

The World's Largest Open Access Agricultural & Applied Economics Digital Library

## This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<a href="http://ageconsearch.umn.edu">http://ageconsearch.umn.edu</a>
aesearch@umn.edu

Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.



# CARIBBEAN FOOD CROPS SOCIETY

**50** 

## Fiftieth Annual Meeting 2014

St. Thomas, United States Virgin Islands Volume L

#### **PROCEEDINGS**

#### OF THE

#### 50<sup>TH</sup> ANNUAL MEETING

Caribbean Food Crops Society 50<sup>TH</sup> Annual Meeting July 7 – July 11, 2014

Sugar Bay Resort and Spa Hotel St. Thomas, United States Virgin Islands

Edited by
Thomas W. Zimmmerman, Stafford M.A. Crossman,
Errol Chichester and Wilfredo Colón

Published by the Caribbean Food Crops Society

#### ©Caribbean Food Crops Society

#### ISSN 95-07-0410

Copies of this publication may be obtained from:

CFCS Treasurer
Agricultural Experiment Station
Jardín Botánico Sur
1193 Calle Guayacán
San Juan, Puerto Rico 00936-1118

Mention of company and trade names does not imply endorsement by the Caribbean Food Crops Society.

The Caribbean Food Crops Society is not responsible for statements and opinions advanced in its meeting or printed in its proceedings; they represent the views of the individuals to whom they are credited and are not binding on the Society as a whole.



# Caribbean Food Crops Society 50<sup>th</sup> Annual Meeting July 7 to 11, 2014

#### Sugar Bay Resort and Spa Hotel

#### St. Thomas, United States Virgin Islands

## "Enhancing Family Farms Through Sustainable Energy, Research and Technology"

TABLE OF CONTENTS	Page
Oral Presentations Production and Management of Vegetables/Root Crops	
CHARACTERIZATION OF THE SWEET POTATO VIRUS DISEASE COMPLEX IN BARBADOS Angela T. Alleyne, Cara Cummins and Michael James	1
GINGER PRODUCTION AND STORAGE IN THE VIRGIN ISLANDS Thomas W. Zimmerman, Kenya Emanuel, Kalunda Cuffy, Carlos Montilla and Stafford M.A. Crossman	2
<b>DISSEMINATION OF RHIZOBIUM INOCULANTS IN HAITI</b> C. Estevez De Jensen, D. Joseph, E. Prophete, and J. Beaver	6
EVALUATION OF DIFFERENT CROP MANAGEMENT SYSTEMS ON GROWTH AND PRODUCTIVITY OF THREE PUMPKIN VARIETIES Ancel Balfour, Wendy-Ann Isaac, Nakisha Mark, Gaius Eudoxie, Leevun Solomon and Majeed Mohammed	7

#### **Tropical Fruits**

COMMERCIAL STATUS OF BREADFRUIT AND BREADNUT PRODUCTION IN TRINIDAD AND TOBAGO Laura B. Roberts-Nkrumah	8
<b>SORREL HYBRIDS: FRUIT SIZE EVALUATION</b> Thomas W. Zimmerman, Kalunda J. Cuffy, Carlos Montilla and Stafford M.A. Crossman	9
TWO YEAR EVALUATION OF 25 PITAYA VARIETIES IN THE VIRGIN ISLANDS Carlos Montilla, Stafford M.A. Crossman and Thomas W. Zimmerman	14
<b>Integrated Pest Management/Crop Protection</b>	
SIMULTANEOUS DETECTION AND DIFFERENTIATION OF TWO CYTOPLASMIC CITRUS LEPROSIS VIRUSES USING BI-DIRECTIONAL REVERSE TRANSCRIPTION POLYMERASE CHAIN REACTION Ronald Brlansky	19
HISTORY OF CITRUS LEPROSIS VIRUS RECORDED IN HERBARIUM SPECIMENS John Hartung	20
EVALUATION OF <i>Phaeoisariopsis griseola</i> ON COMMON BEAN <i>Phaseolus vulgaris</i> IN PUERTO RICO Consuelo Estevez De Jensen	21
NUTMEG WILT AND MORTALITY IN GRENADA AND ITS CONNECTION TO ENDEMIC <i>Phytophthora</i> species Yilmaz Balci Psla	22
A REAL-TIME PCR ASSAY TO DETECT AND QUANTIFY 16SRIII-L AND 16SRI PHYTOPLASMAS ASSOCIATED WITH CASSAVA FROGSKIN DISEASE IN COSTA RICA AND PARAGUAY Juan Pardo	23
MANAGEMENT STRATEGIES, ASSOCIATED FUNGI AND INTENSITY OF GUAVA SPECK IN MICHOACÁN, MEXICO Angel Rebollar-Alviter	24
ROSE ROSETTE DISEASE ALERT Alejandro Bolques, Mathews Paret, Gary Knox, Binoy Babu, Hank Dankers, Tim Schubert, Carlye Baker and Matthew Orwat	25

