

# R&PS RESEARCH AND PUBLIC SERVICE NEWSLETTER

UNIVERSITY OF THE VIRGIN ISLANDS

Volume 6, No. 2

News from the UVI Research and Public Service Component

JUNE 2003

## REACHING OUT TO THE HISPANIC COMMUNITY

FUNDAMENTALES DE PEQUEÑAS EMPRESAS, DESARROLLANDO UN PLAN DE NEGOCIO\*

*\*SMALL BUSINESS FUNDAMENTALS, DEVELOPING A BUSINESS PLAN*

In March, 2003, the Small Business Development Center presented a series of training topics that targeted the Hispanic-speaking population, particularly on St. Croix. This program is being implemented to reach a community sector that has previously been untapped and yet makes up approximately 40% of the small business owners on the island.

Presented by Ms. Carmen Acevedo Adams, the interactive audience concentrated on a "hands-on" discussion (fully in Spanish) regarding the reasons one might want to be an entrepreneur, stressing the creation of ideas and need for constant up-front research to make those ideas feasible. Specifically, the session stressed the basic steps required to develop a business plan as a guideline to be assured of success.

Future topics for this training series will include hands-on budgeting and financial analysis, and record keeping through Quickbooks.

RADIO NEWS ON INTEGRATED MODEL FARM DIRECTED AT SPANISH AUDIENCE

Victor Almodovar, an agricultural aide at the Agricultural Experiment Station's (AES) Integrated Model Farm (IMF) project, recently arranged an interview between UVI Integrated Model Farm personnel and Radio Latino 98, Castle Coakley, Christiansted, whose broadcasts reach all of the U.S. Virgin Islands as well as Vieques and eastern Puerto Rico.

Yvonne Daly Canos-Cruz, a colorful local radio personality, invited Victor and Michael McGuire, the Farm Manager, to the station for the interview. Over the course of the hour-long interview, the two UVI employees spoke about the University's history of agricultural research and the IMF project. The project is being developed by AES with support from a grant from the USDA Initiative for Future Agriculture and Food Systems (IFAFS) Program. The project is a cooperative effort between AES, Cooperative Extension Service, Water Resources Research Institute, V.I. Department of Agriculture, University of

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## UVI AGRICULTURAL FORUM LEAVES FARMERS 'EXCITED AND HOPEFUL'

More than 130 local farmers packed into the University of the Virgin Islands' Melvin Evans' Theater on St. Croix, to attend a two-day agricultural forum, April 22-23, 2003, to discuss the future of agriculture in the territory.

With the theme, "Prospects for Sustainable Agriculture in the V.I.," the forum addressed several important issues for a sustainable agriculture industry: (1) production, marketing and agri-markets; (2) education outreach and research; (3) funding; (4) water for agriculture, and farmers' perspectives; and (5) assessment of the territorial

agricultural policy.

According to Kwame Garcia Sr., Director of UVI's Cooperative Extension Service, "the agricultural forum represents an effort by local farmers and agricultural experts to address issues that will revitalize the agricultural industry." The forum, he said, also presented an opportunity for both farmers and agricultural experts to develop initiatives for securing the future of agriculture in the territory and to look at the current agricultural policy and add revisions where needed.

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# FORUM FOCUSED ON DEVELOPING INITIATIVES TO REVIVE THE V.I. AGRICULTURE INDUSTRY

*Continued from p. 1*



*Farmers listen to speakers at UVI St. Croix campus during the Agricultural Forum*

The keynote speaker, Lawrence Lucas, President of USDA Coalition for Minority Employees, excited the group with his presentation. He said that helping small and disadvantaged farmers to continue working the land is an important struggle that involves preserving culture and preserving the farming way of life.

"If we can sustain the rebuilding of other countries, we must demand that our country do the same for us," he said. Lucas also urged farmers to form cooperatives by sharing equipment, and marketing techniques, and by engaging in bulk purchasing. He added that product processing and packaging can help farmers sustain their livelihood. "We can ill afford to leave black farmers behind," Lucas said. "The destiny of black farmers is in our hands."

A special presentation entitled an "Overview of Marketing and Production: The St. Kitts Model" was given by Cedric Liburd, Minister of Agriculture, Fisheries, Cooperatives, Lands and Housing in St. Kitts. In his presentation, Mr. Liburd said that St. Kitts' Department of Agriculture has instituted a training program for farmers. Additionally, the Department has instituted a marketing program and has arranged for the island's local hotels to purchase all



*Dr. Thomas Zimmerman, UVI Research Assistant Professor, explaining his papaya research project to forum participants*

of their produce from the local farmers.

Dr. Terry Nipp, President of AESOP Enterprises, Ltd., discussed access to federal funding for agricultural development, and Dr. John Mayne, Assistant Director, Southern Region SARE, provided information on the sustainable agriculture research and education program and grants for farmers.

Other sessions included presentations by Dr. Richard Moore on the need for reliable agriculture statistics and Commissioner of Tourism Pamela Richards on agri-tourism. Rev. Eddie Williams discussed the Role of FFA in agricultural development, Dr. James Rakocy on agricultural research, and Mr. Kwame Garcia, Sr. on agricultural extension and outreach.

