

FACULTY OF FOOD AND AGRICULTURE
THE UNIVERSITY OF THE WEST INDIES
ST.AUGUSTINE

International Breadfruit Conference

“Commercialising Breadfruit for Food and Nutrition Security”

Hyatt Regency Trinidad
Port of Spain, Trinidad and Tobago

6 – 10 July 2015

Programme

Monday 06 July, 2015

8.00 – 9:15	Opening Ceremony
9:15 – 10:00	Keynote Address: <i>Breadfruit for Food and Nutrition Security in the 21st Century</i> Dr. Diane Ragone, The Breadfruit Institute, National Tropical Botanical Garden, USA
10:00 – 10:30	COFFEE BREAK

Plenary Session 1 – Historical Perspectives and Agricultural Policies

Chairperson - Dr. Lystra Fletcher-Paul, Food and Agriculture Organisation (FAO) Representative in Trinidad and Tobago, Port of Spain, Trinidad and Tobago

10:30 – 10:45	<i>The Introduction of the Breadfruit (<i>Artocarpus altilis</i>) to the Caribbean – the Role of Sir Joseph Banks</i> Colin Leakey ¹ and <u>Laura Roberts-Nkrumah</u> ^{2, 15} Minster Yard Lincoln LN2 1PJ ; Life Fellow of the Society of Biology, c/o Charles Darwin House, London WC1N 2JU, ² Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago
10:45 – 11:00	<i>A historical perspective on the role of plant propagation in the distribution, development and commercialisation of breadfruit</i> Laura Roberts-Nkrumah ¹ , <u>Judy Rouse-Miller</u> ² , Rita Pemberton, Julian Duncan ³ ¹ Department of Food Production, Faculty of Food and Agriculture, The University of

the West Indies, St. Augustine Campus, Trinidad and Tobago, ² Department of Life Sciences, Faculty of Science and Technology, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago, ³ Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago

11:00 – 11:15	<i>Breadfruit development in Jamaica</i> Norman Grant, Jamaica Agricultural Society, Jamaica
11:15 – 11:30	<i>Breadfruit development in St. Kitts and Nevis</i> <u>Heiko Bammann</u> ¹ , Conrad Kelly ² and Racquel Williams-Ezquea ³ , ¹ Food and Agriculture Organisation of the United Nations (FAO), Barbados, ² Deaprtment of Agriculture, St. Kitts and Nevis, ³ Food and Agriculture Organisation of the United Nations (FAO), St. Kitts and Nevis
11:30 – 12:00	Discussion
12:00 – 13:00	LUNCH

Plenary Session 2: Health and Nutrition

Chairperson- Professor Fitzory Henry, School of Public Health and Health Technology, University of Technology, Jamaica

13:00 – 13:15	<i>Nutritional and health effects of the consumption of breadfruit</i> <u>Sa'eed Bawa</u> and Marquitta Webb, Department of Agricultural Economics and Extension, Faculty of Food and Agriculture, The University of the West Indies, St Augustine Campus, Trinidad and Tobago
13:15 – 13:30	<i>Lifestyle diseases and food and nutrition security in the Caribbean</i> Christine Bocage, Caribbean Public Health Agency, Port of Spain, Trinidad and Tobago
13:30 – 13:45	<i>Nutraceutical and medicinal value of breadfruit (Artocarpus altilis)</i> Mukesh S. Sikarwar, Unit of Pharmaceutical Chemistry, Faculty of Pharmacy, AIMST University, Semeling, Kedah Darul Aman, Malaysia
13:45 – 14:00	<i>Artocarpus altilis (Parkinson)-derived Geranyl Dihydrochalcone binds Janus Kinases and inhibits STAT3 phosphorylation in Prostate Cancer DU145 Cell</i> Oyekanmi Nashiru, National Biotechnology Development Agency (NABDA), Abuja, Nigeria
14:00 – 14:45	Discussion
14:45 – 15:15	COFFFE BREAK

Plenary Session 3: Germplasm Evaluation and Plant Propagation

Chairperson - Professor Julian Duncan, Professor Emeritus, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine, Trinidad and Tobago