ECONOMICS OF EARLY DETECTION AND SUPPRESSION OF LAUREL WILT DISEASE E. A. Evans	26
IR-4'S EFFORTS TO HELP COMBAT 'LAUREL WILT,' A THREAT TO THE FL AVOCADO INDUSTRY Michelle Samuel-Foo, Jonathan Crane, Reed Olszack, Wilfredo Robles and Luis Almodovar	27
NEW INSECTICIDES IN MANAGING AMERICAN SERPENTINE LEAFMINER, Liriomyza trifolii (BURGESS) (DIPTERA: AGROMYZIDAE) IN SOUTH FLORIDA Dakshina R. Seal, Shashan Devkota and Catherine Sabines	28
ENHANCEMENT OF FAMILY FARMS PRODUCTIVITY AND PROFITABILITY USING IPM STRATEGIES M. Haseeb, T. Gordon and L.H.B. Kanga	37
FAO'S SUPPORT TOWARDS THE SUSTAINABLE MANAGEMENT OF BEET ARMYWORM ( <i>Spodoptera exigua</i> ) IN JAMAICA  Vyjayanthi Lopez, Winfred Hammond, Michelle Sherwood, Marina Young, Kathy Dalip, Dean Passard, Yu Takeuchi and Jerome Thomas	38
Animal Science and Agronomy/Soil	
NITROGEN MINERALIZATION OF AGOUTI (Dasyprocta leporina) MANURE APPLIED TO FOUR TROPICAL SOILS Gaius Eudoxie and Lincoln Ashby	49
CENTRAL FLORIDA LIVESTOCK AGENTS GROUP (CFLAG) BEEF CATTLE REPRODUCTIVE MANAGEMENT SCHOOL WITH ARTIFICIAL INSEMINATION S. Gamble, and J. Walter	58
CATTLE REPRODUCTIVE MANAGEMENT SCHOOL WITH ARTIFICIAL INSEMINATION	58 59
CATTLE REPRODUCTIVE MANAGEMENT SCHOOL WITH ARTIFICIAL INSEMINATION S. Gamble, and J. Walter  AN EVALUATION OF FACTORS AFFECTING THE CO <sub>2</sub> - C SINK STRENGTH OF AG-LIME ADDED TO TWO TRINIDAD ACID SOILS De Shorn Bramble and Gregory Gouveia  A FARM INVESTIGATION OF THE ASSOCIATION BETWEEN SOIL PHOSPHORUS (P) AND P IN GRASSES AND THE SERUM P OF DAIRY	
CATTLE REPRODUCTIVE MANAGEMENT SCHOOL WITH ARTIFICIAL INSEMINATION S. Gamble, and J. Walter  AN EVALUATION OF FACTORS AFFECTING THE CO <sub>2</sub> - C SINK STRENGTH OF AG-LIME ADDED TO TWO TRINIDAD ACID SOILS De Shorn Bramble and Gregory Gouveia  A FARM INVESTIGATION OF THE ASSOCIATION BETWEEN SOIL	59