On Wednesday, April 23, the session began with the potential sources of water for agriculture. Alex A. Moorhead, HOVENSA's Vice President of government affairs and human resources, stated that the refinery is prepared to supply water if available to the Department of Agriculture for distribution to farmers during periods of drought. Representatives from V.I. Water and Power and St. Croix Renaissance Group also spoke to farmers on the potential sources of water for agriculture.

Farmers such as Kendal Petersen from St. Croix Farmers in Action; Elridge Thomas from We Grow Food, Inc.; Kiko Gasperi from the St. Croix Senepol Association; Sheila Shulterbrandt, St. Thomas Livestock Association and Mrs. Rosalia Drew gave their perspectives and recommendations on the need to for a sustainable agricultural industry in the Virgin Islands.

Dr. Henry Smith, UVI's Vice Provost for Research and Public Service, moderated the session to assess the Virgin Islands' agricultural policy. Four separate groups discussed legislative policies, infrastructure development, production and marketing and education and research. Group reports and recommendations will be compiled and be available for shaping future agricultural policy and other uses.

According to organizers, the agricultural forum was a tremendous success. Kendall Petersen of St. Croix Farmers in Action and a forum committee member, said it best: "There will be more forums in the future and this forum has only scratched the surface of the issues that farmers and fishermen are facing." He said that those who took part were excited and hopeful for the future of agriculture.

The agricultural forum was sponsored by UVI's Cooperative Extension Service in partnership with UVI's Agricultural Experiment Station, V.I. Department of Agriculture, St. Croix Farmers in Action, Southern Rural Development Center and USDA Natural Resources Conservation Service.

For additional information on the forum, contact Mr. Kwame Garcia, State Director of the Cooperative Extension Service at (340) 692-4091 or [kgarcia@uvi.edu](mailto:kgarcia@uvi.edu).



Ms. Yvonne Horton, UVI Employee of the Year

## RPS STAFF RECEIVES UVI EMPLOYEE OF THE YEAR AWARD

Research & Public Service (RPS) is proud to have one of its employees honored as recipient of the UVI Employee of the Year Award. Ms. Yvonne Horton, Administrative Specialist I at the Agricultural Experiment Station (AES), St. Croix campus, received the Employee of the Year Award on April 10, 2003 during the UVI Service Award Ceremony.

Horton has been employed at AES for 22 years, starting as Secretary I in 1981, and worked her way up to Administrative Specialist in 1998. Every year she has received excellent performance evaluations.

With the increased activity and expanded projects on special grants at AES, Horton has steadily assumed greater responsibility to meet the ever increasing challenges of her position. She provides administrative assistance in all areas of AES, for example, assisting in the organization of meetings and conferences sponsored by AES, including collecting registration fees, sending out announcements and coordinating all personnel actions for AES—a unit with 39 employees.

According to Horton, she insures that all reports are submitted electronically to the appropriate federal agencies, and has sole responsibility for tracking all AES research projects during their 3- to 5-year life. Additionally, she also communicates with funding agencies in Washington, D.C., and attends USDA administrative meetings.

During her 22 years of service to AES, Horton has witnessed a period of sustained expansion in programs, facilities, personnel, funding and output. As the complexity of administering AES increased, she rose to the challenge and developed professional skills to maintain an efficient and effective administrative unit.

"I am very honored and appreciative in getting this award," Horton said. "My years of service at UVI have been highly rewarding."

## 'MIRIAM'S KITCHEN'

As one steps inside the Research and Extension Center it does not take too long to notice that something good is cooking. The aroma leads everyone into "Miriam's Kitchen." This kitchen is a special place not only for those of us who can always get something to eat, but for persons of different background who want to eat and live a healthier lifestyle.

In "Miriam's Kitchen," the food pyramid is the centerpiece of the table. Miriam uses this as the cornerstone for her health and nutrition classes. Each week, classes and hands-on demonstrations focus on one food group—from baking whole wheat bread to making healthy snacks.

March was a particularly exciting month, as the Expanded Food and Nutrition Program (EFNEP) joined other health agencies in observing National Nutrition Month. This year, the focus was on preparing vegetarian meals. EFNEP nutrition workshops emphasized healthy food substitutes and taught participants to make such vegetarian dishes as tofu lasagna, soy milk drink and veggie burgers.

The Expanded Food and Nutrition Program (EFNEP) is designed to assist individuals in acquiring the knowledge, skills, attitudes, and changed behavior necessary for nutritionally sound diets, and



Lulah Lynch of Specialist Health Store and Deli demonstrating how to prepare stewed tofu

to contribute to their personal development and improvement of the total family diet and nutritional well-being.

Eating right can be something done without much fanfare, and only needs careful planning. To learn more about the EFNEP call (340) 692-4094. Enjoy the vegetarian recipe listed below.