- 15:15 – 15:30 *Colour and texture variation among breadfruit cultivars (Artocarpus altilis)*
Oral O. Daley¹, Laura B. Roberts-Nkrumah¹, and Angela T. Alleyne², ¹Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St Augustine Campus, Trinidad and Tobago, ²Department of Biological and Chemical Sciences, Faculty of Science and Technology, The University of the West Indies, Cave Hill, Barbados
- 15:30 – 15:45 *Working toward a global view of breadfruit genetic diversity*
Nyree Zerega, Northwestern University and the Chicago Botanic Garden, USA
- 15:45 – 16:00 *Utilizing analytics and breadfruit germplasm data to create and enhance business opportunities in the Caribbean*
Travis Paul and Laura Roberts-Nkrumah, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St Augustine Campus, Trinidad and Tobago
- 16:00 – 16:15 *Increasing breadfruit production in Jamaica through the collection, conservation and distribution of germplasm*
Seymour Webster¹, Christopher Mundle¹, Paul Virtue² and S. Michael McLaughlin²
¹College of Agriculture, Science, and Education (CASE), Jamaica, ² Trees that Feed Foundation (TTFF), USA
- 16:15 – 16:30 *An evaluation of a propagation technique (marcotting) on breadfruit (Artocarpus altilis) variety "Balekana ni Samoa" for mass multiplication of planting material in Fiji*
Kaitu Erasito¹ and Livai D. Tora², ¹Secretariat of the Pacific Community, Nadi, Fiji Islands, ²Pacific Breadfruit Project, Nadi, Fiji Islands
- 16:30 – 16:45 *Ex vitro grafting of breadfruit microcuttings on chataigne rootstock*
Frankie K. Solomon Jr.¹, Judy A. Rouse-Miller² and Laura B. Roberts-Nkrumah¹
¹Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago, ² Department of Life Sciences, Faculty of Science and Technology, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago
- 16:45 – 17:00 *Using improved micropropagation system for breadfruit can support sustainable development*
Valerie Saena Tuia and Arshni Sanjita Shandil, Secretariat of the Pacific Community Land Resources Division, Suva, Fiji

17:00 – 17:15	Discussion
17:15 – 17:30	<i>Book launch – Breadfruit Flavours: The Ultimate Breadfruit Cookbook</i> Chanelle Joseph, Instructor, Department of Agricultural Economics and Extension, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine, Trinidad and Tobago
18:30 – 21:00	Cultural evening

Tuesday 07 July, 2015

Plenary Session 4: Country/Organisational Papers

Chairperson - Mr. Bruce Lauckner, Head Strategic Alliances, Caribbean Agricultural Research and Development Institute (CARDI)

8:00 – 8:10	Montserrat Ronald Barzey
8:10 – 8:20	Grenada Roderick St. Clair and Randolph Shears
8:20 – 8:30	St. Lucia Gasper George and Euthalia Philogene
8:30 – 8:40	Antigua & Barbuda Pamella Thomas
8:40 – 8:50	Dominica Leslie Shillingford and Augustus Bannis
8:50 – 9:00	Cuba Marlene Garcia Collado
9:00 – 9:10	Haiti Lidwine Hyppolite
9:10 – 9:20	Kenya Quincy Burgess
9:20 – 9:40	PCS Nitrogen Karl Burgess

9:40 – 10:00	Discussion
10:00 – 10:30	COFFEE BREAK

Plenary Session 5: Production Management

Chairperson - Dr. Gaius Eudoxie, Lecturer in Soil Science, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago

10:30 – 10:45	<p><i>Evaluation of regrowth responses of breadfruit cultivars 'yellow' and 'Ma'afala' to different levels of pruning</i></p> <p>Laura Roberts-Nkrumah, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
10:45 – 11:00	<p><i>Effects of planting material on early growth and development responses of breadfruit (Artocarpus altilis) cultivar 'yellow' in studies at two locations on Trinidad</i></p> <p><u>Michael C. Gloster</u> and Laura Roberts-Nkrumah, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
11:00 – 11:15	<p><i>Air layering (marcotted) of breadfruit (Artocarpus altilis)</i></p> <p>Puran Bridgemohan, <u>Musa El S. Mohamed</u>, Arjune Ramoutar, Kimberly Singh, and Ronell Bridgemohan, Bioscience Agriculture and Food Technology Centre. University of Trinidad and Tobago</p>
11:15 – 11:30	<p><i>A preliminary evaluation of growth and physiological responses of breadfruit cultivars to waterlogging</i></p> <p><u>Gem Thomas</u>, Laura Roberts-Nkrumah and Mark Wuddivira, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
11:30 – 11:45	<p><i>Breadfruit (Artocarpus altilis) production and processing research initiative in Costa Rica</i></p> <p>Gustavo Angulo and <u>Paul Zink</u>, Earth University, San José, Costa Rica</p>
11:45 – 12:00	<p><i>Commercialisation of breadfruit (Artocarpus altilis Fosb.) in Mauritius</i></p> <p><u>D. Abeeluck</u>, I. Boodhram, K. Koopla and S. Subramanian, Food and Agricultural Research and Extension Institute (FAREI), Mauritius</p>
12:00 – 12:15	Discussion
12:15 – 13:00	LUNCH

