UNIVERSARY OF THE DISTRICT

DISTRICT OF COLUMBIA

Cooperative Extension Service
and
Agricultural Experiment Station

FY 2000 ANNUL REPORT OF ACCOMPLISHMENTS AND RESULTS

District of Columbia

FY 2000 Annual Report of Accomplishments and Results

OVERVIEW

The University of the District of Columbia (UDC) is the only urban Land-Grant university in the system and the only public institution of higher education in the nation's Capitol. As such, the Agricultural Experiment Station and Cooperative Extension Service focus their effort to find solutions to urban problems and address them. The quality of life of many of the District's residents continues to be plagued by chronic problems: teen pregnancy, parenting, crime, drug abuse, youth-at-risk, youth and family issues, food safety, nutrition and health. The mission of the University of the District of Columbia's Agricultural Experiment Station (AES) and Cooperative Extension Service (CES) is to work jointly to engage the community in teaching, research, and sharing beneficial information to the residents and business/agency/organization customers. Specifically, the Agricultural Experiment Station has formulated a research program that is economically viable, environmental safe, and sustainable and the Extension Service has formulated programs that specifically support family development and health.

Since the University is an urban land-grant institution, the Agricultural Experiment Station does not engage in traditional rural agricultural research, but seeks to enhance the quality of life for all citizens of the District of Columbia by addressing problems that are uniquely urban. The Experiment Station has research being conducted in some areas that few Experiment Stations address. The Research emphasis has been focused on, but is not limited to, urban conditions such as: nutritional risks and antioxidant status in the elderly; food quality and storage; restoration, conservation, and preservation of the city's environment and natural resources; water quality and monitoring; pest management; urban gardening; soil improvement; soil testing; and safe recycling and composting methods. The CES provides educational offerings through the Agricultural and Natural Resources (ANR), the Community Resource Development (CRD), the Family and Consumer Sciences (FCS), the 4-H and Youth Development (4-H), and the Nutrition, Diet and Health (NDH) programs. AES and CES are continuing to find ways to provide enhanced educational opportunities to the residents of the District of Columbia and to maintain the high quality, relevant programs.

The Agricultural Experiment Station accomplished a number of projects important to DC residents. A Christmas Tree Nursery was established with 800 seedlings and twenty-eight six-foot mature evergreens. In partnership with the National Tree Trust Foundation we also established a hardwood Regional Grow Outstation Tree Nursery. Five thousand hardwood tree seedlings were planted in April 2000. Volunteers from the University community, the National Tree Trust Foundation, the Urban Forest Council, AmeriCorp, and the DC Public Schools participated in this project.

Since August 2000, as a part of our effort to bring the Agricultural Experiment Station's land-grant mission to the citizens of the District of Columbia, a team of staff members worked with a community in Northwest Washington DC to enhance their neighborhood.

The AES staff members have worked with the District of Columbia's Public School system to develop teacher training courses consistent with DC Public Schools' standards. A curriculum was developed for environmental and water quality studies. We also developed a proposal to become the Chesapeake Ecosystems Study Unit (CESU) for the Northeastern Region of the Chesapeake Bay.

A partnership with the Anacostia Garden Club and Frederick Douglas Garden, Inc. partnership was established to assist in facilitating the development of the Frederick Douglas Garden. AES and CES will be working together with the Anacostia Garden Club on activities planned for developing the Memorial Garden.

We participated in two Multi-state Integrated Research Activities called "Post Harvest Physiology of Fruits" and "Nutritional Risk and Antioxidant Status in the Elderly." The Post Harvest Project is a project that investigates microbiological quality of fresh-cut produce. This project identifies the fundamental physiological, biochemical, and genetic phenomena that will be useful in developing improved technologies and practical applications of new knowledge to solve post harvest problems. The "Nutritional Risk and Antioxidant Status in the Elderly" Project identifies poor nutritional status including nutrient deficiency, under nutrition, and nutrient excess in the elderly.

CES has provided educational programs to our diverse population. We serve through our collaboration with agencies and organizations. We have provided human nutrition and health programming to Jewish seniors, Hispanic families and African-American communities.

In FY 2000, the District government began its new food safety regulations and inspection system. CES held the first Food Safety Conference for agency and food industry clientele. This conference was a forum for food safety and DC government regulations' information and training for participants in preparation for the start of the new DC inspection system. We have three USDA grants covering the food safety issue which will be reported upon their completion in FY 2001.

The District of Columbia is experiencing an increase in the growth of Charter Schools servicing grades K-12. We worked to ensure their access to CES programs. Our consumer education (LifeSmarts), financial resource management (High School Financial Planning Program), and our overall 4-H and Youth Development programs have been incorporated into the Charter Schools, as well as the regular DC Public Schools. CES started our "***100 Clover Club***" program to get 4-H in 100 after school programs across the city starting with elementary schools.

The Community Resource Development unit has made tremendous strides in providing assistance to DC residents interested in starting, improving and/or building their home-based small business. This activity has afforded residents the opportunity to expand their economic and employment potential. All CES program units have been incorporated into the 10 citywide "***21st Century Community Learning Centers***". These centers provide greater access to the entire population in their own neighborhood.

GOAL 1: TO ACHIEVE AN AGRICULTURAL PRODUCTION SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Not applicable to the University of the District of Columbia.