EVALUATION OF THREE COVER CROPS TERMINATED WITH A ROLLER-CRIMPER ON COVER CROP RE-GROWTH AND WEED DEVELOPMENT UNDER TROPICAL CONDITIONS Stuart A. Weiss and K.P. Beamer	78
Economics/Trade Policy/Food Security	
POST EUROPEAN UNION/CARIFORUM EPA: EMERGING TRENDS IN TRADE BETWEEN THE EUROPEAN UNION AND CARIFORUM N. Felix, G. Seepersad, A. Iton and E. Evans	79
FOOD SECURITY IN THE FRENCH CARIBBEAN ISLANDS AND PUBLIC ACTION: WHAT IS AT STAKE? Arnaud Larade and Valérie Angeon	80
AN ECONOMIC ASSESSMENT OF THE IMPACT OF Raoiella indica ON THE NARIVA SWAMP, TRINIDAD AND TOBAGO Marc Garcia	81
TECHNOLOGY TRANSFER IN SMALLHOLDER RICE FARMS IN GUYANA: THE SUCCESS STORY OF THE SIX IMPROVED PRACTICE Kuldip Ragnauth, D. Singh, J. Singh and B. Chintamanie	82
Postharvest Technology/Biological Pest Control	
INFLUENCE OF STORAGE ON SWEETPOTATO SUGAR CONTENT Carlos Montilla, Henry Harris, Raheem Smart, James Gordon and Thomas W. Zimmerman	89
<b>EFFECTS OF TEMPERATURE AND RELATIVE HUMIDITY ON</b> <i>Nephapsis bicolor</i> , <b>A PREDATOR OF Aleurodicus spp.</b> Vyjayanthi F. Lopez and Moses T.K. Kairo	93
THE EFFECT OF PREY SPECIES ON SELECTED FITNESS ATTRIBUTES OF Nephaspis bicolor (COLEOPTERA: COCCINELLIDAE), A PREDATOR OF ALEYRODIDAE Vyjayanthi F. Lopez and Moses T.K. Kairo	108
Education/Extension	
ANALYSIS AND THEMATIC, INSTITUTIONAL AND GEOGRAPHICAL MAPPING OF CFCS PUBLICATIONS IN THE 21ST CENTURY Jean-Louis Diman, Ndeye Niang, Jorge Sierra, Harry Ozier-Lafontaine and Marie-Laure Abinne	121

IDENTIFYING TRAINING NEEDS OF EXTENSION OFFICERS IN THE CARIBBEAN COMMUNITY (CARICOM) Norma Samuel, A. Harder, G. Israel, M. Kumaran, G. Roberts and D. Sammons	123
DIAGNOSIS FOR THE IMPLEMENTATION OF A STRATEGIC PLAN FOR SUSTAINABILITY OF SMALL FAMILY FARMS, ESSENTIAL ELEMENTS OF AGRICULTURE AND RURALITY IN GUADELOUPE Richard Democrite, Alexandre Ducrot, Franck Souprayen, Jean-Louis Diman and Harry Ozier-Lafontaine	124
ENHANCING CARIBBEAN FAMILY FARMERS THROUGH A COURSE IN LEADERSHIP DEVELOPMENT Dawn Mellion Patin and Gina E. Eubanks	126
SOUTHERN SARE RESEARCH & EDUCATION: FUNDING AND OUTREACH OPPORTUNITIES FOR RESEARCHERS James Hill	127
ADVANCING SUSTAINABLE AG INNOVATIONS: SOUTHERN SARE FUNDING OPPORTUNITIES FOR PRODUCERS James Hill	128
<b>Environmental and Energy Concerns</b>	
EXTRA VIRGIN COCONUT OIL [EVCO]: II. PHYSIO-CHEMICAL ANALYSIS AS A BIO-FUEL Puran Bridgemohan, G. Debysingh, R.S.H. Bridgemohan and R.S.H. Bridgemohan	129
A SIMPLE WEB-BASED METHOD FOR SCHEDULING IRRIGATION IN PUERTO RICO AND THE U.S. VIRGIN ISLANDS Eric W. Harmsen and Victor J. Reventos	130
BUILDING SUSTAINABLE BIOMASS-BASED ENERGY SYSTEM FOR CARIBBEAN ISLANDS  Jean-Marc Blazy, François Causeret, Pierre Chopin, Dominique Denon, Loïc Guindé, David Hammouya, Jacky Paul, Mirza Publicol and Jorge Sierra	131
EVALUATING RENEWABLE ENERGY OPTIONS FOR THE AGRICULTURE SECTOR IN SURINAME Lydia Ori, Priscilla Karijodrono and Henry Ori	132
CLIMATE CHANGE ADAPTATION IN SMALLHOLDER RICE FARMS IN GUYANA: THE SUCCESS STORY OF THE "SIX POINTS PRACTICE"  Jagnarine Singh, K. Ragnauth, D. Singh and B. Chintamanie	133

