



BREADFRUIT INSTITUTE



Diane Ragone, PhD, Director

PROGRESS REPORT - Fall 2012

It's been more than a year since our last progress report. A great deal of positive growth has been made in different program areas. I know you'll enjoy learning about the work we are doing to advance our mission to promote the conservation and use of breadfruit for food and reforestation.

Global Breadfruit Projects

Breadfruit tree planting projects are spreading around the world. As part of our Global Hunger Initiative, Ma'afala and Ulu fiti plants from our horticultural partner, Global Breadfruit (www.globalbreadfruit.com) have been delivered to 14 countries in Africa, the Caribbean, Central America and the Pacific Islands.



14 Countries Receiving Breadfruit Plants from Global Breadfruit



Breadfruit trees in nursery in Haiti

A key player is the Trees That Feed Foundation, which has provided thousands of trees to Jamaica and Haiti, and is developing partnerships with numerous organizations and community groups to distribute trees.

Learn more about their work at: www.treesthatfeed.org

Ghana - In October 2011, the Institute launched a collaborative breadfruit project with the Hunger Alliance of Ghana (HAG). The African "Breadfruit Revolution" is now in full swing with close to 700 vigorous breadfruit trees distributed to farmers at the beginning of the rainy season in May. The alliance works with 320 farmer-based organizations.

"Breadfruit has come to stay in Ghana and farmer and public interest is growing. It has come to support farmers, conserve the environment, promote food security."

HAG Director Nana Ayim Poakwah



Ghanaian farmer receiving trees

Much of the work of the Breadfruit Institute is supported by grants and contributions. We continue to seek additional funding to accomplish our mission. You can help us in this critical endeavor.

To make a donation, please visit: <http://ntbg.org/breadfruit/donate/plantatree.php>

Hawaii Projects

The Institute recently launched the *Plant a Tree of Life – Grow ‘Ulu* project with a \$100,000 grant from the Wisconsin-based Ceres Trust. We will distribute more than 4,000 trees to native Hawaiians, Pacific Islanders, and low-income residents throughout Hawai‘i to plant in their yards and communities. Hawai‘i imports more than 85% of its food, so food sustainability is a critical issue. In just two months we distributed nearly 1,000 trees on Kauai and Oahu—working with community associations, schools, churches, and other organizations. Each recipient fills out an application which includes the question, “Why do you want to plant a breadfruit tree?” The responses are touching.

“This tree fed my whole family growing up.” “Food security and a beautiful shade tree.”

Outreach - We’ve been busy with the Ho’oulu ka ‘Ulu project, a collaboration with the Hawai‘i Homegrown Food Network, to revitalize breadfruit in Hawai‘i. Programs included three Big Island festivals, attended by 5,000 people, who enjoyed breadfruit cooking demonstrations and contests, technical presentations, cultural activities, music, and more.



Save the Date
“Breadfruit Festival Takes Root”
September 15, 2013
NTBG Southshore Visitors Center
Kaua‘i

Maui - Ian Cole, BFI Collection Manager/Curator, has given numerous presentations on breadfruit tree care and inspiring cooking demonstrations working with Hawaii Tropical Fruit Growers, Maui Culinary Academy, Slow Foods Maui, Maui Association of Landscape Professionals, Hawaii Farmers Union-Maui, and others.

Oahu - Angela Tillson, BFI Program Manager, organized the “Ulu Workshop - Native Food, Native Stories” in March at the Bishop Museum. Close to 200 people attended to share their knowledge and love for breadfruit.

Distinguished Visitors

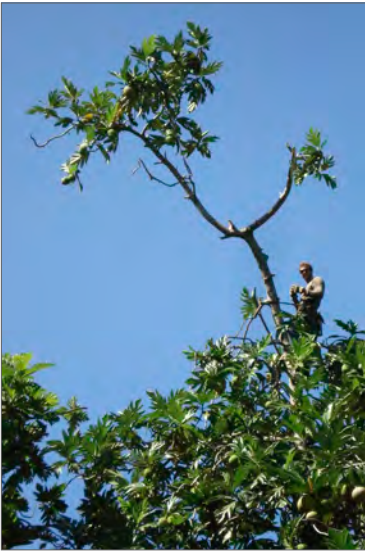
In January, the Institute hosted government delegations from French Polynesia and American Samoa who came to Hawai‘i to meet with Dr. Ragone and Dr. Susan Murch and visit the breadfruit collection at Kahanu Garden. The President of French Polynesia was accompanied by the ministers of Agriculture and Marine Resources. Two weeks later, the Governor and First Lady of American Samoa, the directors of Agriculture and Commerce, and the Director and Senior Business Development Manager of the Pacific Business Center at the University of Hawai‘i paid a visit. They are keen to explore ways to expand breadfruit production and use in their countries in collaboration with the Institute.



American Samoa delegation visits breadfruit collection

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Breadfruit Collection



This globally important resource for conservation, research, education, and food security underpins all of our initiatives. Ian Cole, Collection Manager/Curator, continues to refine and implement a management strategy for the collection. Ian single-handedly manages the horticultural care of 285 breadfruit trees, and provides critical support for the Global Hunger Initiative by regularly collecting bud material for micropropagation research. Ian utilizes methods, tools, and techniques from traditional and organic farming methods, natural farming, and Commercial Orchard management in the hopes that this comprehensive approach will help us achieve the overall goal of healthy trees for many years to come. One important tool is quarterly soil and leaf tissue testing to provide more exact fertilizers and nutrition to the trees. An Environmental Quality Incentives Program grant from the USDA Natural Resources Conservation Service provides support for planting cover crops, composting, mulching, and other horticultural practices. Ian also harvests tons of fruit for outreach projects!