GOAL 2: A SAFE AND SECURE FOOD AND FIBER SYSTEM

Key Theme: FOOD SAFETY

The Nutrition, Diet and Health unit of CES provided food safety education and information to District customers through various programs. The CES train-the-trainer "**Food Safety Support for the Elderly**" program completed training and certification of nine DC Office on Aging Nutritionists, through the National Restaurants Associations' SERVSAFE program and **HACCP** resource guidelines. Along with the CES Nutrition Specialist, these certified nutritionists developed training materials for their **food handler staff**, in support of the health and safety of the senior citizens. Two of the nutritionists who received high certification exam scores qualified to become SERVSAFE Instructors.

In the spring of 2000 the CES brought together a conglomerate of public, private, professional, technical, government and service organizations concerned with food safety in food establishments and other food enterprises. A cross-section of 1650 organizations in the area network of food and nutrition were identified, a need assessment conducted and survey forms mailed to 1200 organizations to assess their perceived needs of food safety-related issues.

The FY 2000 culminating activity was a **Food Safety Conference** supported by 35 sponsoring agencies, who also provided steering committee members for planning and implementation. Six hundred and twenty participants attended this conference, representing dietitians, food service managers and workers, local and national government representatives, students, professors, restaurant owners, church volunteers and consumers. A Food Safety Resource Guide will be completed and distributed to 2000 agencies in FY 2001.

IMPACT

Six hundred-twenty participants learned the newly instituted regulations and inspection process and were able to receive first hand answers to their questions from District and Federal officials. They were able to discuss and voice any concerns regarding food safety issues with the agency presenters, the US Department of Agriculture, the Food and Drug Administration, the DC

Health Department and the Restaurant Association. This conference was a catalyst for providing additional Food Safety training at the National Caucus on Black Aged and the DC Food Bank. More than 250 agencies were in attendance.

Source of Federal Funds - Smith-Lever and Grant Fund

Scope of Impact - State Specific

GOAL 2: A SAFE, SECURE FOOD AND FIBER SYSTEM

Key Theme: FOOD QUALITY

TITLE: Postharvest Physiology of Fruits

Research Scientists are constantly seeking ways to improve the shelf life of freshly cut fruits. The Agricultural Experiment Station's Multi-state project, "Postharvest Physiology of Fruits" focused on developing better methods for extending the shelf life of freshly cut produce. This project investigated microbiological quality of fresh-cut produce which included mangoes, pears, apples, peaches, and persimmons. Preliminary results indicated that the increased microbial population accompanied the deterioration of sensory quality attributes. Deterioration of color, flavor, and texture as well as rapidly growing microbial populations were directly related to the number of days of storage. Consumer's demand for safe and quality fresh-cut produce requires constant monitoring of microorganisms.

Seasonal characteristics of fresh-cut honeydew and it quality maintenance by modified atmosphere packaging were also investigated. It appeared that summer fruits had higher soluble solids content and greater respiration rate. Also, the summer fruits were easier to become translucent and lost their shelf life earlier than winter ones. The development of tissue translucency of fresh-cut honeydew cubes adversely affected product quality and was primarily found in freshly cut cubes that had been sanitized by dipping in chlorine water following processing. Chlorine water dips (containing malate as a pH buffer, isoascorbate as reducing agent and/or calcium propionate as an antimicrobial salt) were tested to decrease tissue translucency and extend shelf life of honeydew sealed in a rigid container with a film overlap and stored at 10 C for 7 days. Quality analyses revealed that calcium propionate treatment decreased respiration and ethylene production rates. The treatment also maintained tissue firmness, the lightness and brightness of the honeydew cube surfaces, melon aroma, and overall visual quality through 7 days storage.

IMPACT

A dip in chlorine water supplemented with calcium propionate was an effective sanitizer and protected honeydew cubes from developing translucency and off-odor during 7 days storage in sealed packages at 10 C. This practice will be recommended for use in the fresh-cut industry.

STAKEHOLDERS INPUT

The Director of AES & CES in collaboration with the researcher, developed and disseminated a fact sheet regarding the project. A survey has been developed and distributed to the community in order to generate input and comments on the past accomplishments, current activities and what additional focus citizens would like to have included.

PUBLICATION

Jin-He Bai, Robert A. Saftner, and Yuen S. Lee. 2000. A Dip in Chlorine Water Supplemented with Calcium Propionate Extends the Shelf Life of Fresh-cut Honeydew. Abstract. HortScience: 35, No.3,p.406.

GOAL 3: A HEALTHY, WELL-NOURISHED POPULATION

Key Theme: HUMAN HEALTH and NUTRITION

The Nutrition, Diet and Health program is designed to provide families and individuals with the tools, techniques and knowledge necessary to make decisions to help meet the Dietary Guidelines for Americans, to improve **human health and nutrition** by reducing their risk of chronic disease, and to practice preventive health measures. Several of the NDH program offerings have provided cooking demonstrations to help with the desired change in lifestyle practices (i.e., low fat cooking, cooking with herbs, fiber in the diet, soy foods and you).

CES provided a three-hour training series to seniors through the UDC Institute of Gerontology and the Behrand-Adas Senior Fellowship, servicing more than 223 participants. The seniors were able to better understand the need to monitor their food, drug and herb interactions, and the importance of keeping their doctor totally informed of the use of these substances.

In the summer of 2000, the COES instituted the first CES/AES **Nutrition and Health Demonstration Fair**, held at our AES Research Farm in Greenbelt, Maryland. All research and program offerings were highlighted with exhibits, demonstrations and presentations. Various District and Federal stakeholders and public/private customers were in attendance for this program. Building upon this activity CES provided human nutrition and health programs to the customers in the District of Columbia.