### Vegi Burger

- |                                   |                          |
|-----------------------------------|--------------------------|
| 1 pound black eyed peas or lentil | 2 teaspoons soy sauce    |
| 1/4 cup onion, finely chopped     | 1/2 teaspoon ground sage |
| 2 sprigs thyme, finely chopped    | oil for frying           |
| 3 carrots, grated                 | Avocados, mashed         |
| 1 teaspoon garlic powder          | Alfalfa sprouts          |
| 1/4 cup parsley, finely chopped   | Tomatoes, chopped        |

1. Soak black eyed peas or lentils overnight in 1 quart water. Drain water and blend peas in food processor or blender. Do not cook.

2. Chop vegetables and seasonings; add to black eyed or lentil peas.

3. Spoon batter on lightly greased grill or frying pan to make 6 five inch circles. Fry on both sides until brown. (To bake: flour patties and place on greased baking pan and bake at 350 F.)

To serve: Cut circles in half. Use the burger as bread to hold filling of your choice. To do this, spread one side of one half vegi burger with mashed avocado. Top with alfalfa sprouts, chopped tomatoes, or fresh vegetables of your choice. Place other half of vegi burger on top of vegetables and serve.

Each burger (without vegetables) provides:

Calories 136, Fat 3g, Protein 7g, Carbohydrates 22g, Sodium 125mg, Cholesterol 0mg

## SHOW HIGHLIGHTS IMF

*Continued from p. 1*

Guam, University of Puerto Rico and the USDA Agricultural Research Service Tropical Agriculture Research Station in Mayaguez, PR.

McGuire discussed the objectives for the farm, which are to integrate aquaculture, fruits, vegetables, and livestock production on 5 acres of land and to develop systems that will have gross annual revenues of over \$100,000. A rainwater catchment will capture rainfall that will be used for the fish tanks and crop irrigation. Waste from the

fish production will be used to fertilize plants, and small livestock (sheep or goats) will graze the fallow plots between crop plantings.

Currently the farm is in the building stage, but when it is completed later this year tours will be given so that farmers can see the integrated system in operation and learn about the potential for it's application in the Virgin Islands. By demonstrating the integration of these crops and practices it is hoped that local farmers will adopt the concept and use it to enhance their efficiency and improve their financial outlook.

# CMES BRINGS NOTED CORAL RESEARCHER TO UVI CAMPUSES



Dr. Betsy Gladfelter, left and inset above, lectures about the importance of elkhorn coral at the UVI Maclean Marine Science Center in St. Thomas



Dr. Betsy Gladfelter presented "*Acropora palmata* (elkhorn coral): the catastrophic decline of the giant of the Caribbean" to standing-room only crowds at UVI campuses in both St. Croix and St. Thomas. The presentations, which took place on February 11 in St. Croix and February 26 in St. Thomas, were organized by the Virgin Islands Marine Advisory Service (VIMAS) of the Center for Marine and Environmental Studies (CMES).

Thanks to VIMAS, the lectures were well publicized with flyers and through local newspaper and radio. Attendance exceeded expectations, but UVI staff quickly provided extra seating. Students, government employees, members of the media, a member of the VI Legislature, UVI staff, and other community members attended to learn about the importance of elkhorn coral in reef construction and ecology, as well as the decline of elkhorn coral in the past and the threats this coral

may face in the present and future.

*Acropora palmata*, the elkhorn coral, has a massive form whose outspread branches can exceed 7 meters. It is the dominant shallow water reef-building species in the Caribbean. It plays a major role in reef construction and evolution, protection of shorelines, and its branches create a complex habitat harboring many important reef organisms including fishes.

Because of its decline in the past 30 years, the NOAA Office of Protected Resources is considering placing it on the endangered species list. When studies of various aspects of the biology, ecology and geology of this coral began in the 1970s, ten square km of shallow windward reefs on the eastern portion of St. Croix were "*Acropora*-dominated reefs." No reefs in the area can be considered that way today.

In the late 1970s, on portions of Buck Island Reef, this coral had a live coverage exceeding 60%; Teague Bay Reef had about 50% live cover, while the south shore reefs had live coverage of up to 35%. Re-surveyed in 2002, these regions had about 1% live coverage, with isolated patches having up to 3.6% cover.

White-band disease, described and its effects hypothesized in the late 1970s, was the primary cause of the mortality of this important coral species, although repeated hurricanes, predators and other factors have contributed to maintaining

the low live coverage presently seen on Virgin Island reefs.

However, researchers in St. Croix as well as elsewhere in the V.I. are encouraged by their recent observations that show a number of new, healthy young elkhorn coral colonies in many areas. It is suggested that this species might possibly recover to its former dominance, if these populations continue to grow over the next several decades in the absence of repeated stressors such as hurricanes, increased water temperature or land-based threats such as sediment run-off.

Dr. Gladfelter is a long-time St. Croix resident and was a scientist at the West Indies Lab in St. Croix from 1974 to 1990, becoming director in 1988. She was instrumental in documenting the decline of elkhorn coral in the Virgin Islands through the late 1970s and early 1980s. Enthusiastic and athletic, she inspires others to explore the natural world.