Plenary Session 6: Postharvest Technology

Chairperson - Ms. Shawntae Rodney, Research Scientist, Scientific Research, Council (SRC), Jamaica

- 13:00 – 13:15 *Physiological manifestations of chilling injury in breadnut (Artocarpus camansi)*
Majeed Mohammed and Lynda Wickham, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago
- 13:15 – 13:30 *Postharvest of breadfruit*
Clement Sankat¹ and Rohanie Maharaj², ¹Office of the Campus Principal, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago, ²Univessity of Trinidad And Tobago, Trinidad
- 13:30 – 13:45 *Breadfruit exports from St. Lucia and the OECS and harvesting and postharvest handling*
Ronald Pilgrim, Caribbean Agricultural Research and Development Institute (CARDI), St. Lucia
- 13:45–14:00 *Post-harvest breadfruit innovations: low cost solutions for processing and drying aimed at small-scale entrepreneurs*
Camille George, University of St. Thomas, St. Paul Minnesota/Meghan Fleckenstein-Compatible Technology International, St. Paul Minnesota, USA
- 14:00 – 14:15 *A hybrid solar dryer for processing breadfruit*
S. Michael McLaughlin, Trees that Feed Foundation, USA
- 14:15 – 14:30 *Processing chataigne or jack fruit*
Rodney Harnarine and Ryan Salick, Department of Mechanical and Manufacturing Engineering, Faculty of Engineering, Faculty of Engineering, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago
- 14:30 – 14:45 Discussion
- 14:45 – 15:15 COFFEE BREAK

Plenary Session 7: Processing and Utilisation

Chairperson – Mr. Livai Tora, Farmer, Kokosiga Pacific Limited, Fiji

- 15:15 – 15:30 *Effects of drying and rehydration on product quality of breadnut*
Lisa Harrynanan¹ and Clement Sankat², ¹Inter-American Institute for Co-operation on Agriculture (IICA), ²Office of the Campus Principal, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago

15:30 – 15:45	<p><i>Assessment of the sensory characteristics and acceptability of breadfruit flours in quick and yeast breads</i></p> <p>L. Pierre¹, <u>I. Francis-Granderson</u>¹, L. Roberts-Nkurmah², G. Bacchus-Taylor³ and J. Yarde-Blackman¹, ¹Department of Agricultural Economics and Extension, ² Department of Food Production, Faculty of Food Production, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago, ³Department of Chemical Engineering, Faculty of Engineering, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
15:30 – 15:45	<p><i>Quality response of meatloaf to different levels of Artocarpus altilis pulp flour</i></p> <p>V. Attoh-Kotoku¹, <u>F. Appiah</u>² and O. Adjei², ¹Departments of Animal Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, ²Department of Horticulture, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana</p>
15:45 – 16:00	<p><i>Evaluation of physicochemical properties and digestibility of breadfruit varieties in Ghana</i></p> <p><u>F. Appiah</u>¹, I. Oduro² and W.O. Ellis¹, ¹Departments of Horticulture and ²Food Science and Technology, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana</p>
16:00 – 16:15	<p><i>The characterization of starch from selected breadfruit (Artocarpus altilis) cultivars at two stages of maturity</i></p> <p><u>Jacklyn Broomes</u>, Neela Badrie and Laura Roberts-Nkrumah, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
16:15 – 16:30	<p><i>The application of pregelatinized starch extracted from Artocarpus altilis (Breadfruit) as a direct compression binder in tablets</i></p> <p><u>Shawntae Rodney</u>^{1,2}, Amusa Sarafadeen Adebayo³ and Cliff K. Riley², ¹College of Health Sciences, University of Technology, Jamaica, ²Scientific Research Council, Jamaica, ³College of Pharmacy, Roosevelt University, Illinois, USA</p>
16:30 – 16:45	<p><i>Effects of binding agents on the compositional and physicochemical properties consumer as well as acceptance of breadfruit nut (Artocarpus camansi) patties</i></p> <p>Hana Hosein and Neela Badrie, Department of Food Production, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago</p>
16:45 – 17:00	Discussion
17:00 – 17:45	Poster Session
17:45 – 18:00	BREAK
18:00 – 19:00	Panel Presentation

Moderator: Mr. Maurice Wilson, Head, Resource Mobilisation, Monitoring and Evaluation, Caribbean Agricultural Research and Development Institute (CARDI), The University of the West Indies, St. Augustine Campus, Trinidad and Tobago