CES provided guidance to 10 families experiencing special health issues around obesity in their children. The growing **childhood obesity concern**, specifically in the **Hispanic and African-American communities** has sparked an interest in a partnership with two District Health Clinics, one in Ward 1 where many Hispanics reside and one in the East of the River community. Our Nutrition Specialist has begun a Childhood Obesity Nutrition program for children ages 3 to 8 and their families. Parents became knowledgeable about the modification of their recipes and to read and analyze food labels. The children felt more in charge and began choosing 2 sodas on the weekend versus multiple sodas throughout the week, and picking fresh fruit as their snack choice. Since the Washington Metropolitan area has experienced a great influx of Hispanic immigrants, who continually move back and forth across DC/Maryland borders, we have begun a **multi-state partnership with the University of Maryland Cooperative Extension Service** to work together for the childhood obesity and family health and nutrition needs of this population.

IMPACT

District residents were provided with knowledge and skills related to the improvement of their nutritional and health habits.

Source of Federal Funds - Smith Lever

Scope of Impact - State Specific and Multi-State Extension

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Key Theme: HUMAN NUTRITION

TITLE: Nutritional Risk and Antioxidant Status in the Elderly

The Agricultural Experiment Station research project associated with efforts to address Goal 3 is the "Nutritional Risk and Antioxidant Status in the Elderly," a Multi-state research project. The project is designed to improve methods of assessing dietary patterns and nutrient intakes of the elderly as well as the antioxidant compounds in the diet and body. Phase I of the research established correlations between specified behavior constructs and dietary choices. Moreover, quantitative measures of association between the behavioral constructs and measures of dietary quantities of selected nutrients were described. Phase II of the research evaluated nutritional intake status and its resultant impact on the identification of risk factors using food groups. The food groups were identified in statistical terms as food clusters and were analyzed using factor analysis, cluster analysis, and principal components analysis. In Phase I and II of our project data collection instruments were constructed with hypothesized variables in mind. In an effort to identify possible unforeseen behavioral and attitudinal variables associated with

nutritional risk, the research methodology in Phase III has shifted to a qualitative approach. In particular, there is a plan of developing six case which will hopefully reveal deep, thorough, contextual insights into individual nutritional behavior stimulated by interactions with general circumstances and environment. Information is being gathered on life styles, including non-nutritional behavior, in an effort to establish subtle and less obvious connections to diet and nutrition.

IMPACT

There is a clear link between nutritional status in the elderly and the status of individual and morbidity. Moreover, knowledge and attributes and thus subsequent food and health related behaviors are inextricably linked to health outcomes. The data collection procedures and analytical designs of this study could significantly impact the development of nutritional status profiles based upon knowledge and attitudes related to diet, nutrition, and health. The research data and results from this study may be used to examine the role of awareness about dietary health relationships in food choice and ultimately nutrient intake and health status.

STAKEHOLDER INPUT

Researchers of this project along with the AES & CES Directors met with a group of citizens to obtain their input and comments on the accomplishments of the current research being conducted. They were asked if and what they thought could be added or omitted to possibly improve the research. To better ensure attendance by traditionally underserved populations, we are preparing to extend this process.

GOAL 4: TO ACHIEVE GREATER HARMONY (BALANCE) BETWEEN AGRICULTURE AND THE ENVIRONMENT

Key Theme: INTEGRATED PEST MANAGEMENT (IPM)

TITLE: Control of Cowpea Pests Through Natural, Chemical and Best Management Progra

The study, "Control of the Cowpea Pest Through Natural, Chemical and Best Management Program," is a research project which evaluates the impact of three IPM practices on insect pest numbers, and yield performances in the cowpea Vigna unguiculata cv "Pinkeye Purple Hull" and the "California Blackeye Pea No. 5." Natural controls used no pesticides. In best management programs, pesticides are applied after monitoring plants for pests and determining that serious damage could occur if pesticides weren't used. There were no significant differences in crop yield during the first year of study. Chemical control methods employed agricultural chemicals, pesticides and fertilizers at regular cycles to reduce pests and increase crop yield, while best management practices employ chemicals only when necessary. Insect number, however, showed a significant decrease in the best management program. This

study is continuing. The cowpea Vigna unguiculata was grown on all three IPM regimens to determine which method produced the greatest plant yield. Measurements of dry weight yield were taken immediately after harvest. Plant productivity was measured by the increase or decrease of plant biomass. Dry weight yield was significantly higher in plants treated with the chemical control regimen. Best management and natural practices produced approximately the same yield.

IMPACT

Integrated Pests Management is a method used to increase plant yield without causing harm to the environment. While chemical controls produce the highest yield, the fact that there was no significant difference between best management and natural practices indicates that one can apply no chemicals to crops and produce the same yield as spraying. The natural practice can help reduce the amount of pesticides that pollute the environment.

STAKEHOLDER INPUT

Demonstrations were established in collaboration with the CES staff at the University's Experiment Station. Most participants were interested inways to increase their garden produce yield without using harmful pesticides and polluting the environment. The demonstrations also included proper pesticide treatment for urban gardens. Comments on the on-going activities of this project and recommendations of the participants' concerns were given to the researcher. The researcher will be incorporating some of the recommendations into the research activities.

PUBLICATIONS

Grant, J., C. Cousin, F. Dixon, D. Beyene and P. van Berkum. Selection of Bradyrhizobium Isolates Recovered from Vigna unguiculata Plants Grown on Soils Amended with Biosolids Compost. International Journal of Systemic Bacteriology.
(manuscript in final stages of preparation).