Dr. Gladfelter is currently a Guest Investigator at the Marine Policy Center of Woods Hole Oceanographic Institution in Massachusetts and has recently published a book entitled *Agassiz's Legacy: Scientists' Reflections on the Value of Field Experience* (Oxford University Press, Oct. 2002).

Thanks to Marcia Taylor and Sera Harold at VIMAS in St. Croix and Mayra Suárez-Vélez at VIMAS in St. Thomas for making these events possible.

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# TAKE THIS AND CALL ME IN THE MORNING:

## AES CONDUCTS FIELD DAY/ WORKSHOP ON MEDICINAL PLANTS

Last December, Rattan Herb Tea Garden, Estate Rattan, St. Croix, was the venue for conducting a field-day and workshop on medicinal plants and culinary herbs organized by the AES Vegetable Crops Program. There were more than 30 attendees; and the purpose of this activity was to educate participants on the potential uses of local and indigenous medicinal plants; their cultivation and growth characteristics. Some of the participants are already involved in small-scale herb businesses and were interested in expanding their enterprises.

The field-day segment exposed participants to the research plot where medicinal plants are grown in an alley cropping/ agroforestry system with Moringa – a popular medicinal tree with multiple uses in the tropics. Other medicinal plants on site included Japana, Worrywine, and Inflammation Bush. The attendees also viewed some of the culinary and aromatic herbs intercropped with Moringa. Common herbs included Lemongrass, Sweet Marjoram, Thyme, Sage, Basil, Chamomile and Rosemary. Brian Becker, a graduate student from the University of Florida, explained the objectives of the agroforestry research with medicinal plants. Becker was able to elaborate on this issue as it forms part of his master's thesis.

The workshop was hosted by Infee Coville – a project coordinator involved in small-scale processing of medicinal herbs. Dr. Manuel Palada, Research Associate Professor and Project Leader, described the growth; medicinal uses; cultivation; harvesting and processing of various medicinal plants in the Virgin Islands. Jeanmarie Mitchell, Research Analyst, demonstrated methods of growing; caring for; and managing transplants. Jacquiel Dawson, director of Project Bush Tea, an invited speaker from St. Thomas, presented information on the preparation of herb and bush tea. The workshop culminated with actual demonstrations of how to prepare Noni juice, Noni oil and tea by Infee Coville.

The participants did not only leave these sessions with additional knowledge of the medicinal plants and culinary herbs, but also samples thereof. Each participant received Noni juice, Noni oil and transplants of various culinary herbs.

There was positive feedback in the



*Top: Infee Coville is shown pouring some Noni oil into a bottle for workshop participants to take home for their personal use*

*Bottom: Jacquiel Dawson talks to the workshop attendees about the preparation of herb and bush teas*

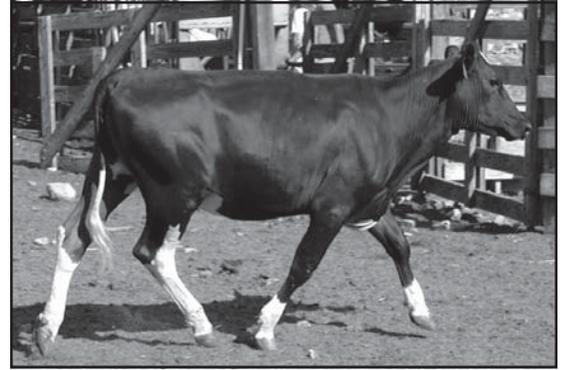
workshop evaluation. The participants indicated that they would like to have more activities similar to this activity. There was also the expressed desire to encourage the formation of a St. Croix Herb Society where members can share and exchange information about medicinal herbs.

The field-day and workshop were co-sponsored by the UVI Cooperative Extension Service and the V.I. Department of Agriculture.

For more information contact Dr. Manuel C. Palada, (340) 692-4086 or [mpalada@uvi.edu](mailto:mpalada@uvi.edu).

# DAIRY COWS HAVE "HOT HAIR DAYS"

"THE CARIBBEAN REGION IS KNOWN FOR ITS HIGH TEMPERATURE AND HUMIDITY AND THE U.S. VIRGIN ISLANDS IS NO EXCEPTION TO THESE FEATURES. THUS, THE HOLSTEIN CATTLE ARE SUSCEPTIBLE TO HEAT STRESS, WHICH CAN NEGATIVELY IMPACT THEIR REPRODUCTION AND MILK PRODUCTION."



*These two Holstein heifers have different percentages of black hair coat. The heifer on the left has 24.2% black hair and the heifer on the right has 90.9% black hair*

Dr. Bob Godfrey, Animal Science Program Leader, is participating in a multi-state research project to evaluate the effects of heat stress on dairy cattle (S-299 - Enhancing Production and Reproductive Performance of Heat-Stressed Dairy Cattle). One aspect of the research being conducted by Dr. Godfrey and his staff is evaluating the effect of hair coat color on the level of heat stress experienced by Holstein dairy cattle on St. Croix.

