio and meet the challenge of the 21st century. External stakeholder

groups participating in the focus sessions included farmers and producers, consumer and food advocacy/health care, food processors and retailers, agribusiness suppliers, commodity groups, environmental and natural resources groups, sustainable agriculture groups, legislators, primary and secondary educators, entrepreneurs/new technology, rural economic development groups, and media.

Some key highlights resulting from the focus groups input includes:

- The College adopted a new vision statement that would drive future decisions and an implementation grant was secured. Four teams were formed to address system change issues in:
 - Organizational structure
 - Reward system
 - Programmatic focus
 - Communication and marketing
- A team was formed to create a strategic plan for the Ohio Agricultural Research and Development Center, encompassing the Columbus and Wooster campuses and the 10 branch stations. In May 1998 the team presented the first phase of a strategic planning process, which identified a number of strategic issues and a series of experimental efforts to address those issues.
- Integrated systems approach identified and adopted as the foundation of the efforts within the College. The College recognizes that to sustain agricultural practices in the future the efforts must address issues of 1) production efficiency, 2) economic viability, 3) environmental compatibility, and 4) social acceptability in an integrated manner.
- A group of college and community leaders were brought together to serve as an ongoing advisory council to the Vice President and Dean of the College on issues that have widespread impact and implications for the College, its many units, and the full spectrum of audiences.
- An OARDC Internal Competitive Grants Program that matches funds from industry and other stakeholders with OARDC funds.

And the stakeholder input process continues. The Ohio Agricultural Research and Development Center and most academic departments have external advisory boards that meet at least quarterly to discuss current programs and provide input for future direction. Within the past 6 months in excess of 60 meetings have been held throughout Ohio with state legislators, community lay leaders, and representatives of Ohio State University Extension and OARDC to dialog on current educational and research programs and converse on future programs.

The Extension Community Development Program utilized a variety of methods to obtain stakeholder input. Many of these processes are intricate to the Community Development process itself. For example, appreciative inquiry, community asset assessment, and traditional needs assessments were used in twenty counties where full-time Community Development Agents are employed. Other community input programs were conducted in the Price Hill project in Hamilton County, the Comprehensive Community Planning Project in Highland County and Community Economic Development. Each of these boards conducts a year round program for community funds for the

Community Economic Development Program Agents in other counties utilize Community Development Program Sub-committees that interact with the county Extension Advisory Committee.

The Ohio 4-H Youth Development program seeks stakeholder input in a variety of ways. Fundamental to the input are the local county 4-H advisory and subject matter committees located throughout the state. Furthermore, the many committees include the direct input from both adult and youth membership. Stakeholders are also involved on statewide committees to further ensure important input to the development and implementation of positive youth development programming in Ohio.

Program Review Process

Merit Review

(Note: The merit review process has not changed in FY 2001.)

OSU Extension develops long range program plans through a process involving Extension personnel from throughout the system, input of lay leaders in communities, incorporating data about Ohio's population, and through collaboration with other agencies, institutions and organizations.

Each of the four program areas conducts long range strategic planning to prioritize programming. Specialists from academic disciplines provide insight from research trends while county Extension personnel provide insight from local communities. Systematic prioritization processes, such as Delphi, are used. Program areas work together to identify key issues that cut across disciplines. Special task forces or teams then collaborate to identify priority program efforts to address these issues. Funding is then allocated to support program priorities. Programmatic resources such as personnel or materials reflect the program priorities. In addition, these priorities direct from what sources grant funds are sought.

Once strategic plans are in place, there is continual review of plans to include the ability to be responsive to unanticipated issues. The system provides flexibility for agents to address these issues. In situations where grant monies are obtained, staff with specific, short-term employment contracts are hired to assist in meeting priority needs.

Agent specialization is a way for the system to provide subject matter expertise close to local communities. Agents determine a subject matter specialization that relates to needs in their geographical area of the state. They receive additional training to remain on the cutting edge of their field. They are encouraged to work with other agents in their district to address local needs in a timely manner. In addition, agents are linked to state specialists in the same discipline to enable the rapid dissemination of new information or the development of appropriate programming to address critical needs.

Scientific Peer Review

(Note: The scientific peer review process has not changed in FY 2001.)