Key Theme: YARD WASTE / COMPOSTING

TITLE: **The Effects of Using Organic Wastes as Soil Amendments in Urban Horticultural Practices in the District of Columbia**

The research on "Effects of Using Organic Wastes as Soil Amendments in Urban Horticultural Practices in the District" established field studies in which both cool and warm season vegetables were grown in plots containing composted yard waste and cow manure as the principal soil amendments. Both composted yard waste and cow manue were applied at the rate of 70 lbs per 100 sq. ft. and commercial fertilizer (10-10-10) at 3.3 lbs. Per 100 sq. ft. as control. Plots were laid out as a randomized block with three replications per treatment. Main plots were composted waste and subplot were vegetable crop varieties. Results showed that vegetables planted in compost treated plots produced fresh market yields that were either equal to or greater

than those in plots give commercial fertilizer. For example, cucumber and turnip greens grown in plots treated with composted yard waste produced 56% to 76% more yield than those in the commercial fertilizer check plots. Similar results were obtained from broccoli, cabbage and lettuce.

IMPACT

Master gardeners are gradually changing from high input cultural techniques for producing vegetables and ornamentals to the low-input environmentally friendly techniques being demonstrated by the project. A majority of the gardeners are using composted waste as the major soil amendment in growing crops. Gardeners are also avoiding the application of high rates of commercial fertilizer, which could eventually pollute our ground water.

STAKEHOLDER INPUT

Stakeholders provided input by participating in demonstration projects and field days. At these events participants presented their problems and as a result the project researcher assisted in modeling experiments to help provide solutions to their problems. Additionally, survey questionnaire were distributed to city residents either on a one-to-one contact or when meeting with individual groups. The surveys will be assessed for further possible activities to be incorporated into the project to meet the needs of the District residents.

PUBLICATIONS

James R. Allen. 1999. Low-input Sustainable Agricultural Culture for Urban Gardeners in the District of Columbia. Info Doc. Agri. Exp. Sta. University of the District of Columbia.

James R. Allen. March 2000. Urban Vegetable Gardening in the District of Columbia. Info. Doc. Agri. Exp. Sta. University of the District of Columbia

Key Theme: YARD WASTE/COMPOSTING

The eight-week Certified Master Gardener Program provided hands-on experience for participants to understand the value of composting who learned how to make their own compost. Other sessions included Botany, Soil and Fertilizers, Entomology, Plant Diseases, Pesticides, Plant Propagation, Pruning, Herbaceous Plants, House and Woody Plants, Fruits and Vegetable Gardening and Landscape Basics.

IMPACT: Eighteen qualifying participants were certified as Master Gardeners.

Key Theme: PESTICIDE APPLICATION

Our Agriculture and Natural Resources Specialist was responsible for the **Pesticide Applicator** Trainer program in the District of Columbia. Since his retirement we have not been

able to provide this service, but have started the recruitment process for a part-time ANR Agent to coordinate the Pesticide training program for FY 2001.

Key Theme: WATER QUALITY

TITLE: The Fate and Toxicity of Triorganotin Compounds in the District of Columbia Waterways

"The Fate and Toxicity of Triorganotin Compounds in the District of Columbia Waterways" is a research project investigating sediment uptake and effects of aquatic biota of two classes of triorganotin compounds. These compounds that were commonly used as the active agent in antifoulant marine paints. While use of these compounds have been banned, they still present a serious environmental problem since older pleasure crafts still have these paints on their hulls. Thus, the triorganotins can leach into waterways and become potential environmental problems by being absorbed into the sediments where they can interact with various aquatic species. Therefore, it is essential to understand the speciation of these triorganotin to gain a better understanding of their interactions in the aquatic environment.

Aerobic and anaerobic sediments from several sites in the Anacostia and Potomac Rivers were spiked with tributyl and triphenyltin chloride, bis (tri-n-butyltin) oxide and triphenyltin hydroxide. Mossbauer spectra were recorded for the resultant interactions of the species produced with the various sediments. The Mossbauer spectra of both types of sediments, aerobic and anaerobic, spiked with tributyltin chloride and bis-tributyltin oxide were the same. This suggests that these compounds were converted to the same species, most likely the hydrated tributyltin cation, TBT+. The spectra of all triphenyltin chloride and triphenyltin hydroxide spiked sediments samples were the same, indicating again that these compounds were converted to the same species, in this case, the veletriphenyltin cation, TPT+. Thus, the species that interact with the various sediments are the respective hyadrated cations.

IMPACT

A better understanding of the pollutants and their speciation products, as well as their toxicity to aquatic organisms, will provide individuals and government interested in water quality and planning with a knowledge of the potential hazards of triorganotin compounds.

STAKEHOLDER INPUT

Information is gathered from the Interstate Commission on the Potomac River Basin, the Chesapeake Bay Foundation, the Anacostia River Watershed Society and informal talks and involvement with community residents. The focus of input address the issues regarding the condition of the watershed in and around the various boating marinas and preventive measures that can be taken to reduce pollutional effects.

PUBLICATIONS

Eng, G.,E. Biba, and L. May. Speciation of Some Triphenyltins in the Potomac River. 218th National Meeting of the American Chemical Society, New Orleans, L.A. August, 1999.

Eng. G.,D. Whalen, N. Ogwuru, Q. Duong, and L. May. 2000 International Chemical Congress of Pacific Basin Societies, Honolulu, HI. December 2000.