The contrasting coat pattern of the black and white Holstein cows are a common site on the dairy farms of St. Croix. Unlike the red Senepol beef cattle, which are a tropical breed, Holstein is a breed that was developed in more temperate regions of the world. The Caribbean Region is known for its high temperature and humidity and the U.S. Virgin Islands is no exception. Thus, the Holstein cattle are susceptible to heat stress, which can negatively impact their reproduction and milk production.

Holstein heifers at Mt. Mint Dairy farm on St. Croix that were bred by artificial insemination were used for this project. The percentage of black hair coat for each heifer was determined using digital photos of the right and left sides of the heifers and image analysis software. In addition to coat color, the surface temperature of the black and white hair coat on each heifer was measured using a hand held infrared thermometer. Rectal temperatures of the heifers were measured using a digital veterinary thermometer every other day for a 30-day period after AI during the spring (April-May) and fall (September-October). Environmental conditions (temperature and relative humidity) were monitored daily during the periods of data collection using data loggers. Ms. Okesiha Isles, a UVI Research Initiative for Scientific Enhancement (RISE) student working in Dr. Godfrey's lab, assisted with the data collection and presented the data as a poster at the First Annual Spring Symposium of the Emerging Caribbean Scientists held on the St. Croix campus in March 2003.

The dark heifers (more than 50% black hair) had higher rectal temperatures and lower pregnancy rates than the light colored heifers (less than 50% black hair). The surface temperature of black hair on the heifers was 7° F higher than the surface temperature of the white hair. Based on environmental data collected for this project the temperature-humidity index (THI) was 77 in the spring and 80 in the fall. Since heat stress in livestock is defined as any time the THI exceeds 72, the heifers were under conditions of heat stress during both times of the year. The elevated THI in conjunction with the higher rectal temperatures of the darker-colored heifers would place them under a higher level of heat stress their the lighter-colored counterparts.

Analysis of historical data from a dairy farm on St. Croix did not detect a strong relationship between coat color and milk production in Holstein cows. After analyzing the environmental data from the recent project it appears that dairy cattle on St. Croix are under some level of heat stress throughout the year. Therefore, any variations in coat color may not be able to totally overcome the negative effects of high environmental temperatures on milk production or reproduction. However, the careful selection of dairy cattle with less black hair could decrease the magnitude of heat stress experienced by these animals, and thereby enhance their reproduction or milk production.

As part of a multi-state research project, data is being collected at several states in the southeast US to supplement the data being collected in the USVI. The relationship between coat color and reproduction or milk production will be evaluated under a variety of environmental conditions. More information about the project and the cooperators from other states can be found at [http://rps.uvi.edu/AES/S299/S299\\_home\\_page.html](http://rps.uvi.edu/AES/S299/S299_home_page.html).

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# STX FARMERS LEARN NEW TECHNOLOGIES



*Mathious Clavier, Extension Agent (standing), assisting Reynardo Vasquez during a computer training course*

Reynardo Vasquez said he did not mind a picture of him being taken at the computer to publicize an upcoming computer training course for Virgin Islands' farmers. In fact, excitedly he said "Yes!" Ray, as he is affectionately called, is one of 10 farmers who signed up for the introductory course.

When asked him how the computer class was going, enthusiastically, he said, "Excellent! I am learning a lot."

Each year, from June through October, the U.S. Virgin Islands goes through its hurricane season. For many Virgin Islanders, 1989 was a memorable time; many lost their homes, important documents and records. For Virgin Islands' farmers, however, it was particularly hard especially for small farmers who never kept farm financial records. Therefore, getting agricultural disaster assistance was extremely difficult.

For many small farmers in the Virgin Islands, the lack of proper farm financial records has prevented them from qualifying for farm loans or agricultural grant assistance programs. To help strengthen the farm financial management of farmers, the Cooperative Extension Service has initiated a computer training program that will teach small farmers in the Territory how to keep good financial records.

Farmers attend evening classes twice

per week for two hours. They learn the parts of the computer, keyboarding using Microsoft Word, they are introduced to e-mail and the Internet, they learn programs such as Excel, and finally, they learn how to enter financial data.

The training is divided into three sessions. The first session ran February 24 through May 22, 2003. Session two runs from June 3 through September 4 and session three from September 16 through December 16, 2003.

According to Clinton George, CES Assistant Director for Agriculture & Natural Resources, over the past 20 years, 90% or more of approximately 270 small crop farmers in the U.S. Virgin Islands have not been consistently engaged in the practice of maintaining farm operational and financial records. This makes it difficult for them to participate in agricultural disaster assistance programs, alternative energy assistance programs, and natural resources programs that are customarily offered by local and federal agencies.

Kwame N. Garcia, CES State Director, recently said, "This computer training course not only teach farmers how to use computer software, but also to search the World Wide Web in accessing other agricultural programs that are available nationally."

For more information on the computer training, call (340) 692-4071.