Base funds (Hatch, McIntire Stennis, Animal Health) allocated to OARDC undergo an extensive review process within the OARDC system. The following describes the review process:

- Project proposals are initiated by research faculty and research scientists in consultation with colleagues and Department or Program chairs.
- Chairs review all proposals. Chairs are responsible for selecting at least two peer reviewers for each proposal. The reviewers are expected to have expertise in the subject matter area and can be from on campus or off-campus. The reviewers evaluate, recommend, and comment on each proposal.
- Reviews are returned to the proposing scientist who then responds to suggestions, makes changes, and resubmits the proposal to the Chair.
- Chairs indicate departmental approval by signing the AD-416.
- Following review and approval by Chairs, proposals are forwarded to the Experiment Station Director's Office where they are reviewed for accuracy in coding and format and concurrence with State Experiment Station and CSREES program directions. Revisions are requested if proposals are incomplete, are not sufficiently justified, or documented.
- Upon approval by the Director or his/her designee, projects are assigned a number and are electronically forwarded to CSREES for approval and inclusion into the Current Research Information System (CRIS). The Experiment Station Fiscal Office is notified of all approved projects wherein the Fiscal Office maintains records of expenditures to be used in the AD-419 and the Annual Report which are submitted to CSREES. The Experiment Station publishes the Annual Report to document and distribute scientific accomplishments and impacts.

Evaluation of the Success of Multi and Joint Activities

Agriculture and Natural Resource Extension Programs

Over the past two years, Ohio State Extension's Agriculture and Natural Resources (Ag/NR) program area has provided strong leadership to engage our 21 Commodity and Issue Teams to network with neighboring land grant universities. Within our annual report, we have profiled just a few of the very successful high profile programs, products and activities that are better leveraging our Federal, State, and County dollars to serve our very diverse industries and clientele. During the program year for 2001, the Ag/NR Teams and Departments accounted for over 65 different Multi-State programs and conferences held across the North Central Region and Country.

Evaluations conducted by our multi-state committees and Teams have indicated that they feel that Multi-state conferences create improved learning opportunities and also better complement the discipline strengths of each institution. Many of our conferences and educational products have developed a strong tradition of support from clientele throughout the entire region. It is our vision to continue to provide a supportive environment to our Extension Field and State Faculties that will build upon these successful multi-state ventures.

Research Activities from a Research Perspective

Multi-disciplinary research teams have been formed to address critical issues. The Agroecosystems Management Team brings together stakeholders and those involved in research, teaching and outreach from different disciplines and institutions to discuss and develop whole systems approaches to the challenges affecting agriculture and rural communities. Its activities include public seminars on system research, sustainable agriculture and agroecosystems, sponsorship of stakeholder initiated workshops on sustainable management practices, and support of local learning communities. A practical management guide that relates basic principles of ecosystems based management to specifics of crop and livestock production has been produced. Educational materials have been developed for grade K-12.

The Ohio Compost and Manure Management Team was formed to build focus on issues and system technologies leading to safe, economic utilization of livestock manure with minimum odors and nutrient losses to water supplies. A video linked seminar series addressing manure management issues followed by discussion increased communication among stakeholders and provided an opportunity for networking with researchers and policy-makers. Organized tours of livestock and composting facilities that demonstrated effective waste management were conducted. A field day highlighting construction of a composting pad and treatment wetlands was attended by approximately 100 individuals. A website that highlights OCAMM goals, activities, seminar summaries, and link to sites with relevant information was developed.

Ohio State researchers were participants on three multi-state research proposals that secured Initiative for Future Agriculture and Food Systems funding.

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Multi-state Extension Activities

1. Key Theme: Agricultural Communication

- a. **Description of Activity** - The *Agricultural Outlook* is a multi-state effort (Purdue-Illinois-Ohio) to provide a comprehensive and timely hard copy commodity outlook guide for the Eastern Corn Belt farmers and Agri-business professionals. Lead editors from each state choose the various commodity experts in each participating state to provide both a short and long term outlook for commodities of major economic importance to this region. Each year, as many as twelve authors from the three

participating states will produce this very timely and high demand publication.

- b. **Impact** - Agriculture Economists in Indiana, Illinois and Ohio prepared a 16-page annual Outlook publication which was inserted in the issue of the Prairie Farmer which is published/circulated in each state. The potential readership of farmer and allied industry personnel is over 200,000 subscribers.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

2. **Key Theme: Human Health**

- a. **Description of Activity** - The mission of the Healthy People/Healthy Communities national health initiative is to promote the capacity of individuals, families, and communities to increase healthy behaviors and lifestyle choices and make informed consumer decisions. The initiative strengthens community leadership, and promotes the formation and enhancement of quality partnerships and infrastructures to meet local health and health care needs. The initiative brings together the extension, teaching, and research resources of the land-grant university system and its stakeholders to address health care issues. FCS Associate Director served as Ohio contact organizing and participating in committee meetings.
- b. **Impact** - Impact data unavailable at this time.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