Key Theme: SUSTAINABLE AGRICULTURE

TITLE: **A Comparative Study of Nodulation in Vigna unquiculata in Symbiosis with Rhizobium or**

"Nodulation in Vigna unguiculata with Rhizobium or Bradyrhizobium After Treatment with Biosolids" is a research project that is trying to (1) determine the species and strains of Bradyrhizobium in soil and to compare its genetic variations and gene expressions with R. freddi, and B. japonicum; and (2) examine nodulation at the cellular level in V. unguiculata grown in symbiosis with R. freddi, B. japonicum and Bradyrhizobium from the soil before and after growth in soil amended with biosolids.

The procedures used during this reporting period continue the initial experiment whereby V. unguiculata was used as the host plant. In the initial experiment, seven genotypes were identified with different DNA patterns from the know Bradyrhizobium strains. Three of the seven genotypes identified also nodulated Glycine max (soybean). Therefore, the genetic diversity of the Bradyrhizobium populations in symbiosis with soybeans were examined and compared with cowpea micosymbionts. Ten different isolates were obtained from the soybean plants. Molecular and cellular comparisons were done on nodules produced by V. unguiculata in symbiosis with Bradyrhizobium that has been grown on biosolids. Box PCR, DNA electrophoresis and light and electron microscopy were used to characterized the nodules.

Electron microscopy was used to examine V. unguiculata and G. max nodules containing Bradyrhizobium isolates. After examination of the nodules from each symbiotic relationship, a comparison was made with nodules formed from symbiosis of Glycine max with strain USDA 6 (highly efficient nodulation with G. max) and USDA 3456 (highly efficient nodulation with V. unguiculata). The three isolates (73-3, 73-28 and 146-11) identified in cowpea nodules grown in biosolid compost also nodulated soybeans. The gross morphology of the nodules from V. unguiculata and G. max were similar. Microscopic analyses indicated the majority of the nodules cells from all three isolates in both V. unguiculata and G. max were infected with bacteriods. In most cases peribacteriods membranes encircled several bacterioids. Findings indicate that the bacteriods produced by all three isolates were similar morphologically.

IMPACT

By determining the most effective Bradyrhizobium strains, it will be possible to use them to improve nitrogen fixation and increase plant yield in Vigna for use in the Washington Metropolitan Area. It is clear that by use of biosolids for fertilizers will save rapidly diminishing landfill space, replenish nutrients removed from the soil during gardening, prevent erosion and increase water retention.

STAKEHOLDER INPUT

This project provided presentations, in collaboration with the Cooperative Extension Service, of the results. Many participants were interested in increasing the yield of cowpeas in their home gardens. More presentations will be given so that participants are given the opportunity to further comment on additional needs this project could address. Some participants commented on identifying and ascertaining the bacterial type of this project and how they could apply techniques for using this bacteria in their gardens.

PUBLICATIONS

Grant, Jean., Beyene, D., Cousin, C., and Berkum, Peter, Vigna unguiculata: Diversity of Bradyrhizobium in Soils in Biosolids Amended Soil. (manuscript in preparation).

Key Theme: OTHER

Programming under the Agriculture and Natural Resources Unit is provided for youth and adults. The Agr In the Classroom and the Project Learning Tree in the City programs are coordinated by a part time staff person. In FY 2000 CES was able to purchase state-of-the-art soil testing equipment, operated by qualified AES staff to provide soil testing customer service. Since many of our citizens have extremely busy lives and desire timely information, much of our urban gardening information and assistance were provided by the CES and volunteer staff through the Internet, hotline calls and through the written word. To increase our integrated program potential and service to our customers, the recruitment of an ANR Program person is a priority for FY 2001.

The **Agriculture in the Classroom** (AITC) curriculum was introduced to five new schools in FY 2000. The Science Consultant for the DC Public Schools helped with the selection of these new schools, encouraging cooperation and participation. Six classroom teachers, three science specialists, three art specialist, one special education specialist, and approximately 775 students were benefitted from this program. They visited the Agriculture Research Center in Beltsville where they learned among many things, what a veterinarian was and did with animals, which sparked career interests. The teachers received many resources, developed curriculums and learned to access the internet for a world of additional information and knowledge to share with their students and fellow colleagues. DC AITC teachers and students were selected for the second year by the Ag Council of America to be involved in National Ag Day and Ag Week held in March 2000. Activities where they were challenged to

think about the role of agriculture in their daily lives and the world of opportunity for their futures. The respect resulting from the work that our AITC staff has done with this program brought request for her as a workshop facilitator at the National AITC Conference.

Our **Project Learning Tree (PLT) in the City** was in the beginning stages in FY 2000, providing expansion of the program in the nation's capital with two workshops and twenty-two participants. The project has made strides toward advancing the quality of environmental education throughout the District of Columbia. We have built a partnership with the American Forest Foundation in bridging the classroom to the community through PLT in the City educational workshops and hands-on community action projects. The excitement experienced by both the teachers and students have made this an easy program to sell with our program coordinator providing outstanding leadership. She was again a presenter at the National Project Learning Tree Conference.

IMPACT

Both District youth and adults gained knowledge, information and skills toward improving their quality of life.