# RPS ADVISORY GROUP MEETS

The Advisory Council of Research and Public Service met on Monday, April 14, 2003, to review present RPS program offerings, learn of future plans and provide input for guidance in RPS. The meeting was conducted by video conference between the University's two campuses. Members of the Council in attendance were Mr. Roger Dewey, Ms. Janice Hodge, Mr. William Murchison, Dr. Alex Randall and Mr. Frank Schulterbrandt.

Presentations were made by RPS Directors highlighting major ongoing activities in their units and directions that their units will be taking in the future. A special presentation was made to the group by Professor Roy Watlington, Project Director for VI-EPSCoR, the Virgin Islands Experimental Program to Stimulate Competitive Research. This program is sponsored by the National Science Foundation and is currently a priority initiative of the University.

Advisory Council members complimented RPS staff on their programs and made several suggestions for inclusion in future RPS offerings. The Advisory Council meets formally on an annual basis but remains constantly involved with RPS programs through direct contact with RPS Directors and the Vice Provost. They are kept notified of activities in RPS and are encouraged to participate in all seminars, workshops, courses and similar events.

Persons interested in assisting RPS to more effectively implement its mission by serving on the Advisory Council should contact the Vice Provost for Research and Public Service, Dr. Henry H. Smith by phone at (340) 693-1062 or by email at [hsmith@uvi.edu](mailto:hsmith@uvi.edu).



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## UVI-SBDC GAINS POSITIVE RATING IN RECENT ACCREDITATION REVIEW

The UVI Small Business Development Center (UVI-SBDC) is pleased to announce that it successfully gained accreditation from the America's Small Business Development Centers (ASBDC) Network following a recent review. As part of the national standards and criterion set forth by ASBDC and main sponsor, U.S. Small Business Administration, SBDCs are evaluated every four years for accreditation recertification. The UVI-SBDC received high marks for having successfully created an environment in which the program leaders address organizational values and performance expectations in conjunction with UVI and SBA strategic objectives.

Specifically, the SBDC was evaluated on a number of significant areas that embraced operational/structural components including, but not limited to, the following: Leadership and Organizational Issues; Strategic Planning; Client and Stakeholder Focus; Program Performance Standards; Staff Qualification and Resource Utilization; Process Management.

The ASBDC accreditation review team was led by Mr. Dennis Gruell, State Director of the Connecticut SBDC and Mr. Jim King, State Director of the New York Small Business Development Center. The team was privileged to meet with UVI's President LaVerne E. Ragster, Provost Gwen-Marie Moolenaar and Dr. Henry H. Smith, Vice Provost.

The management and staff are very proud of this accreditation certification and wish to thank the University community for its continuous support. The SBDC is expected to undergo a similar financial examination review by its lead sponsor, the SBA, in the not too distant future.

## SBDC AND 32ND ANNUAL AGRICULTURE AND FOOD FAIR

The SBDC continues to participate in the Ag Fair while stressing that agriculture is a business that can be very lucrative, including stressing Community Supported Agriculture as a win-win situation. Although not a new concept, it is an innovative way to connect consumers and farmers in a mutually beneficial relationship of supply and demand.

Agri-tourism is another method by which farmers can generate additional revenue by simply sharing their knowledge of their farms with people for education or entertainment. This could be done through simply sampling fruits and vegetables, meandering through the fields, seeing historical buildings and perhaps even creating a petting farm. Over the past, more than 1 million people have visited the Virgin Islands each year - many would be excited to see how bananas and papayas are grown. School tours are excellent educational opportunities to provide a positive effect for children to learn about farming. All this can be beneficial and "entrepreneurial" for our Territory's farmers.

## YOUTH OUTREACH PROGRAM FOR FUTURE BUSINESS LEADERS WEEK

As part of the on-going need to work with future entrepreneurs of the islands, the SBDC training staff was an integral participant in the "Youth Outreach Program for Future Business Leaders of America Week."

Working with the schools, seminars were presented to the St. Croix Educational Complex, as well as the Elena Christian Junior High School. Starting with the basic three "R(s)" of "Reading, wRiting and aRithmetic," the program stresses the importance of education from the beginning elementary grades through high school.

It is the intent to instill that youth can gain the opportunities to success in whatever business field they may elect. Similar outreach initiatives have been targeted for the FBLA's schedule of activities based on St. Thomas.

## CDC, CES PLAN NEW FIELD GUIDE

The Eastern Caribbean Center, Conservation Data Center has received a \$20,000 grant from the V.I. Department of Agriculture to produce a Field Guide under the Urban and Community Forestry Assistance Program. A cooperative agreement between Cooperative Extension Service and ECC will provide an additional \$8,000 for publication costs.

Recently, with the help of UVI Cooperative Extension Service and many other partner agencies, the CDC prepared the first detailed and accurate maps of the marine and terrestrial resources of the Territory through a Rapid Ecological Assessment (REA). The V.I. Data Atlas Series, a comprehensive GIS mapping of physical and biological data about the Territory, spotlights the distribution of these marine and terrestrial habitat types.

*Ridge to Reef: A Field Guide to the Plant and Marine Communities of the Virgin Islands* is based on the REA maps and classification systems developed in the Territory. The guide links both marine and terrestrial systems, and encourages the understanding that for small, mountainous, tropical islands, natural resource protection must consider land use and marine impacts together.