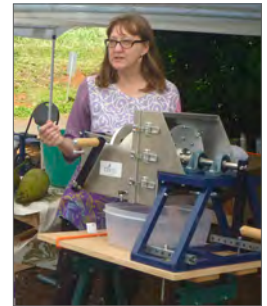
Congratulations to Ian for completing a training course and obtaining his credentials as a Certified Arborist from the International Society of Arboriculture.

Breadfruit Flour



Dr. Camille George at the University of St. Thomas and Compatible Technology International in Minnesota are developing a breadfruit flour production system designed to be suitable for the developing world. As part of this project, Dr. George held a dryer competition for a simple, cost effective and scalable design. Sixteen teams entered the competition and two winners were selected. A manual shredder, solar/air drying tent, and pedal-powered grinder

were acquired with a grant from an NTBG Trustee. In August, Dr. George came to Kauai and trained staff and volunteers to use the equipment. Further tests are being conducted to determine the time and labor required to produce flour using this system.



Dr. Camille George demonstrates use of breadfruit shredder

Liquid Breadfruit - Maui Brewing Company, known for their handcrafted ales and lagers, have created a new beer in collaboration with Dogfish Head brewery in Maryland. The Institute is providing fruit for this specialty beer and a portion of the proceeds will be donated to support the Institute. The beautiful can bears the NTBG/Breadfruit Institute logo. The beer will be distributed in Hawaii and 10 western states.

“It tasted like what it feels like to be on Maui...like nature magnified: tropical and refreshing and lovely.” Sam Calagione, Dogfish Head Founder & President



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Research

In addition to being a magnet for breadfruit aficionados around the world, NTBG's breadfruit collection provides unique opportunities for research to support the Institute's mission. Max Jones earned his PhD in Biology at the University of British Columbia Okanagan for his research on morphological, agronomic, and nutritional diversity of breadfruit. Takena Redfern, from the island nation of Kiribati, earned a MSc. in Plant Pathology at the University of Hawai'i for her work on identifying and describing breadfruit diseases. It is exciting to see a new generation of scientists expanding knowledge about breadfruit. Here are some recent publications by NTBG staff and research collaborators.

Lucas & Ragone, 2012. Will breadfruit solve the world hunger crisis? New developments in an innovative food crop. *ArcNews*.

Jones, Murch, Wiseman & Ragone, 2012. Morphological diversity in breadfruit: Insights into domestication, conservation, and cultivar identification. *Genetic Resources & Crop Evolution*.

Jones, Klun, Cantrell, Ragone, Chauhan, Brown & Murch, 2012. Isolation and identification of mosquito (*Aedes aegypti*) biting deterrent fatty acids from male inflorescences of breadfruit. *J. Agricultural & Food Chemistry*.

Xing, Koch, Jones, Ragone, Murch & Hart, 2011. Mutualism breakdown in breadfruit domestication. *Proceedings Royal Academy B*.

Jones, Lane, Murch, Ragone & Cole, 2011. Breadfruit: An old crop with a new future. In *Comprehensive Biotechnology, 2nd Ed*.

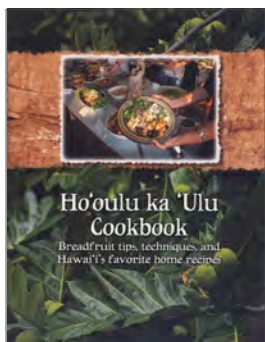
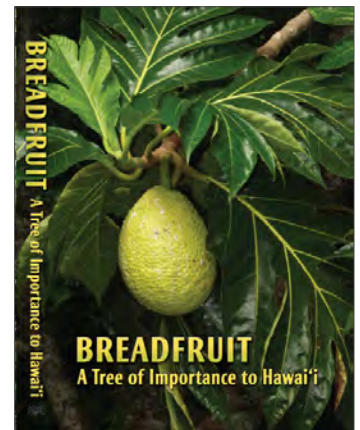
Jones, Ragone, Taviana, Bernotas & Murch, 2011. Beyond the Bounty: Breadfruit for food security and novel foods in the 21st century. *Ethnobotany Research & Applications*.

Jones, Ragone, Aiona, Lane & Murch, 2011. Nutritional and morphological diversity of breadfruit: Identification of elite cultivars for food security. *J. Food Composition & Analysis*.

Ragone, 2011. Farm and Forestry Production and Marketing Profile for Breadfruit. In *Specialty Crops for Pacific Island Agroforestry*.

Information Resources

Video - Want to know more about breadfruit's rich history and value in the islands? The Institute and Jim Wiseman, DigitalMedia Hawaii/Pacific, produced *Breadfruit—A Tree of Importance to Hawai'i*, with funding from the Kaulunani Urban & Community Forestry Grant Program and the Hawai'i Community Foundation's Pikake Fund. The video covers the importance of breadfruit, its value for food security as a delicious and nutritious food, aesthetic contributions to urban landscapes, and the work of the Breadfruit Institute to promote the conservation and use of breadfruit. Watch the video on our YouTube channel (BreadfruitInstitute1): (http://youtube.com/watch?v=Vb8_f1K6FZA).



Cookbook - Learn how to select and cook breadfruit and prepare wonderful dishes! The new *Ho'oulu ka 'Ulu Cookbook: Breadfruit tips, techniques, and Hawaii's favorite home recipes* is essential for both novice and expert cooks. Twenty recipes selected from the last 25 years of breadfruit cook-offs and cooking contests are presented along with a beautiful photograph of each dish. It is available as a printed on-demand publication at Amazon: (http://www.amazon.com/dp/1479307491/ref=cm_sw_su_dp).