3. **Key Theme: Agricultural Communications**

- a. **Description of Activity** - Purdue/DTN Agreement (Electronic News Service) - This partnership is a joint effort to disseminate timely management/marketing information aimed at larger scale commercial farmers across the Eastern Corn Belt through the most widely subscribed farmer information network. Both Purdue and Ohio State University specialists and research faculty on a daily rotation provide articles on contemporary crop and livestock production.
- b. **Impact** - Both Indiana and Ohio cooperated in disseminating production oriented ag news, research results, contemporary advice from production extension specialists and AG/NR agents, and updated calendar event information to producers via electronic news systems.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

1. **Key Theme: Agricultural Profitability**

- a. **Description of Activities** - The Tri-State Dairy Nutrition and Management program effort provides an annual educational forum aimed at larger scale professional dairy producers and many professional industry consultants across the Eastern Corn Belt dairy region. Educational agendas range from the latest diet formulation software programs to recruiting and retaining new dairy farm employees and neighbor relations.

- b. **Impact - Dairy and Veterinary Extension Specialists from Indiana, Michigan and Ohio** developed and conducted two educational dairy conferences focusing on contemporary nutrition and efficient management systems. Conferences focused educational agendas toward highly competitive dairy managers and professional allied industry (veterinarians, nutrition and reproductive specialists and herd consultants).
- c. **Source of Federal Funds - Smith-Lever 3b&c**

5. Key Theme: Water Quality

- a. **Description of Activity - Wastewater Treatment Alternatives for Small Communities -** Small communities are facing the prospect of complying with the federal Clean Water Act to eliminate the discharge of pollutants to navigable waters of the US. Cost to build sewer systems and treatment plants to serve small communities exceeded \$2,000,000 per every 100 houses. Fortunately, small communities have other alternatives to eliminate the discharge of pollutants while still reducing costs. This program teaches local officials, professionals, regulators, property owners what they need to know to make these expensive and sometimes confusing decisions. Current collaborations include Indiana and New Mexico.
- b. **Impact -** In 2000, OSU Extension worked with New Mexico on infrastructure Financing. In addition, the new concept of onsite wastewater management was summarized in two new fact sheets AEX 750 and AEX 751. And the topic was also presented at the National Onsite Wastewater Recycling Association meeting in Michigan in October 2000. As a result of the presentation in Michigan, OSU Extension was invited to teach the topic in Utah and Minnesota in January 2001 and finally in Pennsylvania later in 2001. In 2001, a new approach to operating septic systems summarized in new Fact sheets AEX740, AEX741, AEX752, AEX753, AEX754 and invited to teach the topic in 2002 in Michigan, Iowa, Illinois, Massachusetts.
- c. **Source of Federal Funds - Smith-Lever 3b&c**

6. Key Theme: Positive Youth Development in Out-of-School Time

- a. **Description of Activities -** The Tri-State Work Group on Out-of-School Time effort brings together a team of Extension professionals in three states (Michigan, Ohio, and Pennsylvania) to address issues related to Extension programs for youth in out-of-school time. The group has focused initially on building capacity of Extension staff to conduct quality out-of-school time programs by (1) identifying current needs and the level of programming in the three states, (2) holding a series of conferences to introduce program models and enhance program efforts, and (3) providing resources for Extension staff to utilize that conveys age-appropriate programming ideas and best practices.
- b. **Impact -** During 2001 all activities were in the planning stages.
- c. **Source of Federal Funds - Smith-Lever 3b&c**

7. **Key Theme: Community Development**

- a. **Description of Activities** -2001 North Central Urban Extension Conference, A National Conference for Extension Educators and their partners who work in urban areas. Conference Theme: "Building Capacities in Communities, Families and Individuals" Conference Goals: 1. To share successful urban program models, ideas, and resources; 2. To enhance skills useful in developing and evaluating urban programs; 3. To promote Extension's commitment to diversity in staffing and programming; 4. To promote networking and partnerships among Extension's staff and others involved in urban issues. 5. To further the Extension Urban Agenda.
- b. **Impact** - 368 Extension educators and their community partners from 33 states attended the North Central Urban Extension Conference in Cleveland, Ohio May 1-4, 2001. Ohio State University Extension hosted this biennial event at the Sheraton Cleveland City Centre Hotel. The Pre-Conference was hosted by the National Urban Task Force and featured noted demographer, Harold Hodgkinson, who helped Extension administrators identify the challenges presented by the 2000 census reports. 103 presenters gave 47 presentations on themes of urban Extension outreach: diversity, urban gardening, nutrition education, economic development, family life, and youth development.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