The book is scheduled for completion and publication by the end of 2003. Ms. Toni Thomas of UVI-CES and Dr. Barry Devine of CDC are co-authoring the publication. For further information contact Ms. Thomas at (340) 693-1084 and Dr. Devine at (340) 693-1038.

## AES FISH SYSTEMS SEMINAR HELD

In the U.S. Virgin Islands farming of fruits and vegetables is widely practiced. However, fruits and vegetables are not the only goods that these islands may produce. The cultivation of Tilapia fish is a continuing area of research that the University of the Virgin Islands has been recognized for internationally. Keeping in line with the mission of the University, to provide community service, the Water Resources Research Institute and the Agricultural Experiment Station presented a seminar summarizing developments made at UVI in this area of fish farming.

The seminar which was entitled "Commercial Fish Farming Systems: Recent Research Development at UVI," was presented by Dr. James Rakocy. Dr. Rakocy is the Director of the Agricultural Experiment Station and Research Professor of Aquaculture. The seminar was held in St. Croix on Tuesday, April 15, from 10:30 a.m. to 12:00 p.m. with a turn-out of about 20 persons and again in St. Thomas on Wednesday, April 16, from 1:30 p.m. to 3:00 p.m. with a count of 23 persons.

Dr. Rakocy's presentation described three types of production systems that were developed at the University of the Virgin Islands. These systems include cage culture, greenwater tank culture and aquaponics, which all conserve and reuse water. The seminar included topics such as construction materials and techniques, production management and marketing and economics. Dr. Rakocy and his staff are available to make similar presentations to organized groups and may be contacted at (340) 692-4020 or by email at jrakocy@uvi.edu.

More information on the UVI aquaculture program may also be obtained by visiting their website at <http://rps.edu/AES/Aquaculture/aqua.html>.

# FISHERIES CONSERVATION WORKSHOP HELD AT VIERS



*Participants in the first fisheries conservation workshop for the eastern Caribbean share information*

During December 9-13, 2002, The Nature Conservancy, The Ocean Conservancy and UVI's Center for Marine and Environmental Studies collaborated in an effort to conserve and protect the Caribbean marine environment and its species by hosting the first fisheries conservation workshop for the Eastern Caribbean.

The workshop was held at UVI's Virgin Islands Environmental Resource Station (VIERS) in St. John, USVI, which provided an ideal setting to focus the participants' attention on discussions related to sustainable marine resource management. The objective of the workshop was to bring together scientists, conservationists, government agencies and fishermen to share expertise, concerns and possible solutions to protect and conserve Caribbean marine life.

The idea originated from a similar workshop held in Belize where The Nature Conservancy partnered with local fishermen and divers to identify, monitor and protect several fish spawning areas off the coast of Belize. The workshop at VIERS was focused on two

areas of research: the identification and conservation of fish spawning aggregation sites and the use of marine protected areas.

During the 5-day workshop over 50 participants from Belize, Grenada, St. Lucia, Virgin Gorda, St. John, St. Croix and St. Thomas discussed their concerns, exchanged ideas and participated in training sessions to help collect data for scientific studies on fish spawning aggregations. Participants learned how to identify commercially important species using scientific names, use GPS and nautical charts to locate and map spawning aggregations sites and use fish tagging techniques. These topics were of great interest to all participants as the rapid decline of fish population and the increased loss of coral reef have sparked concern in fishermen, scientists and conservationists alike.

Throughout the Caribbean, including the Virgin Islands, many spawning aggregations have been eliminated by over-fishing. This not only causes a decline in reef fish populations throughout the region but also impacts local fishermen on an economical level.

Fishermen at the workshop were very concerned about protecting the present fish population as well as the longevity of the species, especially groupers and snappers.

"I never looked at fishing from a conservation standpoint before but after seeing these patterns it really concerns me. I think policies need to be made, implemented and enforced so that these species can survive to feed our children's children," stated Esau Ross of Virgin Gorda. Having the same concern, many fishermen in Central and South America are now working in the conservation industry, doing research instead of fishing commercially.

After establishing the need for protected areas, towards the end of the workshop, participants were asked to develop a hypothetical zoning plan for the island of St. Croix as well as fishing regulations. This activity brought together fishermen and managers in small groups from around the Caribbean to solve current problems and anticipate future issues. The groups presented their work to other participants, showcasing what they had learned from each other during the week. The enthusiasm and creativity demonstrated by participants will carry these efforts into the next stage, which includes spawning aggregation research and the development of appropriate marine protected areas.

For more information on this or future workshops please contact The Nature Conservancy (340-773-5575), The Ocean Conservancy (340-776-4701), or UVI's Center for Marine and Environmental Studies (340-693-1380).