Source of Federal Funds - Smith Lever

Scope of Impact - State Specific

GOAL 5: TO ENHANC ECONOMIC OPPORTUNITIES AND THE QUALITY OF LIFE AMONG FAMILIES AND COMMUNITIES

Key Theme: Community Development

Programming for the Community Economic Development Program, Center for Cooperatives and the Home-Based Business Program began with the hiring of our Community Resource Development Specialist in the fourth quarter of FY 2000. The need for community development assistance is great and has demanded much time and effort to make available these services to District customers. The Specialist began the process of redeveloping business relationships and public/private partnerships to support the program, which included eight certified Community Development Corporations who provide business development assistance to District residents interested in establishing and/or expanding businesses in DC. The CRD Specialist reviewed an average of ten articles per week and collected and made available listings of 50 articles to the 8 certified community development corporations and private business groups in the District. He provided a mini-course on **Business and Community Development** to

sixteen persons in their new business program at the Redemption Ministry and five at the Anacostia Economic Development Corporation.

The need for low-cost and/or basic skills knowledge for Home Repair has been in high demand in the District of Columbia. Our Community Resource Development-Technical unit conducted 65 Basic Home Repair Workshops for the Washington Lifelong Learning Center for 830 participants. They were a major component of the Marshall Heights Community Development Organization's Home Buyers Preparation Program, providing invaluable information and hands-on training to fifty homeowners in basic home repair and energy conservation. We had an advance training program currently with forty participants, called the "Working Homeowner's Program," which provides step-by-step instructions in repairing and replacing items throughout the home.

The CRD-Technical unit has provided **Basic Home Repair and Energy Conservation** at various sites throughout the city. They conducted 35 Weatherization Inspections for PEPCO in our partnership to provide energy conservation measures for homes of low-income families and senior citizens in the District and gave free Radon Kits to all participants. A total of 5000 **Healthy Indoor Air Quality** information and/or radon kits were distributed at programs or mailed to District residents.

Key Theme: Workforce Preparation

Our Home Repair and Energy Conservation program at the Center for Community Non-Violence (CCNV) provided skills training to forty homeless shelter residents. These participants in turn gave back to the community by providing home repair services learned, by utilizing their new skills. Some members were able to secure employment in home maintenance.

IMPACT

The Home Repair and Energy Conservation training has saved home owners and renters $40-$800 each, while affording some participants opportunities to gain employment through the knowledge and skills gained.

Mr. Tony Edwards, a participant under the CCNV program was hired as a live-in maintenance person at an apartment complex near Georgetown after successfully completing the Basic Home Repair series. Mr. Edwards sent a letter of appreciation to the CRD-Tech staff to thank them for the knowledge and confidence he gained from the training and mentoring he had received through the program.

Mr. Willie Jackson, another resident was placed in the maintenance department of the shelter. He is in charge of receiving the repair request and assigning workers to correct the problem.

Mr. Larry McCoy, while already possessing some electrical skills, after taking our workshop series he volunteered to build an electrical display module, which he used as an example of his ability and was hired to be an Electricians' Helper for a company building a hi-rise apartment complex on 22nd and Pennsylvania Avenue.

Key Theme: Consumer Management/Family Resource Management

In FY 2000, the Family and Consumer Sciences unit provided programming to District youth and adults in **Consumer Management** and **Family Resource Management**. Our consumer education efforts are directed to youth involved the **LifeSmarts** program. LifeSmarts is designed to educate 9-12 grade youth about real-life consumer and marketplace issues in a game show format. The program was felt to be so valuable to our students, that the FY 2000 DC winning team members, who were 9th graders who later graduated from Browne Junior High School, but still wanted to remain a team unit, persuaded one of the parents to be their coach so they could compete together again in 2001.

The major **Family Resource Management** program for FY 2000 was our High School Financial Planning Program (HSFPP), a national program sponsored by the National Endowment for Financial Education (NEFE). The HSFPP is a seven-unit course that acquaints students with basic financial planning concepts and illustrates how these concepts apply to everyday life. The knowledge learned by the students had a trickle down effect when they began sharing their skills and information with other students and their individual families. A team of volunteers from the financial community was recruited to train teachers from our public and charter school community in preparation for them to provide this program at their schools.

Key Theme: Children, Youth and Families at Risk

DC READS is a literacy program in which tutors are paired, one on one with elementary school students to increase reading skills, for those children in grades 1-3 who scores below the national average on the Stanford Nine Test. The DC READS program was coordinated by the Family and Consumer Sciences Agent. This program was one of our efforts toward assisting the **Children, Youth and Families at Risk** in the District.

IMPACT

One hundred-twenty students and twelve teachers completed the HSFPP. More than 100 District youth logged in on the Internet to test their consumer skills in the National LifeSmarts program, with 35 youth actually completing the program and moving on to become teams who then competed in the DC State Competition.

Tutoring training was provided to 27 UDC students who in turn tutored 78 District youth in grades 1-3.

Source of Federal Funds - Smith-Lever

Source of Impact - State Specific

Key Theme: 4-H and Youth Development

The goal of the **4-H and Youth Development Program** continues to develop youth to become productive, responsible, contributing citizens. We recognize the tremendous possibilities that lie within the D.C. Public School System to achieve this goal. Through our partnership with the school system, we worked to establish a 4-H presence through a project called the ***100 CLOVERS PROJECT.*** The project seeks to establish 100 new 4-H clubs within the D.C. Public School System between the 2000-2001 academic years. Thus far, the relationship between UDC 4-H and the school system has been sanctioned by the university and by the public school administration. We are working with the school superintendent, principals, teachers, counselors, and teaching assistants. We have established contacts at every level of administration that touches students in the District of Columbia, including the newly elected President of the Board of Education. This partnership has proven quite fruitful. To date, we have met nearly 50% of our goal. Thus far, we have trained 45 new volunteer leaders and have established 42 new 4-H clubs in D.C. Public Schools.