AGROFORESTRY IN THE CARIBBEAN, TRADITIONAL SYSTEMS, BOTH SUSTAINABLE AND BIODIVERSE Michael Morgan and Thomas W. Zimmerman	134
Drosophila suzukii: A POTENTIAL THREAT TO SOFT FRUITS IN THE CARIBBEAN AND SOUTH AMERICA Oscar E. Liburd and Teresia W. Nyoike	135
CAEPNET: INTEGRATING EXTENSION SYSTEMS IN THE CARIBBEAN Kuldip Ragnauth and Norma Samuel	136
Poster Presentations	
FIELD FOOD SAFETY EDUCATION FOR STUDENTS WORKING IN SCHOOL GARDENS N. Demorest	137
<b>EXAMINING FARM TO SCHOOL NETWORKS IN INDIANA</b> Kathryn Clayton and Jennifer Dennis	138
EVALUATION OF FOUR TOMATO VARIETIES FOR COMMERCIAL ORGANIC PRODUCTION IN THE U.S. VIRGIN ISLANDS D. Nandwani, S. Dennery, V. Forbes and T. Geiger	139
SUSTAINABLE AGRICULTURE IN THE CARIBBEAN: EXAMPLES FROM USDA SOUTHERN SARE PROGRAM Candace Pollock	144
AQUAPONICS RESEARCH AND EXTENSION AT KENTUCKY STATE UNIVERSITY Teferi Tsegaye, Maifan Silitonga, James Tidwell and Kirk Pomper	145
GERMPLASM RESEARCH AT THE KENTUCKY STATE UNIVERSITY PAWPAW REPOSITORY Kirk Pomper, Teferi Tsegaye, Sheri Crabtree and Jeremiah Lowe	146
THE CENTER FOR SUSTAINABILITY OF FARMS AND FAMILIES AT KENTUCKY STATE UNIVERSITY Maifan Silitonga, Teferi Tsegaye, Robert Stone and Kirk Pomper	147
NEW APPROACHES IN THE PRODUCTION OF CITRUS IN PUERTO RICO Félix M. Román, Agenol González, Jennifer Pagán, Consuelo Estévez de Jensen and Evelyn Rosa	148

YIELD AND QUALITY ASSESSMENT OF FOUR <i>Urochloa</i> sp. CULTIVARS ON AN OXISOL IN PUERTO RICO Elide Valencia and Jorge Fuentes Fuster	149
IMPACTO DE SISTEMAS INTEGRADOS DE LEGUMINOSAS PLATANOS ( <i>Musa</i> sp.) SOBRE MALEZAS Y APORTACION DE N Johana Parreño, Elide Valencia, David Jenkins, Ricardo Goenaga y Juan Ortiz	150
EFECTOS ALELOPATICOA DE CROTALARIA ( <i>Crotalaria juncea</i> CV. TROPIC SUNN), GANDUL ( <i>Cajanus cajan</i> ) Y CANAVALIA ( <i>Canavalia ensiformis</i> ) SOBRE LA GERMINACION DE CULTIVOS TRPOPICALES Eliana Martinez, Elide Valencia, James Beaver y Hugo Cuevas	151
BIOLOGICAL CONTROL OF VARROA MITE, THE INVASIVE AND DESTRUCTIVE ECTO-PARASITE OF HONEY BEE POPULATIONS L. Kanga, W. Jones, T. Hashman and Muhammad Haseeb	152
EFFICACY OF FUNGICIDES APPLIED AT THE COTYLEDON STAGE FOR MANAGEMENT OF DOWNY MILDEW ON KALE GROWN FOR SPRING MIX PRODUCTION Richard N. Raid and Barbara Saddler	153
PHYSICAL CHARACTERISTICS OF PUMPKIN, TOMATO AND SWEET PEPPER HARVESTED IN TRINIDAD, WEST INDIES: LINKAGES TO CONSUMPTION USES Neela Badrie and Sophia Balfour	154
INITIATING IPM FOR MANGO WEEVIL, Sternochetus mangiferae (FABRICIUS) (COLEOPTERA: CURCULIONIDAE), IN THE U.S. VIRGIN ISLANDS Joey R. Williamson	155
CUCUMBER CULTIVAR STUDY IN THE U.S. VIRGIN ISLANDS Dilip Nandwani, Joey R. Williamson, Stafford Crossman and Vanessa Forbes	157
ARE THERE ENERGY SECURITY LESSONS FOR THE CARIBBEAN FROM FLORIDA'S ENERGY POLICY? Edward A. Evans and Ronald M. Gordon	162
EVALUATION OF SIX EDIBLE-POD PEA VARIETIES AS A POTENTIAL HIGH VALUE CROP FOR THE U.S. VIRGIN ISLANDS Stuart A. Weiss, Thomas C. Geiger and K.P. Beamer	163
BREEDING ELEPHANT GRASS AND GIANT KING GRASS FOR IMPROVED BIOMASS YIELD AND BIOSAFETY Bakaran Kannan, Marco Sinche, Carlos Corsato and Fredy Altpeter	164

