BREADFRUIT INSTITUTE

PROGRESS REPORT - JANUARY 2006

The Breadfruit Institute achieved several key goals in recent months. We completed 10 years of research on seasonality, constructed a Field Station, and began global networking with countries most likely to benefit from our research and experience.

Tissue Culture Project

Kahanu Garden was a hub of activity for visiting scientists who are working to develop effective, simple methods to propagate breadfruit plants using tissue culture. This international program involves the Breadfruit Institute, the University of British Columbia and the University of Guelph in Canada, and the Regional Germplasm Centre in Fiji. The goal is to conserve plants in tissue culture and mass produce varieties for distribution to tropical countries that need a sustainable food supply. Our collaborators, Valerie Tuia, Dr. Susan Murch, Dr. Praveen Saxena, and Wendy Lei Shi diligently collected hundreds of buds from 20 varieties to establish shoot cultures in their respective facilities. Our collaborators enjoyed getting out of their labs and working amongst the breadfruit trees. They were very excited about the Field Station—just a framed structure at that point—and using it to advance this important research work.

Distribution Network

To complement the tissue culture initiative, the Institute is working to establish a network for distributing breadfruit varieties and to provide technical support needed to grow and use breadfruit. In October, Dr. Ragone and General Counsel Michael Shea met with staff at the USDA Agricultural Research Service, the World Bank, the U.S. Agency for International Development, the Partnership to End Hunger and Poverty in Africa, and the embassies for both Madagascar and Ghana, to introduce the work of the Breadfruit Institute. An enquiry letter and the case statement were mailed to ambassadors from 70 nations in Africa, Asia, Central and South America, and the Caribbean, where breadfruit currently grows or could be grown. We are requesting their advice and assistance in collaborative partnerships with the Ministry of Agriculture, research organizations, NGOs, and communities in their countries to establish plantings where selected breadfruit varieties can be tested under local conditions to develop more sustainable agriculture, increase crop diversity, and enhance food security.

Field Station Completed

The Field Station will be used to support research and education activities related to the Breadfruit Collection, providing office, laboratory, and work space for research staff, interns, visiting scientists, and others interested in studying breadfruit. It will allow us to expand the scope of research on the Collection and provide a convenient venue for workshops. Most importantly, it provides the Institute with a visible and attractive physical presence at the site and establishes Kahanu Garden as the world's center for breadfruit conservation and research.

The station is a 24' x 24' structure with half of the space designed as a secure, enclosed building, housing a field laboratory and office. The other half is more open with extensive screened windows to take advantage of natural light and air circulation and to exclude mosquitoes. It will contain ample work counters and other items needed to handle fresh fruit and other plant materials. Construction of the station commenced in August with the pouring of the foundation. We are excited that the building is now completed and research activities can relocate from the equipment shed. After final inspection the Field Station will be ready for use in February 2006.

Ten Years of Seasonality Research Finished

Knowing the bearing season of different breadfruit varieties is key to selecting and planting the right trees to have an extended, or even year-round, availability of fruit. This long-term research project ended in mid-January. Data collection involved carefully examining 200 breadfruit trees every two weeks; recording the presence or absence of male flowers and five stages of fruit development. Estimates of total yield and number of mature, harvestable fruit were also recorded. All data were recorded using a field data sheet and have been entered into a computer. The next step is analysis and interpretation of a massive data set. This work certainly involved patience and perseverance. Some of the trees are more than 60 feet tall, and binoculars were needed to look at the upper branches. Regular and careful examination of the Breadfruit Collection allowed the Research Technician to become familiar with each and every tree, following the rhythms of production, and being aware of any problems with the trees, such as broken branches or need for fertilizer. An important use of this information is to put together a fruiting calendar for each variety which will help people choose varieties that have the best potential for their growing conditions.

Other News

Speaking of calendars, the theme of the International Plant Genetic Resources Institute's (IPGRI) 2006 calendar is 'Diversity for Nutrition: Making the most of Neglected Species.' Breadfruit is featured in June, with a smiling Leimana Naihe, the brother of Keala Ahuna, manager of the visitors program at Kahanu Garden.

Christy Taylor-Parsil joined the staff of the Breadfruit Institute as Assistant to the Director. Christy moved to Kaua`i from Arizona in 2001 and she and her husband Bruce have been active volunteers at NTBG, helping out in the Horticulture Center, Library, and Development Department. With her extensive background in library, legal, medical, and academic settings, she brings a wealth of organizational skills to the Institute.