The 4-H clubs are after school clubs whose emphasis varies from generalist clubs to science and technology, communications, horticulture and agriculture, to public speaking, foods and nutrition, and leadership. All of the clubs are engaged in community service activities. Elementary and middle school clubs are engaged in one community service project in particular, called ***Project Happy Hats***, where they make, decorate, and donate hats to sick children in area hospitals. Currently one middle school 4-H club is being considered for the Congressional recognition for its community service activities using the Happy Hats Project.

One problem that confronts our community in the Nation's Capital, is disease and conditions associated with tobacco. Heart disease and certain forms of cancer remain the leading causes of death among African Americans and Latino Americans. UDC 4-H has become a demonstration site for a national curriculum for youth. The project, ***HEALTH ROCKS*!**, is a national smoking prevention and health promotion project. High school 4-Hers team up with middle school 4-Hers to teach the six-party curriculum to youth between the ages of 8 and 12. In the year 2000, UDC was awarded a $10,000 grant to become a demonstration site (one of eleven such sites in the country), to deliver the project. Thus far, 14 out of 20 youth have been recruited and trained to deliver the project. In the spirit of youth-adult partnerships, one youth project director (a high school 4-Her and president of her club), was trained to work with the Project Director, to recruit sites and to train and deliver the project to the youth in 8 wards of the city.

The project is taught in after school 4-H clubs and youth programs within District of Columbia Public Schools.

Two other major accomplishments in the 4-H/Youth Development Unit that occurred in FY 2000 included the ***UDC 4-H Summer Computer Camp,*** where 20 youth were taught basic computer and internet skills by college student volunteers in a UDC computer lab over a 4-week period. The 4-H Summer Camp was offered free of charge to youth between the ages and 8 and 17. At the completion of the camp, youth and their parents stated that the youth were able to use computer skills to complete their school work and in extra curricular activities; they had no prior experience with computers before their camp experience.

Another activity was the ***UDC 4-H City Fair,*** entitled "***4-H In the City.***" The City Fair brought together 4-H partners such as the business community, politicians, USDA, the UDC Administration, 600 youths from all points in the city, various youth-serving organizations, the Department of Parks and Recreation, and others, for the purpose of showcasing 4-H Clubs, activities, and projects. The fair was the first fair of its type held on the campus of the university to reintroduce the city to 4-H and its programs. The fair will be an annual event.

IMPACT

The 4-H and Youth Development program has impacted more than 1500 District youths and 44 Adult Volunteers. We have 400 new club members and 5 student Interns leading special grant project activities.

The impact of UDC 4-H activities is evident in customer comments such as, "...my child is more confident, self-assured, and doing better in school because of her 4-H club involvement." Young people who participated in 4-H activities either as club members, or as youth "touched" by club members in the community or in their schools, are able to speak publicly without being shy, or intimidated. Those who did not have exposure to the 4-H mission and value set report that they now value their communities and the contributions they make to those communities and to their families. Many report being able to affect the foods purchased for the family as a result of a nutrition experience they'd had through their 4-H club. Others report being able to make helpful suggestions to family members about the improvement of their health or lifestyle quality, due to information they acquired through a 4-H project or activity.

Source of Federal Funds - Smith-Lever and Grant Funding

Scope of Impact - State Specific

Success Stories

$ Thirteen-year-old Charnice Milton, a member of the Covenant 4-H Club, saw a need in her Southeast Washington community. In Charnice's neighborhood, she

saw 17-year-old grandmothers. As a 4-Her, Charnice decided that through her club, she and other club members could help. Help, they did. Barely a teenager herself, Charnice put on the full coat of leadership armor. She wrote and received a $2,500.00 grant from the Kraft Foods Company to teach the teen mothers how to care for their children by improving their nutritional practices. She had observed that there was a growing need for supermarkets in the community and that these teenage moms might benefit from learning to grow their own food, thus, become more independent and begin to make more sound food choices. Through Charnice's club, teen mothers volunteered at the Urban Oasis Community Garden and at the Church Association for Community Services Food Bank. In exchange for their volunteer efforts, they received free of charge, food, nutrition gardening education, hair and nail care, transportation to and from the garden and food bank, and pre and post natal care and support. To date, Charnice's leadership and proactive stance, provides a sense of encouragement for her peers. Other members of her club now speak publicly without the fear they previously felt when speaking before large groups. Following her experience with her project "***Project Mary***", Charnice has represented UDC 4-H in other leadership roles including becoming a peer educator in the Health Rocks! Project, where she teams with high school 4-Hers to teach 8-12 year olds smoking prevention and health promotion. She has been featured in local and National newspapers and on national television, through her 4-H involvement.