EVALUATION OF DROUGHT TOLERANCE IN FIVE NATIVE CARIBBEAN TREE SPECIES WITH LANDSCAPE POTENTIAL Michael Morgan and Thomas W. Zimmerman	165
ORGANIC HIGH SUCROSE SUGARCANE SYRUP Karlene Fortune and Puran Bridgemohan	168
Moringa oliefera LEAF EXTRACT AS PLANT GROWTH REGULATOR ON PAK CHOI SEEDLINGS Jenna-Marie Gopaul and Puran Bridgemoha	169
ESTIMATION OF STEROL CONTENT IN EXTRA VIRGIN COCONUT OILS (EVCO) USING UV-VIS SPECTROPHOTOMETRY Samanta S. Ramnarine, Puran Bridgemohan and Ejae John	170
USE OF BIOSOLIDS AS A SOIL AMENDMENT AND ORGANIC FERILIZER II: RADISH PRODUCTION Kimberly Singh and Puran Bridgemohan	171
EVALUATION OF CHINESE MILK VETCH (Astralagus sinicus) AS A BIO-FERTILIZER IN THE TROPICS Elvis Gerald and Puran Bridgemohan	172
RESPONSES OF 'HADEN' AND 'DAVIS HADEN' MANGOS IN THE NURSERY TO A BIOSTIMULANT EXTRACT OF THE ALGA Ascophyllum nodosum J. Pablo Morales-Payan	173
YIELD OF LETTUCE GROWN IN A PROTECTIVE STRUCTURE AS AFFECTED BY FOLIAR APPLICATIONS OF A BIOSTIMULANT J. Pablo Morales-Payan	174
PURPLE NUTSEDGE ( <i>Cyperus rotundus</i> ) INTERFERENCE WITH PURPLE BASIL IS AFFECTED BY NITROGEN FERTILIZATION J. Pablo Morales-Payan	175
CURRENT STATUS OF MANAGEMENT OF MELON THRIPS, Thrips palmi KARNY (THYSANOPTERA: THRIPIDAE) IN TOMATOES IN SOUTH FLORIDA Dakshina R. Seal, Mohammad Razzak and Catherine Sabines	176