Presentation

Pacific Region Breadfruit Initiative: Cultural village/community-based economic development building upon traditional wisdom and modern knowledge in the Pacific Region

Papaalii Failautusi Avegalio, M. Kalani Souza, Alvin Huang, Jeff Gwartz, Bob Gough and Craig Elevitch, Pacific Region Breadfruit Initiative, University of Hawaii, Manoa, USA

18:45 – 19:00

Discussion

Wednesday 08 July, 2015

8:00 – 17:00

Field Trip

- University Field Station, Faculty of Food and Agriculture, UWI
- Food Technology Unit Laboratory, Faculty of Engineering, UWI
- La Reunion Propagation Station, Ministry of Food Production
- PCS Nitrogen Orchard
- NAMDEVCO
- Exporter

Thursday 09 July, 2015

Plenary Session 8: Organisational Papers/Marketing and Consumption

Chairperson – Mr. Heiko Bammann, Trade and Markets Officer, Food and Agriculture Organisation of the United Nations (FAO), Sub-regional Office of the Caribbean, Christ Church, Barbados

8:30 – 8:45

Global Breadfruit: Food security for a growing world
Josh Schneider, Global Breadfruit, USA

8:45 – 9:00

Revitalizing Breadfruit in Hawaii – A model for encouraging the cultivation and use of breadfruit in the tropics
Diane Ragone¹, Craig Elevitch² and Andrea Dean², ¹Breadfruit institute, National Tropical Botanical Garden, ²Hawaii Homegrown Food Network

9:00 – 9:15	<i>Trinidadian consumers' willingness to pay for breadfruit products</i> Emelene S. Hassanally, Department of Agricultural Economics and Extension, Faculty of Food and Agriculture, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago
9:15 – 9:30	<i>The case of the breadfruit chip: An entrepreneurial opportunity</i> <u>Candace Brathwaite</u> , Jairzenho Bailey and Brandon Hamid, Arthur Lok Jack School of Business. Trinidad and Tobago
9:30 – 9:45	<i>Distribution and utilization of breadfruit: Case study Barbados</i> Marion Hart, Seven of Harts, Bridgetown, Barbados
9:30 – 9:45	<i>Jeffrey Town: A small player in the breadfruit industry</i> Ivy Gordon, Jeffrey Town Farmers Association, Jamaica
9:45 – 10:00	<i>Breadfruit: A hidden treasure yet to be discovered</i> Penelope Harris, Carnegie School of Home-Economics, Guyana
10:00 – 10:10	Discussion
10:10 – 10:30	COFFEE BREAK

Plenary Session 9: Economics and Value Chain

Chairperson – Dr. Diane Ragone, Director, National Tropical Botanical Garden, Hawaii, USA

10:30 – 10:45	<i>The comparative advantage of breadfruit as an orchard crop in the face of climate change: The experience of the Pacific islands</i> Andrew McGregor ¹ , <u>Livai Tora</u> ² , Kaitu Erasito ³ and Kyle Stice ² , ¹ Koko Siga Pacific, Suva, Fiji, ² Koko Siga Pacific, Nadi, Fiji, ³ Secretariat of the Pacific Community, Suva, Fiji
10:45 – 11:00	<i>Developing commercial breadfruit orchards in Fiji. A financial and economic analysis.</i> Livai Tora ¹ , Kaitu Erasito ³ , Andrew McGregor ² and Kyle Stice ¹ , ¹ Koko Siga Pacific, Nadi, Fiji, ² Koko Siga Pacific, Suva, Fiji, ³ Secretariat of the Pacific Community, Suva, Fiji
11:00 – 11:15	<i>Economics of processing breadfruit</i> <u>Oliver Wills</u> and Olivia Wills, Livy's Food Limited, Jamaica and USA
11:15 – 11:30	<i>Breadfruit and breadnut export from Guyana</i> Richard Parasam, Guyana

11:30 – 11:45	<i>Agrotourism</i> Ena Harvey, Inter-American Institute for Co-operation on Agriculture, Barbados
11:45 – 12:00	Discussion
12:00 – 13:00	LUNCH
13:00 – 14:45	Stakeholders forum
14:45 – 15:15	COFFEE BREAK
15:15 – 16:30	Stakeholders Forum
16:30 – 17:00	Launch of International Breadfruit Network
18:30 – 21:00	Awards Ceremony and Dinner

Friday 10 July, 2015

Venue: JFK Auditorium and Quadrangle, The University of the West Indies,
St. Augustine, Trinidad and Tobago

9:00 – 18:00	Breadfruit Festival and Exhibition
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