$ Greisy Fledi came to the UDC 4-H and Youth Development Program through her high school club just one short year ago. A shy demure, young lady, unwilling to speak before large groups, she possessed a kind of quiet confidence. Through her 4-H work, she is now president of her club, the project director for the Health Rocks! Project and a peer educator in that project. She has been an ambassador of sorts, representing UDC 4-H all over the city, and wherever she might tread. She has been a leader in the D.C. delegations to the National 4-H Congress (where she took an active role in 1999) and into the National 4-H Conference. Because of her savvy and 4-H knowledge, she has served on national boards and design teams for national programs and projects. On a daily basis, Greisy connects with teachers and their students to train potential peer educators for Health Rocks! She also travels to other public school after-school programs to sell the 4-H mission and value set. Her talents are evident in her academic achievements as well. Although she is only a high school senior, she takes freshman courses at Georgetown University as an enrollee in the High Skip Program. She has been accepted to Temple University, and is on track to becoming one of Georgetown University's shining stars in the freshman class that will enter college next year. To date, she has received two academic scholarships, and will probably receive others. When interviewed by the Georgetown alumnus' member of the selection committee, she was reported to be "passionate about her work." He also described her as "giving her all to real extra curricular activities that makes a difference in the

community." The interviewer said, that Greisy's 4-H work was both "impressive and meaningful." Because of her Dominican Republic roots, Greisy has been an invaluable resource for getting the 4-H message out to the Hispanic community. Greisy Fledi is the shining example of what 4-H stands for in the Nation's Capital.

$ A 4-Her in the Roosevelt Communications 4-H Club, Donald Despert was part of the D.C. delegation to the National 4-H Conference in 1999 and later was asked by the CEO of the National 4-H Council to join the ranks of other 4-Hers recruited from across the country, to sit on a judging panel for a national design team. Donald's input was poignant and helped the group to see itself and its work from a larger perspective. As a high school student at Roosevelt Senior High, in D.C., Donald's academics were nothing less than stellar. He received a full scholarship to Georgetown University, where he attends school as college freshman today. We cannot take credit for Donald's motivation as an overachiever. We do attribute his presentation and communications skills in part, to much of what he learned as a 4-Her. He says that "4-H changed his view on the world, helped him to expand his mind power, and taught him to reach for the stars!"

UDC CES Stakeholder Input Process

Our new stakeholder input process was begun by the Dean/Director of the Community Outreach and Extension Services (COES) Division. He developed a working relationship with the elected City Council members representing each of the eight Wards of the District of Columbia. Councilmembers were asked to recommend two representatives from the eight Wards. Each Ward was assigned a COES Liaison. The COES Liaisons are professional staff members who include the Dean, and the Associates Deans from AES and CES and work closely with their staff and the community to provide the needed educational and research services.

The stakeholder input helps us to identify program needs and program enhancements to better serve residents. There is a great need for skills training for employment, basic financial management, effective consumer skills and parent education. This information helped in the advisement of both job hiring and program development for our FY 2001 plans. Each CES program unit also uses Coalitions, Advisory Committees and/or interdisciplinary and multi-state collaborative efforts.

Program Review Process

At this time CES has not established a merit review process, but will be developed that during FY 2001.

Evaluation of the Success of Multi and Joint Activities

Nutritional Risk and Antioxidant Status In The Elderly

Major nutrition related diseases, such as heart disease, cancer, diabetes, hypertension, and stroke manifest themselves in the senior years. Moreover, there is a need to identify poor nutritional status, including nutrient deficiency, under nutrition, and nutrient excess. Research is required in order to obtain an understanding of the role that knowledge and attitudes play in determining dietary and other health related behaviors. With this information, effective public health interventions can be developed to improve food choices, promote health, and reduce risk of chronic disease.

FUND: Hatch MU

Post Harvest Physiology of Fruits

Identify fundamental physiological, biochemical and genetic phenomena that will be useful in developing improved technologies, as well as, investigate practical applications of new knowledge to solve post harvest problems.

Evaluation of Turfgrass Cultivars

- S Evaluate turfgrass varieties, marketed to grow in shade, for turfgrass quality and performance.
- S Evaluate the performance and turfgrass quality of twenty-eight varieties of bluegrass, fescue, and different turfgrass blends adapted to grow in sunny areas.
- S Evaluate insect, disease, and weed susceptibility of the turfgrass varieties/blends.
- S Expand the turfgrass variety evaluation program with the most promising varieties and blends suited for the Washington, DC area.

Sustainable Agriculture

To promote the use of sustainable agricultural practices by training home gardeners and agricultural professionals in sustainable agricultural methodologies and techniques. The establishment of an intercropping system will maximize the productive capacity of garden plots while the intercropping system will extend the growing season.

Integrated programming by CES and AES has made it possible for the expansion of educational services for District residents, despite our financial and human limitations. Through

integrated programming efforts AES research results are made available to District customers by CES. This resulting information and education assists in empowering customers to produce healthy and aesthetic home and community environments.

The CES Nutrition, Diet and Health unit integrates the research results of AES through our program with Senior Sites, the DC Office on Aging network, our Annual AES/CES Nutrition Demonstration Fair held at our research farm, and to the general public.

Urban gardening and turfgrass information and assistance needs of the District residents have been provided by the integrated efforts of AES' major researcher and CES temporary and volunteer staff. To increase our integrated program potential and service to our customers, CES has made the hiring of highly qualified staff to replace ANR retirees a priority for FY 2001. In FY 2000, CES was able to purchase state-of-the-art soil testing equipment, operated by qualified AES staff to provide this requested customer service. The District of Columbia's Mayor has asked our Division to assist with this priority of *Building and Sustaining Healthy Neighborhoods,* which includes the agricultural rebuilding of communities throughout the city.

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Appendix 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
(Attach Brief Summaries)

Institution: University of the District of Columbia
State: District of Columbia

Check one: _____ Multistate Extension Activities
__X__ 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	FY2004
Postharvest Physiology of Fruits	50,074				
Nutritional Risk And Antioxidant					
Status in the Elderly	132,377				
Evaluation Of Turfgrass Cultivars	27,675				
Sustainable Agriculture	17,432				

Total **227,558**

Form CSREES-REPT (2/00)