ASSESSING THE NEEDS OF SMALL LIVESTOCK PRODUCERS J. Bosques, J. Cohen and Y.C. Newman	184
SELECTION OF AN AQUACULTURE PRODUCTION SYSTEM FOR FARMERS IN THE US VIRGIN ISLANDS Donald S. Bailey and Dilip Nandwani	185
EFFECT OF FOLIAR SPRAY APPLICATION OF CALCIUM AND PHOSPHORUS ON FRUIT PRODUCTION OF ZUCCHINI (Cucurbita pepo) Seti Balkaran, Donald Bailey and Dilip Nandwani	186
INFLUENCE OF EXTENDED REFRIGERATION ON PEA SEED VIABILITY Shamali Dennery, Thomas Geiger and Thomas W. Zimmerman	187
NITROUS OXIDE PRODUCTION IN TROPICAL SOILS UNDER DIFFERENT MOISTURE REGIMES AND N-APPLICATION RATES Leann Metivier, Joann Whalen and Gregory Gouveia	190
COLLECTING AND COMPARING BREAFRUIT SELECTIONS IN PUERTO RICO J. Pablo Morales-Payan	200
American Phytopathological Society Caribbean Division Student Oral Competition	
EVALUATION OF THE TEPARY BEAN ( <i>Phaseolus acutifolius</i> ) CIAT GERMPLASM COLLECTION FOR RESPONSE TO BEAN COMMON MOSAIC NECROSIS VIRUS ( <i>BCMNV</i> ) Ana Vargas, Timothy Porch and James Beaver	201
IDENTIFICATION AND MOLECULAR CHARACTERIZATION OF PIGEON PEA WITCHES'-BROOM PHYTOPLASMA IN PLANTS AND ITS POTENTIAL VECTORS IN PUERTO RICO Jorge Caicedo Chávez	202
GENETIC DIVERSITY OF <i>Ralstonia solanacearum</i> STRAINS CAUSING BACTERIAL WILT OF POTATO IN COSTA RICA José Ramírez-Coché, Luis Gómez-Alpízar and Arturo Brenes-Angulo	203
MONITORING OF ENDANGERED PLANT SPECIES AT THE KARST REGION OF PUERTO RICO TO DETECT PLANT PATHOGENIC THREATS Cecilia Monclova-Santana	204

IDENTIFICATION AND CHARACTHERIZATION OF Colletotrichum spp. AFFECTING YAM Dioscorea spp. CROP IN PUERTO RICO Stephanie Fuentes Aponte	205
FUNGAL PATHOGEN COMPLEXES ASSOCIATED WITH DISEASES OF RAMBUTAN, LONGAN AND MANGO IN PUERTO RICO Luz Serrato-Diaz	206
REACTION OF Musa HYBRIDS AND CULTIVARS TO COLOMBIAN ISOLATES OF Mycosphaerella fijiensis Lederson Gañán	207
SCELROTIA GERMINATION AND ASCOSPORE FORMATION OF Claviceps gigantean Celeste Moreno-Manzano	208
FUNGI AND OOMYCETE PATHOGENS ASSOCIATED WITH PEPPER WILT IN MICHOACÁN MEXICO Nelson Laville	209
PATHOGENIC, MORPHOLOGICAL AND MOLECULAR CHARACTERIZATION OF <i>Phytophthora</i> spp., CAUSAL AGENT OF CACAO BLACK POD DISEASE IN PUERTO RICO Lorena Simbaña	210
Poster Presentations	
3-DIMENSIONAL MODELING OF PROTEIN STRUCTURES DISTINGUISHES CLOSELY RELATED PHYTOPLASMAS. Robert Davis	211
PLANT PATHOLOGY AND MICROBIOLOGY TRAINING AT UNIVERSITÉ DE LA NOUVELLE GRAND'ANSE, HAITI Guy Knudsen	212
BIOFUMIGATION WITH MUSTARD SEED MEAL TO CONTROL Globodera pallida, THE PALE CYST NEMATODE Louise-Marie Dandurand	213
EDUCATIONAL STRATEGIES TO PROMOTE PLANT PATHOLOGY AT PUBLIC SCHOOLSAND AT THE UNIVERSITY OF PUERTO RICO Lydia Rivera-Vargas	214

DEVELOPING IPM STRATEGIES FOR SMALL FARMS IN	215
MISSISSIPPI	
Daniel Collins	
IDENTIFIED FUNGI IN FIELD RICE PLANTS AND THEIR	216
SENSITIVITY TO FUNGICIDES	
Mónica Osnava-González	