8. **Key Theme: Aging**

- a. **Description of Activities** - Extension Agent from Montgomery County Served as Ohio Chairman for four-state Extension Conference on "Celebrating Mid-life: The best is yet to be!" Coordinated Ohio proposals for presentation, served as Housing Tract Chairperson selecting with committee comprised of person from each state presentations for that area, prepared press release packet as Marketing Chairman for the Conference, pulled together program material and printed program and post cards for the Conference, sharing material for web site and also with person designated to print final conference program.
- b. **Impact** - No impact data available at this time.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

Integrated Research and Extension Activities

1. **Key Theme: Workforce Preparation - Youth and Adult**

- a. **Description of Activity** - Workforce Preparation Across the Life Span program incorporates the multi-state project, "Rural Low-Income Families: Tracking their Well-Being and Functioning in the Context of Welfare Reform." The principal investigator in Ohio is Sharon Seiling. The other states involved are California, Colorado, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri,

Nebraska, New Hampshire, New York, Ohio, Oregon, Utah, Wyoming.

This is a research study of rural low-income mothers with at least one child age 12 or under. The study will assess the impact of welfare reform on their lives and on the community. Each state is interviewing 20-40 mothers in one or two counties. In Ohio, the investigators are interviewing participants in Hardin County. From the qualitative and quantitative data collected on these families, the research will provide insights to agencies and policy makers in Hardin County, the state of Ohio and the other states regarding family well-being and functioning within their rural communities.

As part of the study in Ohio, government officials and agency representatives, employers, and non-profit agency representatives will be interviewed about the implementation of welfare reform in the community. The data will be analyzed to compare the responses from the families to those of the community leaders, to more fully understand the issues and to assist in better meeting the needs of low-income families in rural counties in Ohio.

- b. **Impact** - Most families in the Ohio study had at least one adult working. Two-thirds of the mothers (20 of 30) and 15 of the 18 partners were working. The mothers averaged 30 hours per week, whereas the partners had an average work week of 48 hours. The mean hourly wage for mothers was \$7.12, and for partners it was \$9.05. Mothers were employed in five types of jobs: laborers/helpers, production, service, administrative support and sales. The partners were employed in jobs classified as laborers/helpers, production, service, transportation and mechanics. On average, they had no work benefits: one-third of mothers had private health insurance, as did 45% of partners. Their children were typically covered by Medicaid. Most adults had no health insurance coverage.

The typical family in the study involved a working mother with two children who was married or was living with a partner. The mother had completed high school or had a GED and her partner had the same level of education. Their household income was \$16,272, which put them below the poverty level. They received benefits from WIC and Medicaid and had gotten the Earned Income Tax Credit in the previous year. They relied on their extended family for childcare and other types of support. The mothers were more likely to be clinically depressed and food insecure than the population as a whole. Although not significant in the OH sample, in the larger study families' food security was significantly related to depression and money management practices, but not to amount of income.

- c. **Source of Federal Funds** - Smith-Lever 3b&c

2. **Key Theme: Human Nutrition**

- a. **Description of Activity** - The Nutrition Education for Limited Resource Audiences: Food Safety Education Validation Study. Educators in the area of food safety have identified a need for developing valid and reliable evaluation instruments for determining the effectiveness of their education efforts, particularly with limited resource audiences. This tri-state USDA funded grant project involves Cooperative Extension researchers in

food safety education from Ohio State, Washington State and Colorado State Universities. The primary objectives of this study are three-fold:

1. Identify key behaviors needed to prevent food borne illness arising from home food preparation techniques, and use these behaviors to develop effective food safety education programs within Cooperative Extension.
 2. To design and test an evaluation questionnaire, that will accurately assess food safety behaviors among low-literacy and/or low-income audiences.
 3. Evaluate whether self-reported behavior changes are a valid way to assess the behavioral outcomes of food safety education.
- b. **Impact** - Impact information not available at this time.
- c. **Source of Federal Funds** - Smith-Lever 3b&c

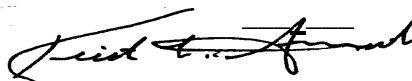
**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multistate Extension Activities and Integrated Activities**