R&PS

[HTTP://RPS.UVI.EDU/](http://RPS.UVI.EDU/)

# A BOUNTIFUL HARVEST: UVI-AES SUCCESSFULLY HARVESTS FIRST CROP OF TILAPIA FROM COMMERCIAL- SCALE GREENWATER TANK



*Commercial greenwater aquaculture tank, Agricultural Experiment Station*

The Aquaculture Program at the Agricultural Experiment Station successfully harvested its first crop of tilapia from a newly constructed commercial-scale greenwater tank. A total of 6334 lbs. of Nile tilapia, averaging 2 lbs. per fish, was produced.

Greenwater aquaculture refers to the rich, green color of the water, which is characteristic of some intensive systems for raising tilapia and other fish throughout the world. Significant advances have been discovered at UVI over the years regarding the roles of algae, bacteria, and suspended organic matter in terms of water quality and supplemental feed for the fish.

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“WATER QUALITY IN THE COMMERCIAL SYSTEM WAS VERY GOOD THROUGHOUT THE GROWTH TRIAL, AND FISH GROWTH WAS EXCELLENT. THE YIELD FROM THE FIRST HARVEST REPRESENTS A 29-FOLD INCREASE OVER STANDARD POND PRODUCTION CAPABILITIES.”

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The tank’s design is the culmination of research in greenwater aquaculture conducted at UVI over the last 12 years. The plastic lined, concrete and cinderblock tank measures 52-feet in diameter and holds over 50,000 gallons of water. The commercial-scale tank has shown to be very efficient at removing settleable solids because of a 3% sloped bottom and central drainage cone. Solids are removed daily from the tank and this effluent is utilized for irrigating and fertilizing terrestrial crops.

A major break-through in the operation of the new, large tank was realized upon the installation of an aerator tilted horizontally, as opposed to its standard vertical position. Intense vertical mixing combined with horizontal flow keeps a portion of organic matter suspended in the water column thereby enhancing a natural filtration process. Additionally, the bacteria-rich organic matter is grazed upon by the fish, which improves feed conversion ratio and reduces feed costs. Water quality in the commercial system was very good throughout the growth trial, and fish growth was excellent. The yield from the first harvest represents a 29-fold increase



More than 3,000 fish weighing 2 lbs each were harvested from the commercial greenwater tank

over standard pond production capabilities.

The development of recirculating aquaculture systems capable of sustaining high fish densities is a technology ideally suited to the Virgin Islands where flat land and fresh water are limited. Advances in greenwater system design are important for the Virgin Islands because this technology provides an alternative to the importation of seafood to the Territory. Greenwater aquaculture involves a design that is simple and very efficient regarding space, cost, water use, feed input, and waste generated. The overall goal is the development of a system for use by everyday farmers which, when effectively integrated with field crop production as a source for irrigating and fertilizing plants, is environmentally sustainable and economically profitable.

Tilapia are harvested weekly and marketed on-site at the AES Field Station and to local restaurants. The Aquaculture Program offers an intensive, annual short course, Tilapia Aquaculture and Aquaponics, which will be conducted June 22-28, 2003. More information about the short course by visiting the web site at: <http://rps.uvi.edu/AES/Aquaculture/UVIShortCourse.html>.

This research was supported by a grant from the USDA Southern Region Sustainable Agriculture Research and Education fund.

## RESCUING A 'NATIVE VIRGIN ISLANDER'



The rare Sandy Point Orchid

The Sandy Point Orchid (*Psychilis macconnelliae*) is one of three rare native Virgin Island orchids that can still be found on St. Croix. However, the population has seriously declined due to land development, private collectors and natural disasters such as hurricanes and brush fires. The orchid is listed as an endangered plant on the VI-DPNR list for the U.S. Virgin Islands.

Jacqueline Kowalski, research analyst, Biotechnology & Agroforestry Program, has been working on developing tissue culture techniques to save this plant. Her work involves growing the dust-sized, less than 1/32 inch, seeds in tissue culture. Because the seed is so small, mature seed capsules are used before it opens to disperse the tiny seeds. The seeds in the capsule are clean and opening the seed pod in tissue culture allows for easy handling and spreading of these minute seeds on the media.

Kowalski recently attended a session on "Plant Biotechnology 2002 and Beyond" held under the auspices of the International Association for Plant Tissue Culture & Biotechnology that was hosted by the 10th Congress. Her participation was made possible through a fellowship that she sought. At this event, Kowalski presented her results for successfully germinating the seeds on a tissue medium containing mineral nutrients (fertilizer), vitamins, soy protein and charcoal.

Kowalski's system has potential to be used by local nurseries and orchid enthusiasts with hopes of increasing the population of this beautiful native plant.



RESEARCH & PUBLIC SERVICE  
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**JUNE**

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5 SECURITY FOR SMALL BUSINESS IS MORE THAN A LOCK AND KEY/SBDC  
22-28 AQUAPONICS AND TILAPIA AQUACULTURE SHORTCOURSE/AES

**JULY**

- 9 MICROSOFT ACCESS/SBDC  
17 PERSONNEL HANDBOOK FOR SMALL BUSINESSES/SBDC  
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**AUGUST**

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**SEPTEMBER**

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15 CUSTOMER SERVICE EXCELLENCE/SBDC  
18 GRANT WRITING/SBDC  
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