#### **Message from the CFCS President**

### Kwame N. Garcia, Sr., State Director, Cooperative Extension Service, University of the Virgin Islands

The 50<sup>th</sup> Annual Meeting of the Caribbean Food Crops Society is now history, but our gratitude to all sponsors, participants, and presenters will be continuous. Without their contributions in various forms, we would not have had such an engaging conference. I would like to express my sincere gratitude to those on whom I have been calling and who have always responded positively to my call. To the Virgin Islands Department of Tourism, the Virgin Islands Port Authority, the Virgin Islands Department of Agriculture, the Virgin Islands Lottery, the Caribbean Agro-Economic Society, the Association of 1890 Research Directors, and to all other supporters, I extend special kudos for always being available and supportive of our programs and endeavors. We also thank those individuals who attended or conveyed welcoming remarks such as Governor John P. de Jongh, Jr., and UVI President, Dr. David Hall.

From the very beginning of the conference, we were guided by our theme: "Enhancing Family Farms through Sustainable Energy, Research and Technology," which is very evident in the papers presented and our entire focus. Those who attended will always remember the passion with which our presenters delivered on their topics. That is so very important because our theme highlights an essential component that requires our attention if we are going to survive as a people. The present economic and other global issues seem to have a greater impact on us in the Caribbean because of our geographic location and our great dependence on the elements for our existence. We, therefore, need to tap into the available resources that we can identify through research and technology.

The included articles in this volume will remind us all of the various facets at our disposal that can be applied for our sustainability. For those who could not have attended, we hope that you will benefit from the many points presented through application and research. The following are some of the topics presented at the conference: "Technology Transfer in Smallholder Rice Farms in Guyana: The Success Story of the Six Improved Practice", "Commercial Status of Breadfruit and Breadnut Production in Trinidad and Tobago", "Nitrous Oxide Production in Tropical Soils under Different Moisture Regimes and N-Application", "Effect of Temperature and Relative Humidity on *Nephapis bicolor*, A Preditor of *Aleurodicis spp*", "Food Security in the French Caribbean Islands and Public Action: What is at Stake?" and "Influence of Storage on Sweetpotato Sugar Content." These are only a small number of the papers presented throughout the conference, but they should be enough to whet your appetite for more.

We could not have had such a productive and successful conference without our sponsors, presenters, and all those who participated in planning and executing the conference. I thank everyone, and encourage our readers to read the complete presentations and implement as much as you possibly can.

#### 2014 CFCS BOARD OF DIRECTORS AND OFFICERS

#### **BOARD OF DIRECTORS**

Chairman: Dr. Héctor L. Santiago, University of Puerto Rico

Vice Chairman: Mr. Kwame Garcia, University of the Virgin Islands Secretary: Dr. Wilfredo Colón, Universidad del Este, Puerto Rico

Treasurer: Dr. Alberto J. Beale, University of Puerto Rico

2014 President: Prof. Kwame Garcia, UVI Agricultural Extension Service

#### **REGIONAL REPRESENTATIVES**

English

Mr. Kwame Garcia, University of the Virgin Islands

Dr. Richard Harrison, CARDI, Jamaica

Mr. Barton A. Clarke, FAO, Barbados

• Spanish

Dr. Héctor L. Santiago, UPR, Puerto Rico

Mr. Rafael Pérez Duvergé, IDIAF, Dominican Republic

Mr. Jerry Dupuy, Private Sector, Dominican Republic

• French

Dr. Isabelle Jean Baptiste, AMADEPA, Martinique

Mr. Marceau Farrant, INRA, Guadeloupe

Mr. Jean Louis Diman, INRA, Guadeloupe

Dutch

Dr. Lydia Ori, A de KUS, Surinam

#### ADVISORY BOARD

Dr. Víctor Villalobos, IICA, Costa Rica

Dr. Guy Anais, St. Martin

Mr. Kofi Boateng, University of the Virgin Islands

Dr. H. Arlington Chesney, CARDI, Trinidad and Tobago

Dr. Elvin Román-Paoli, UPR, Puerto Rico

Dr. Jack Rechcigl, IFAS, University of Florida, USA

Dr. Harry Ozier-Lafontaine, INRA, Guadeloupe

Ing. Juan José Espinal, CEDAF, Dominican Republic

Dr. Carlton Davis, IFAS, University of Florida, USA

Dr. Edward Evans, IFAS, University of Florida, USA