Institution The Ohio State University
 State Ohio

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

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Electronic News Service</u>	_____	<u>\$68,394</u>	_____	_____	_____
<u>Agricultural Outlook</u>	_____	<u>\$64,237</u>	_____	_____	_____
<u>Tri-State Dairy Nutrition & Management</u>	_____	<u>\$64,511</u>	_____	_____	_____
<u>Wastewater Treatments for Small Communities</u>	_____	<u>\$28,287</u>	_____	_____	_____
<u>Healthy People/Healthy Communities</u>	_____	<u>\$4,631</u>	_____	_____	_____
<u>North Central Urban Conference</u>	_____	<u>\$27,434</u>	_____	_____	_____
<u>Positive Youth Development Out-of-School Time</u>	_____	<u>\$8,880</u>	_____	_____	_____
<u>Additional FCS Programs</u>	_____	<u>\$8,720</u>	_____	_____	_____
Total	_____	<u>*</u>	_____	_____	_____



 Director

March 1, 2002

 Date

*** NOTE: Due to unforeseen circumstances associated with budget cut backs, change in personnel in the reporting office, our new reporting system, and the date this report is due, some data are incomplete. Therefore, we are asking for a waiver until such time**

we can give more accurate totals.

Form CSREES-REPT (2/00)

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

Institution The Ohio State University
 State Ohio

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

Title of Planned Program/Activity	Actual Expenditures				
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>Workforce Preparation Across the Life Span</u>	_____	<u>\$5,501</u>	_____	_____	_____
<u>Nutrition Education for Limited Resource Audiences</u>	_____	<u>\$38,709</u>	_____	_____	_____
<u>Rural Low Income Families</u>	_____	<u>\$1,291</u>	_____	_____	_____
<u>Total</u>	_____	<u>*</u>	_____	_____	_____



 Director

 March 1, 2002
 Date

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Form CSREES-REPT (2/00)

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Request for Waiver from Target Percentage
for Multistate Extension Activities and Integrated Activities**

Institution The Ohio State University
State Ohio

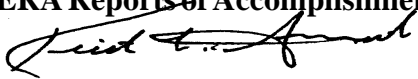
Waiver for (circle one): **Multistate Extension Activities** ✓
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Fiscal Year (circle one): **FY 2000**
 FY 2001 ✓
 FY 2002
 FY 2003
 FY 2004

Type of Waiver: **Pre-waiver** (Must be submitted prior to October 1)
 Post-waiver ✓ (Must be submitted with Annual Report of
 Accomplishments and Results)

Justification:

The College of Food, Agricultural, and Environmental Sciences of The Ohio State University is updating its reporting system and as a result, data required for both multi-state and integrated research and extension are not fully available at this time. Also due to unforeseen budget cutbacks and a change in personnel in our reporting office, we are asking for a waiver until we can fully document multi-state and integrated research and extension required for AREERA Reports of Accomplishment and Results.



Director

March 1, 2002
Date

Note: All reports must be submitted regardless of request for waiver.

Form CSREES-WAIVER (2/00)

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Request for Waiver from Target Percentage
for Multistate Extension Activities and Integrated Activities**

Institution The Ohio State University
State Ohio

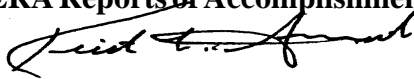
Waiver for (check one): **Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds) ✓

Fiscal Year (circle one): **FY 2000**
 FY 2001 ✓
 FY 2002
 FY 2003
 FY 2004

Type of Waiver: **Pre-waiver (Must be submitted prior to October 1)**
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Director

March 1, 2002
Date

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Form CSREES-WAIVER (2/00)

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Request for Waiver from Target Percentage
for Multistate Extension Activities and Integrated Activities**

Institution The Ohio State University
State Ohio

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 Integrated Activities (Hatch Act Funds) ✓
 Integrated Activities (Smith-Lever Act Funds)

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St. A. Slack
Director

March 1, 2002
Date

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Form CSREES-WAIVER (2/00)

**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**

Institution The Ohio State University
State Ohio

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

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<u>An Agricultural System that is Highly Competitive in the Global Economy</u>	_____	345,139	_____	_____	_____
<u>A Safe and Secure Food and Fiber System</u>	_____	_____	_____	_____	_____
<u>A Healthy, Well-nourished Population</u>	_____	_____	_____	_____	_____
<u>Greater Harmony Between Agriculture and the Environment</u>	_____	167,482	_____	_____	_____
<u>Enhanced Economic Opportunity and Quality of Life</u>	_____	99,214	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	661,835	_____	_____	_____

St. A. Jack

March 4, 2002

Director

Date

Form CSREES-REPT (2/00)